Excel 2004 AppleScript Reference

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Using the Excel Dictionary

About the Excel AppleScript Dictionary

The Microsoft Excel AppleScript dictionary provides comprehensive access for programmatically controlling Excel by using AppleScript. The Excel AppleScript Dictionary is based on the Visual Basic object model for Excel, and as such its terminology and syntax closely mirror the terminology and syntax used in Visual Basic. As a result of this close relationship with Visual Basic, the Excel AppleScript Dictionary might appear more complex, and less "English-like" than other AppleScript Dictionaries.

Using classes and commands

Classes and commands in the Excel AppleScript Dictionary often have many properties and parameters. Many of these properties and parameters are represented by enumerations — or lists of — constants rather than text or numbers or Boolean operators. These enumerations use many of the same words as their parameters or properties and are usually descriptive of what they represent. Because of the nature of the AppleScript language and the complexity of the underlying object model, expressions containing several properties and parameters can be very long and often look confusing. In such cases, it is helpful to use parentheses to separate out one property from another to make your scripts easier to read. Additionally, you will find that the Excel object model is very deep, requiring several layers to access certain objects. You might find it helpful to use variables to store these objects and reduce the complexity of your script.

As in other applications, optional command parameters are denoted in the dictionary by [square brackets]. Class properties always have default values, which means that when you create new objects it is not necessary to supply values for all of the properties. Properties denoted by [r/o] are read-only and cannot be set once an object exists. However, when you use the **make** command to create new objects, most read-only properties can be set by using the `with properties` clause. For more information about the properties available for various objects, see the object's entry in the Dictionary Reference portion of this guide.

Activating a workbook

Activating a workbook using the **activate object** command puts the workbook in the active window. The following procedure activates the open workbook named "MyBook.xls."

```
tell application "Microsoft Excel"
    activate
    activate object workbook "MyBook.xls"
end tell
```

Note The **activate object** command works only if Excel is the active program. When you use the **activate object** command, you should also use the **activate** command to ensure that Excel is the active program.

Creating a new workbook

To create a new workbook, you use the **make** command. The following procedure creates a new workbook. Microsoft Excel automatically names the workbook Sheet*N*, where *N* is the next available number. The new workbook becomes the active workbook.

```
make new workbook
```

A better way to create a new workbook is to assign it to a variable. In the following example, the **workbook** object returned by the **make** command is assigned to the variable newBook. Next, several properties of newBook are set. You can easily control the new workbook using the object variable.

```
set newBook to make new workbook

set update remote references of newBook to true

save workbook as newBook filename "95Sales.xls"
```

Opening a workbook

You can open a workbook by using the **open workbook** command. The following procedure opens a workbook named MyBook.xls.

```
open workbook workbook file name "Macintosh HD:Users:Shared:MyBook.xls"
```

Note It is recommended that you use the **open workbook** command (Microsoft Excel Suite) rather than the **open** command (Standard Suite) to open a workbook in Excel. In addition to returning a workbook object to which you can assign a variable, the **open workbook** command provides several optional parameters you can set when opening the workbook. If you want to open multiple workbooks at once, use the **open** command.

Referring to sheets by name

You can identify sheets by name by using the **worksheet** and **chart** classes. The following statements activate various sheets in the active workbook.

```
activate object worksheet "Sheet1"
```

```
activate object chart object "Chart 1" of sheet 1
```

You can use the **sheet** class to return a worksheet or chart. The following example activates the sheet named "Chart1" in the active workbook.

```
activate object sheet "Chart1"
```

Note   Charts embedded in a worksheet belong to the **chart object** class, while charts that exist on their own sheets belong to the **chart** class.

Referring to sheets by index number

An index number is a sequential number assigned to a sheet, based on the position of its sheet tab (counting from the left) among sheets of the same type. The following procedure uses the **worksheet** class to activate worksheet one in the active workbook.

```
activate object worksheet 1
```

If you want to work with all types of sheets (worksheets, charts, modules, and dialog sheets), use the **sheet** class. The following procedure activates sheet four in the workbook.

```
activate object sheet 4
```

Note   The index order can change if you move, add, or delete sheets.

How to reference cells and ranges

A common task when you are creating a script is to specify a cell or range of cells and then do something with it, such as enter a formula or change the format. You can usually do this in one statement that identifies the range and also changes a property or applies a command.

A **range** object can be either a single cell or a range of cells. The following topics show the most common ways to identify and work with **range** objects.

Referring to cells and ranges using A1 notation

You can refer to a cell or range of cells in the A1 reference style by using the **range** class. The following procedure changes the format of cells A1:D5 to bold.

```
set theRange to range "A1:D5" of sheet 1 of active workbook
```

```
set bold of font object of theRange to true
```

The following table illustrates some A1-style references using the **range** class.

Reference	Meaning
`range "A1"`	Cell A1
`range "A1:B5"`	Cells A1 through B5
`range "C5:D9,G9:H16"`	A multiple-area selection
`range "A:A"`	Column A
`range "1:1"`	Row one
`range "A:C"`	Columns A through C
`range "1:5"`	Rows one through five
`range "1:1,3:3,8:8"`	Rows one, three, and eight
`range "A:A,C:C,F:F"`	Columns A, C, and F

You can also use absolute references with the **range** class. When you return a cell reference from Excel, the reference is returned as an absolute reference. The following table illustrates absolute cell references.

Reference	Meaning
range "$A$1"	Cell A1
range "$A$1:$B$5"	Cells A1 through B5

For more information about the difference between relative and absolute cell references, see "About cell and range references" in Excel Help.

Referring to cells using index numbers

You can use the **cell** class to refer to a single cell by using row and column index numbers. This class inherits properties from a **range** object and represents a single cell. In the following example, `cell 6 of column 1` returns cell A6 on Sheet1. The *value* property is then set to 10.

```
set value of cell 6 of column 1 of active sheet to 10
```

Referring to rows and columns

To work with entire rows or columns, use the **row** class or the **column** class. These classes inherit properties from the **range** class. In the following example, `row 1 of worksheet "sheet 1"` returns row one on Sheet1. The *bold* property of the **font** object for the row is then set to **true**.

```
set bold of font object of (row 1 of worksheet "sheet1") to true
```

The following table illustrates some row and column references using the **row** and **column** classes.

Reference	Meaning
row 1	Row one
rows	All the rows on the worksheet
column 1	Column one
column "A"	Column one
columns	All the columns on the worksheet

To work with several rows or columns at the same time, create an object variable and use the **union** command, combining multiple calls to the **row** or **column** class. The following example changes the format of rows one, three, and five on worksheet one in the active workbook to bold.

```
set mySheet to worksheet "Sheet1" of active workbook
set myUnion to union range1 (row 1 of mySheet) range2 (row 3 of mySheet) ¬
        range3 (row 5 of mySheet)
set bold of font object of myUnion to true
```

Referring to named ranges

Ranges are easier to identify by name than by A1 notation. To name a selected range, click the name box at the left end of the formula bar, type a name, and then press ENTER.

Referring to a named range

The following example refers to the range named "MyRange" in the workbook named "MyBook.xls."

```
set italic of font object of range "MyBook.xls!MyRange" to true
```

The following example places a border around the worksheet-specific range named "Sheet1!Sales" in the workbook named "Report.xls."

```
border around (range "[Report.xls]Sheet1!Sales") weight border weight thin
```

To select a named range, use the **goto** command, which activates the workbook and the worksheet and then selects the range.

```
goto reference (range "MyBook.xls!MyRange")
clear contents selection
```

Referring to cells using a range object

If you set a variable to a **range** object, you can easily manipulate the range by using the variable name.

The following procedure creates the variable `myRange` and then assigns the variable to range A1:D5 on Sheet1 in the active workbook. Subsequent statements modify properties of the range by substituting the variable name for the range object.

```
set myRange to range "A1:D5" of worksheet "Sheet1"
set formula of myRange to "=RAND()"
set bold of font object of myRange to true
```

Referring to multiple ranges

Using the appropriate command, you can easily refer to multiple ranges. To refer to any group of ranges, use the **range** class and **union** command.

Using the range class

You can refer to multiple ranges with the **range** class by putting commas between two or more references. The following example clears the contents of three ranges on Sheet1.

```
clear contents range "C5:D9, G9:H16, B14:D18" of sheet 1 of active workbook
```

Named ranges make using the **range** class to work with multiple ranges easier. The following example works when all three named ranges are on the same sheet.

```
clear contents (range "MyRange, YourRange, TheRange")
```

Using the union command

You can combine multiple ranges into one **range** object using the **union** command. The following example creates a **range** object named `myMultipleRange`, defines it as the ranges A1:B2 and C3:D4, and then formats the combined ranges as bold.

```
set r1 to range "A1:B2" of sheet "Sheet1"

set r2 to range "C3:D4" of sheet "Sheet1"

set myMultipleRange to union range1 r1 range2 r2

set bold of font object of myMultipleRange to true
```

Selecting and activating cells

When you work with Microsoft Excel, you usually select a cell or cells and then perform an action, such as formatting the cells or entering values in them. When you are writing a script, it is usually not necessary to select cells before modifying them.

For example, if you want to enter a formula in cell D6, you don't need to select the range D6. You just need to return the **range** object and then set the *formula* property to the formula you want, as shown in the following example.

```
set formula of range "D6" of worksheet "Sheet1" to "=SUM(D2:D5)"
```

For examples of using other commands to control cells without selecting them, see the topic on "How to reference cells and ranges."

Using the select command and the selection property

The **select** command activates sheets and objects on sheets; the *selection* property returns an object that represents the current selection on the active sheet in the active workbook. Before you can use the *selection* property successfully, you must activate a workbook, activate or select a sheet, and then select a range (or other object) by using the **select** command.

Activating a cell within a selection

You can use the **activate object** command to activate a cell within a selection. There can be only one active cell, even when a range of cells is selected. The following procedure selects a range and then activates a cell within the range without changing the selection.

```
activate object worksheet "Sheet1"

select (range "A1:D4")

activate object (range "B2")
```

Working with the active cell

The *active cell* property returns a **cell** object that represents the cell that is active. You can apply any of the properties or commands of a **range** object to the active cell, as in the following example.

```
activate

activate object worksheet "Sheet1"

set value of active cell to 35
```

Note   You can work with the active cell only when the worksheet that it is on is the active sheet.

Moving the active cell

You can use the **activate object** command to designate which cell is the active cell. For example, the following procedure makes B5 the active cell and then formats it as bold.

```
activate object worksheet "Sheet1"

activate object range "B5" of worksheet "Sheet1"

set bold of font object of active cell to true
```

Note   To select a range of cells, use the **select** command. To make a single cell the active cell, use the **activate object** command.

Selecting the cells surrounding the active cell

The *current region* property returns a range of cells bounded by blank rows and columns. In the following example, the selection is expanded to include the cells adjoining the active cell that contain data.

```
activate object worksheet "Sheet1"

select current region of active cell
```

Microsoft Office Suite

Microsoft Office Suite Classes

Class: assistant

Plural

assistants

Elements

balloon

Represents the Microsoft Office Assistant.

Use the *office assistant* property of the application class to return the **assistant**. Only one **assistant** object can be active at a time. Use the *visible* property to display the Assistant.

By default, the Office Assistant is off. The default Assistant is Max. To select a different Assistant programatically, use the *file name* property.

The following example turns on, displays, and animates the Assistant.

```
set assistant on of office assistant to true

set visible of office assistant to true

set animation of office assistant to greeting
```

Properties

animation

Returns or sets an animation action for the Office Assistant. When this property is applied to the **assistant** object, the Assistant is animated immediately (if it is visible). When this property is applied to the **balloon** object, the Assistant is animated only while the balloon is displayed.

Can be one of the following constants:

appear	**idle**
begin speaking	**listens to computer**
character success major	**look down**
checking something	**look down left**
disappear	**look down right**
empty trash	**look left**
gesture down	**look right**
gesture left	**look up**
gesture right	**look up left**
gesture up	**look up right**
get artsy	**printing**
get attention major	**saving**
get attention minor	**searching**
get techy	**sending mail**
get wizardy	**thinking**
goodbye	**working at something**
greeting	**writing noting something**

assist with help

True if the Office Assistant appears when the user presses the HELP key to display Help. Read/write.

If this property is set to **False**, the Help window appears instead of the Office Assistant.

This property corresponds to the **Respond to HELP key** option (**Office Assistant** dialog box, **Options** tab).

assist with wizards

True if the Office Assistant provides online Help with wizards. Read/write.

This property corresponds to the **Help with wizards** option (**Office Assistant** dialog box, **Options** tab).

assistant item

Returns the text associated with the Office Assistant. Read-only.

assistant on

True if the Office Assistant is enabled. Read/write.

balloon error

Returns a value that indicates the last recorded balloon error. Read-only.

Can be one of the following:

bad picture reference	The balloon contains a graphic that couldn't be displayed because the file doesn't exist or because the graphic isn't a valid PICT file.
bad reference	The balloon contains an unrecognized or unsupported reference.
buttonless modal	The balloon you attempted to display is modal, but it contains no buttons. The balloon won't be shown because it can't be dismissed.
button modeless	The balloon you attempted to display is modeless, contains no buttons, and has no procedure assigned to the *callback* property. The balloon won't be shown because a callback procedure is required for modeless balloons.
none	No error was encountered.
bad character	The balloon contains an ASCII control character other than CR or LF and greater than 32.
out of memory	The balloon won't appear because there is insufficient memory.
too big	The balloon is too big to appear on the screen.
other	The balloon won't appear because some other error occurred; for example, another modal balloon is already active.

feature tips

True if the Office Assistant provides information about using application features more effectively. Read/write.

This property corresponds to the **Using features more effectively** option (**Office Assistant** dialog box, **Options** tab).

file name

Returns or sets the name of the file for the active Office Assistant. Read/write.

The Office Assistant files are installed in the Microsoft Office 2004/Office/Assistants folder.

keyboard shortcut tips

True if the Office Assistant displays Help about keyboard shortcuts. Read/write.

This property corresponds to the **Keyboard shortcuts** option (**Office Assistant** dialog box, **Options** tab).

left position

Returns the horizontal position of the Office Assistant window (in points) relative to the screen.

mouse tips

> **True** if the Office Assistant provides suggestions for using the mouse effectively. Read/write.
>
> This property corresponds to the **Using the mouse more effectively** option (**Office Assistant** dialog box, **Options** tab).

move when in the way

> **True** if the Office Assistant window automatically moves when it's in the way of the user's work area. For example, the Office Assistant will move if it's in the way of dragging or dropping or in the way of keystroke entries. Read/write.
>
> This property corresponds to the **Move when in the way** option (**Office Assistant** dialog box, **Options** tab).

name

> Returns the name of the Office Assistant currently in use. Read-only.

sounds

> **True** if the Office Assistant produces the sounds that correspond to animations. Read/write.
>
> If a sound card is not installed, this property has no effect.

tip of the day

> **True** if the Office Assistant displays a special tip each time the Office application is opened. Read/write.
>
> This property corresponds to the **Show the Tip of the Day at startup** option (**Office Assistant** dialog box, **Options** tab).

top

> Returns the vertical position of the Office Assistant window (in points) relative to the screen..

visible

> **True** if the Office Assistant is visible. Read-write.

Class: balloon checkbox

Represents a check box in the Office Assistant balloon.

Use **balloon checkbox** *index*, where *index* is a number from 1 through 5, to return a single **balloon checkbox** object. There can be up to five check boxes in one balloon; each check box appears when a value is assigned to its *checkbox text* property.

Remarks

Balloon check boxes display the user's choices until the user dismisses the balloon. To record the user's choice as soon as the user clicks the button beside the label, see the topic on balloon labels.

Properties

balloon checkbox item

Returns the text associated with the balloon check box. Read-only.

checkbox text

Returns or sets the text displayed next to a check box in the Office Assistant balloon. Read/write.

checked

True if the specified check box in the Office Assistant balloon is checked. Read/write.

name

Returns the name of the check box label. Read-only.

Class: balloon

Plural
balloons

Elements
balloon checkbox

balloon label

Represents the balloon in which the Office Assistant displays information. A balloon can contain controls such as check boxes and labels.

Only one balloon can be visible at a time. However, it's possible to define several balloons and display any one of them when needed. For more information, see "Defining and Reusing Balloons" later in this topic.

To make the specified balloon visible, use the show balloon command. Use the *call back* property to run procedures based on selections from modeless balloons (balloons that remain visible while a user works in the application).

The following example creates a balloon that contains tips for saving entered data.

```
set newbal to make new balloon of office assistant
set balloon type of newbal to bullets
set icon of newbal to icon tip
set balloon button of newbal to buttons ok cancel
set heading of newbal to "Tips for Saving Information."
repeat 3 times
    make new balloon label at the beginning of newbal
end repeat
set label text of balloon label 1 of newbal to "Save your work often."
set label text of balloon label 2 of newbal to "Install a surge protector."
set label text of balloon label 3 of newbal to "Exit your application properly."
show balloon newbal
```

Defining and Reusing Balloons

You can reuse balloon objects you've already created by assigning the object to a variable and displaying the variable when you need it. This example defines `balloon1`, `balloon2`, and `balloon3` separately so they can be reused.

```
set balloon1 to make new balloon of office assistant
set heading of balloon1 to "First balloon"


Set balloon2 to make new balloon of office assistant
set heading of balloon2 to "Second balloon"


Set balloon3 to make new balloon of office assistant
set heading of balloon3 to "Third balloon"


show balloon balloon1
show balloon balloon3
show balloon balloon2
```

Alternatively, instead of using separate variables, you can place the balloon object into an array.

Properties

balloon button

> Returns or sets the type of button displayed at the bottom of the Office Assistant balloon. When you create a new balloon, this property is initially set to **OK**. Read/write.
>
> Can be one of the following:

buttons abort retry ignore	**buttons ok cancel**
buttons back close	**buttons retry cancel**
buttons back next close	**buttons search close**
buttons back next snooze	**buttons tips options close**
button cancel	**buttons yes all no cancel**
buttons next close	**buttons yes no cancel**
button none	**buttons yes no**
button ok	

balloon mode

Returns or sets the type of balloon displayed. Read/write.

Can be one of the following:

- **auto down balloon** - Balloon is instantly dismissed when the user clicks anywhere on the screen.

- **modal balloon** - This is the initial default setting. User must dismiss the balloon before he or she can return to working in the application.

- **modeless balloon** - User can work in the application while the balloon is visible. When this value is used, a value for the *call back* callback property is also required. When you create a new balloon, this property is initially set to **modal balloon**.

balloon text

Returns or sets the text displayed after the heading but before the labels or check boxes in the Office Assistant balloon. Read/write.

You can specify a graphic to display by using the following syntax:

{type location sizing_factor},
where
type is pict (Macintosh PICT file).
location is the resource id or the path and file name.
sizing_factor specifies the width of the pict.

balloon type

Returns or sets the type of balloon the Office Assistant uses. Read/write.

Can be one of the following:

- **buttons** - This is the initial default setting.

- **bullets**

- **numbers**

call back

Sets the name of the procedure to run from a modeless balloon. Read/write String.

The procedure you specify for the *call back* property must be written to receive three arguments:

- The balloon object that called the procedure

- The value of the button the user clicked

- An integer that uniquely identifies the balloon that called the procedure

heading

Returns or sets the heading that appears in the Office Assistant balloon. Read/write.

You can specify a graphic to display in the balloon heading by using the following syntax:

{type location sizing_factor**}**
where
 type is pict (Macintosh PICT file).
location is the resource id or the path and file name
sizing_factor specifies the width of the pict.

icon

Returns or sets the type of icon that appears in the upper-left portion of the Office Assistant balloon. Read/write.

Can be one of the following:

- **icon alert**

- **icon alert critical**

- **icon alert info**

- **icon alert warning**

- **icon application**

- **icon none**

- **icon tip**

name

Returns the name of the balloon. Read-only.

Class: balloon label

Represents a label in the Office Assistant balloon.

Use **balloon label** *index*, where *index* is a number from 1 through 5, to return a **balloon label** object. There can be up to five labels on one balloon; each label appears when a value is assigned to its *label text* property.

Remarks

Balloon labels record the user's choice as soon as the user clicks the button beside the label. To display the user's choices until the user dismisses the balloon, see the topic on balloon check boxes.

Properties

balloon label item

> Returns the text associated with the balloon label. Read-only.

label text

> Returns or sets the text displayed next to a label in the Office Assistant balloon. Read/write.

> #### Remarks

> You can specify a graphic to display by using the following syntax:

> {type location sizing_factor},
> where
> *type* is pict (Macintosh PICT file)
> *location* is the resource id or the path and file name
> and *sizing_factor* specifies the width of the pict

name

> Returns the name of the balloon label. Read-only.

Class: command bar

Plural
command bars

Elements
command bar control

Represents a command bar in an Office application.

Use **command bar** *index*, where *index* is the name or index number of a command bar, to return a **command bar** object. The following example steps through the collection of command bars to find the command bar named "Forms." If it finds this command bar, the example makes it visible and protects its docking state. In this example, the variable *bars* represents the list of all **command bars**, and the variable *cb* represents a **command bar** object.

```
set foundFlag to false
set bars to command bars
repeat with cb in bars
      repeat 1 times
            if name of cb is "Forms" then
                  set protection of cb to no change dock
                  set visible of cb to true
                  set foundFlag to true
            end if
            exit repeat
            set end of bars to cb
      end repeat
end repeat
if foundFlag is false then
      display dialog "There is no Forms command bar."
end if
```

You can use a name or index number to specify a menu bar or toolbar in the list of available menu bars and toolbars in the Office application. However, you must use a name to specify a menu, shortcut menu, or submenu (all of which are represented by **command bar** objects). This example adds a new menu item to the bottom of the **Tools** menu. When a user clicks the new menu item, it runs the procedure named "qtrReport."

```
set newItem to make new command bar button at command bar "Tools"
set begin group of newItem to True
set caption of newItem to "Make Report"
set face id of newItem to 0
set OnAction of newItem to "qtrReport"
```

If two or more custom menus or submenus have the same name, **command bar** *index* returns the first one.

Properties

bar position

Returns or sets the position of a command bar. Read/write.

Can be one of the following:

- **bar left**
- **bar top**
- **bar right**
- **bar bottom**
- **bar floating**
- **bar pop up**
- **bar menu**

bar type

Returns the type of command bar. Read-only.

Can be one of the following:

- **normal command bar**
- **menubar command bar**
- **popup command bar**

built in

True if the specified command bar or command bar control is a built-in command bar or control of the container application. **False** if it's a custom command bar or control. Read-only.

context

Returns or sets a string that determines where a command bar will be saved. The string is defined and interpreted by the application. Read/write.

You can set the *context* property only for custom command bars. This property will fail if the application doesn't recognize the context string, or if the application doesn't support changing context strings programmatically.

enabled

True if the specified command bar or command bar control is enabled. Read/write.

For command bars, setting this property to **True** causes the name of the command bar to appear in the list of available command bars.

For built-in controls, setting this property to **True** causes the application to determine the state of the control. Setting this property to **False** forces the control to be disabled.

entry index

Returns the index number for a command bar. Read-only.

The position of the first command bar control is 1. Separators are not counted.

height

Returns or sets the height (in pixels) of a command bar or command bar control. Read/write.

An error will occur if you attempt to set the *height* property for a command bar that isn't in a resizable state (that is, if it's docked or protected from resizing).

left position

Returns or sets the distance (in pixels) from the left edge of the specified command bar or command bar control to the left edge of the screen. Returns the distance from the left side of the docking area. Read/write.

local name

Returns the name of a built-in command bar as it's displayed in the language version of the container application, or returns or sets the name of a custom command bar. Read/write.

Note If you attempt to set this property for a built-in command bar, an error occurs.

The local name of a built-in command bar is displayed in the title bar (when the command bar isn't docked) and in the list of available command bars, wherever that list is displayed in the container application.

If you change the value of the *local name* property for a custom command bar, the value of *name* changes as well, and vice versa.

name

Returns or sets the name of the specified object. Read/write.

The local name of a built-in command bar is displayed in the title bar (when the command bar isn't docked) and in the list of available command bars, wherever that list is displayed in the container application.

For a built-in command bar, the *name* property returns the command bar's U.S. English name. To return the localized name, use the *local name* property.

If you change the value of the *name* property for a custom command bar, the value of *local name* changes as well, and vice versa.

protection

>Returns or sets the way a command bar is protected from user customization. Read/write.

>Can be one of or a sum of the following:

>- **no protection**
>- **no customize**
>- **no resize**
>- **no move**
>- **no change visible**
>- **no change dock**
>- **no vertical dock**
>- **no horizontal dock**

row index

>Returns or sets the docking order of a command bar in relation to other command bars in the same docking area. Can be an integer greater than zero.

>Several command bars can share the same row index, and command bars with lower numbers are docked first. If two or more command bars share the same row index, the command bar most recently assigned will be displayed first in its group.

top

>Returns or sets the distance (in pixels) from the top edge of the specified command bar or command bar control to the top edge of the screen. For docked command bars, this property returns or sets the distance from the command bar to the top of the docking area. Read/write.

visible

>**True** if a command bar or command bar control is visible. Read/write.

width

>Returns or sets the width (in pixels) of the specified command bar or command bar control. Read/write.

Class: command bar button

Plural

command bar buttons

Represents a button control on a command bar.

Use **command bar control** *index*, where *index* is the index number of the control, to return a **command bar button** object. (The *control type* property of the control must be **control button**.)

Properties

button face is default

> **True** if the face of the specified command bar button control is its original built-in face. This property can only be set to **True**, which will reset the face to the built-in face. Read/write.

button state

> Returns or sets the appearance of a command bar button control. Can be one of the following

> - **button state up**
> - **button state down**
> - **button state unset**

button style

> Returns or sets the way a command bar button control is displayed. Read/write.

> Can be one of the following:

> - **button automatic**
> - **button icon**
> - **button caption**
> - **button icon and caption**

face id

> Returns or sets the ID number for the face of a command bar button control. Read/write.

> The *face id* property dictates the look, but not the function, of a command bar button. To determine the function of the button, use the *id* property of the **command bar control** object.

> The value of the *face id* property for a command bar button with a custom face is 0 (zero).

shortcut text

> Returns or sets the shortcut key text displayed next to a button control when the button appears on a menu, submenu, or shortcut menu. Read/write.

> You can set this property only for command bar buttons that contain an on-action macro.

Class: command bar combobox

Plural

command bar comboboxes

Represents a combo box control on a command bar.

Use **command bar control** *index*, where *index* is the index number of the control, to return a **command bar combobox** object. (The *control type* property of the control must be **control edit**, **control dropdown**, **control combobox**, **button dropdown**, **split dropdown**, **OCX dropdown**, **graphic combo**, or **graphic dropdown**.)

The following example creates a new command bar combobox and adjusts the size of the control on the command bar named "Custom," and then it adds two items to the combo box.

```
set newCombo to make new command bar control at command bar "Custom" with ¬
        properties {control type:control combobox}
set drop down lines of newCombo to 3
set drop down width of newCombo to 90
set list index of newCombo to 0
add item to combobox newCombo combobox item "First Item" entry index 1
add item to combobox newCombo combobox item "Second Item" entry index 2
```

Properties

combobox style

> Returns or sets the way a command bar combo box control is displayed. Read/write.

> Can be either of the following:

> - **combobox style label**
>
> - **combobox style normal**

combobox text

> Returns or sets the text in the display or edit portion of the command bar combo box control. Read/write.

drop down lines

> Returns or sets the number of lines in the specified command bar combo box control. The combo box control must be a custom control, and it must be either a drop-down list box or a combo box. Read/write.

> **Note** If this property is set for a combo box control that's either an edit box or a built-in combo box control, an error occurs.

> If this property is set to 0 (zero), the number of lines in the control will be based on the number of items in the list.

drop down width

> Returns or sets the width (in pixels) of the list for the specified command bar combo box control. Read/write.

> **Note** An error occurs if you attempt to set this property for a built-in control.

> If this property is set to -1, the width of the list is based on the length of the longest item in the combo box list. If this property is set to 0, the width of the list is based on the width of the control.

list index

> Returns or sets the index number of the selected item in the list portion of the command bar combo box control. If nothing is selected in the list, this property returns zero. Read/write.

> **Note** This property fails when applied to controls other than list controls.

> Setting the list index property causes the specified control to select the given item and execute the appropriate action in the application.

Class: command bar control

Plural

command bar controls

Represents a command bar control. The properties and commands of the **command bar control** object are all shared by the **command bar button**, **command bar combobox**, and **command bar popup** classes.

Note   To write scripts to work with custom command bar controls, use the **command bar button**, **command bar combobox**, and **command bar popup** classes. To write scripts to work with built-in controls in the container application that cannot be represented by one of those three classes, use the **command bar control** class.

Use **command bar control** *index*, where *index* is the index number of a control, to return a **command bar control** object. (The *control type* property of the control must be **control label**, **expanding grid**, **split expanding grid**, **control grid**, or **control gauge**.)

Note   Variables declared as **command bar control** can be assigned **command bar button**, **command bar combobox**, and **command bar popup** values.

Properties

begin group

> **True** if the specified command bar control appears at the beginning of a group of controls on the command bar. Read/write.

built in

> **True** if the specified command bar or command bar control is a built-in command bar or control of the container application. **False** if it's a custom command bar or control, or if it's a built-in control whose *on action* property has been set. Read-only.

control type

> Returns the type of command bar control. Read-only.

> Can be one of the following:

control button	**graphic popup**
button drop down	**graphic dropdown**
button popup	**control grid**
control combobox	**control label**
control custom	**OCX dropdown**
control dropdown	**msopopup**
control edit	**split button MRU popup**
expanding grid	**split button popup**
control gauge	**split dropdown**
generic dropdown	**split expanding grid**
graphic combo	

description text

> Returns or sets the description for the specified command bar control. The description is displayed in the status bar of the container application when the user positions the pointer over a command bar control. Read/write.

> Not all applications display a status bar.

enabled

> **True** if the specified command bar or command bar control is enabled. Read/write.

> For command bars, setting this property to **True** causes the name of the command bar to appear in the list of available command bars.

> For built-in controls, if you set the *enabled* property to **True**, the application determines its state. Setting the *enabled* property to **False** forces the control to be disabled.

entry index

> Returns the index number for the **command bar control**. Read-only.

height

> Returns or sets the height (in pixels) of a command bar or command bar control. Read/write.

> An error will occur if you attempt to set the height property for a command bar that isn't in a resizable state (that is, if it's docked or protected from resizing).

help context ID

> Returns or sets the Help context Id number for the Help topic attached to the command bar control. Read/write.

> To use this property, you must also set the *help file* property.

help file

> Returns or sets the Help file name for the Help topic attached to the command bar control. Read/write.

> To use this property, you must also set the *help context ID* property.

id

> Returns the ID for a built-in command bar control. Read-only.

> A control's ID determines the built-in action for that control. The value of the *id* property for all custom controls is 1.

left position

Returns the distance (in pixels) from the left edge of the specified command bar or command bar control to the left edge of the screen. Returns the distance from the left side of the docking area. Read-only.

name

Returns or sets the caption text for a command bar control. Read/write.

on action

Returns or sets the name of a Visual Basic procedure that will run when the user clicks or changes the value of a command bar control. Read/write.

parameter

Returns or sets a string that an application can use to execute a command. Read/write.

If the specified parameter is set for a built-in control, the application can modify its default behavior if it can parse and use the new value. If the parameter is set for custom controls, it can be used to send information to Visual Basic procedures, or it can be used to hold information about the control (similar to a second *tag* property value).

priority

Returns or sets the priority of a command bar control. A control's priority determines whether the control can be dropped from a docked command bar if the command bar controls can't fit in a single row. Read/write.

Valid priority numbers are 0 (zero) through 7. Special priority numbers are 0 and 1. A priority of 0 indicates an "automatic" value, which means a number is assigned based on the type of control. A priority of 1 means the control cannot be dropped.

tag

Returns or sets information about the command bar control, such as data that can be used as an argument in procedures, or information that identifies the control. Read/write.

tooltip text

Returns or sets the text displayed in a command bar control's ScreenTip. Read/write.

top

Returns or sets the distance (in pixels) from the top edge of the specified command bar or command bar control to the top edge of the screen. For docked command bars, this property returns or sets the distance from the command bar to the top of the docking area. Read-only.

visible

> **True** if a command bar or command bar control is visible. Read/write.

width

> Returns or sets the width (in pixels) of the specified command bar or command bar control. Read/write.

Class: command bar popup

Plural

command bar popups

Elements

[command bar control](#)

Represents a pop-up control on a command bar.

Use **command bar control** *index*, where *index* is the number of the control, to return a **command bar popup** object. (The **control type** property of the control must be **control popup**, **graphic popup**, **button popup**, **split button popup**, or **split button MRU popup**.)

Class: custom document property

Plural

custom document properties

Represents a custom document property of a container document.

Use **custom document property** *index*, where *index* is the name or index number of the custom document property, to return a **custom document property** object that represents a specific custom document property.

Class: document property

Plural

document properties

Represents a built-in document property of a container document.

Use **document property** *index*, where *index* is the name or index number of the built-in document property, to return a single **document property** object that represents a specific built-in document property.

The names of all the available built-in document properties are shown on the following list:

Title	**Number of Words**
Subject	**Number of Characters**
Author	**Security**
Keywords	**Category**
Comments	**Format**
Template	**Manager**
Last Author	**Company**
Revision Number	**Number of Bytes**
Application Name	**Number of Lines**
Last Print Date	**Number of Paragraphs**
Creation Date	**Number of Slides**
Last Save Time	**Number of Notes**
Total Editing Time	**Number of Hidden Slides**
Number of Pages	**Number of Multimedia Clips**

Container applications don't necessarily define a value for every built-in document property. If a given application doesn't define a value for one of the built-in document properties, returning the *value* property for that document property causes an error.

Properties

document property type

Returns or sets the document property type. Read-only for built-in document properties; read/write for custom document properties.

Can be one of the following:

- **boolean**

- **date**

- **float**

- **number**

- **string**

link source

Returns or sets the source of a linked custom document property. Read/write.

This property applies only to custom document properties; you cannot use it with built-in document properties.

The source of the specified link is defined by the container application.

Setting the *link source* property sets the *link to context* property to **True**.

link to context

> **True** if the value of the custom document property is linked to the content of the container document. **False** if the value is static. Read/write.

> This property applies only to custom document properties. For built-in document properties, the value of this property is **False**.

> Use the *link source* property to set the source for the specified linked property. Setting the *link source* property sets the *link to context* property to **True**.

name

> Returns the name of the specified object. Read-only.

value

> Returns or sets the value of a document property. Read/write.

> If the container application doesn't define a value for one of the built-in document properties, reading the *value* property for that document property causes an error.

Class: web page font

Represents the default font used when documents are saved as Web pages for a particular character set.

Use the **web page font** object to describe the proportional font, proportional font size, fixed-width font, and fixed-width font size for any available character set. The following character sets are supported:

Arabic	Korean
Cyrillic	Multilingual
English Western European Other Latin	Unicode
Script	Simplified Chinese
Greek	Thai
Hebrew	Traditional Chinese
Japanese	Vietnamese

Properties

fixed width font

> Sets or returns the fixed-width font setting in the host application. Read/write.

> When you set the *fixed width font* property, the host application does not check the value for validity.

fixed width font size

> Sets or returns the fixed-width font size setting in the host application, in points. Read/write.

> When you set the *fixed width font size* property, the host application does not check the value for validity. If you enter an invalid value, such as a nonnumber, the host application sets the size to 0 points. You can enter half-point sizes; if you enter other fractional point sizes, they are rounded up or down to the nearest half-point.

proportional font

> Sets or returns the proportional font setting in the host application. Read/write.

> When you set the *proportional font* property, the host application does not check the value for validity.

proportional font size

> Sets or returns the proportional font size setting (in points) in the host application. Read/write.

> When you set the *proportional font size* property, the host application does not check the value for validity. If you enter an invalid value, such as a nonnumber, the host application sets the size to 0 points. You can enter half-point sizes; if you enter other fractional point sizes, they are rounded up or down to the nearest half-point..

Microsoft Office Suite Commands

Command: add item to combobox

Adds a list item to the specified command bar combo box control. The combo box control must be a custom control, and it must be either a drop-down list box or a combo box.

Note   This command will fail if it's applied to an edit box or a built-in combo box control.

Syntax

add item to combobox   command bar combobox   Required. An expression that returns a command bar combobox object

  combobox item   Unicode text   Required. The text to be added to the specified control.

  [**entry index**   small integer]   Optional. The position of the specified item in the list. If this argument is omitted, the item is added at the end of the list.

Example

This example adds a combo box control to a command bar. Two items are added to the control, and the number of line items and the width of the combo box are set.

```
set myBar to make new command bar with properties ¬
        {bar type:normal command bar, name:"New"}
set myControl to make new command bar control at myBar¬
    with properties {control type:control combobox, combobox text:"Monday",¬
    combobox style:combobox style label, drop down lines:2, drop down width:75}
add item to combobox myControl combobox item "Monday" entry index 1
add item to combobox myControl combobox item "Tuesday" entry index 2
```

Command: clear combobox

Removes all list items from the specified command bar combo box control (drop-down list box or combo box) and clears the text box (edit box or combo box).

Note   This command will fail if it's applied to a built-in command bar control.

Syntax

clear combobox command bar combobox   Required. An expression that returns a **command bar combobox** object.

Example

This example checks the number of items in the combo box control named "Names" on the command bar named "Custom." If there are more than three items in the list, the example clears the list, adds a new first item to the list, and displays this new item as the default for the combo box control.

```
set myBar to command bar "Custom"
set myControl to command bar control "Names" of myBar
set listItems to get count of combobox items myControl
if listitems > 3 then
    clear combobox myControl
    add item to combobox myControl combobox item "Third Item" entry index 1
    set list index of myControl to 1
end if
```

Command: execute

Runs the procedure associated with a command bar control.

Syntax

execute   command bar control   Required. An expression that returns a **command bar control**, **command bar button**, or **command bar combobox** object.

Remarks

This command runs the specified script or command if controls are currently enabled in the application and if the *enabled* property of the specified object is **True**.

Applying this command to a **command bar popup** object generates a run-time error.

Example

This example checks the value of the combo box control on the custom command bar named "My Custom Bar." If the index number of the command bar control is 1, the example runs the script specified by the *on action* property of the command bar control.

```
set mycontrol to the first command bar combobox of command bar "My Custom Bar"
if entry index of myControl = 1 then
    execute myControl
end if
```

Command: `get combobox item`

Returns the string at the given index of items within a combo box control.

Syntax

get combobox item   command bar combobox   Required. An expression that returns a **command bar combobox** object.

  entry index   small integer   Required. The position of the specified item in the list. If this argument is omitted, the last item in the list is returned.

Command: `get count of combobox items`

Returns the number of items within a combo box control.

Syntax

get count of combobox items   command bar combobox   Required. An expression that returns a **command bar combobox** object.

Example

This example uses the **get count of combobox items** command to check the number of items in the combo box control named "Names" on the command bar named "Custom." If there are more than three items on the list, the example clears the list, adds a new first item to the list, and displays this new item as the default for the combo box control.

```
set myBar to command bar "Custom"
set myControl to command bar control "Names" of myBar
set listItems to get count of combobox items myControl
if listitems > 3 then
    clear combobox myControl
    add item to combobox myControl combobox item "Third Item" entry index 1
    set list index of myControl to 1
end if
```

Command: remove an item from combobox

Removes an item from a command bar combo box control.

Note   This command fails when applied to controls other than list controls.

Syntax

remove an item from combobox   command bar combobox   Required. An expression that returns a **command bar combobox** object.

   entry index   small integer   Required. The index number of the item to be removed from the list.

Example

The following example determines whether there are more than three items in a combo box control. If there are more than three items, the example removes the second item, alters the style, and sets a new value.

```
set myBar to command bar "Custom"
set myControl to command bar combobox 1 of myBar
set listitems to get count of combobox items myControl
if listitems > 3 then
    remove an item from combobox myControl entry index 2
    set combobox style of myControl to combobox style normal
    set combobox text of myControl to "New Default"
end if
```

Command: reset

Resets a built-in command bar to its default configuration, or resets a built-in command bar control to its original function and face.

Syntax

reset   command bar/command bar control   Required. An expression that returns a **command bar**, **command bar control**, **command bar button**, **command bar popup**, or **command bar combobox** object.

Remarks

Resetting a built-in control restores the actions originally intended for the control and resets each of the control's properties back to its original state. Resetting a built-in command bar removes custom controls and restores built-in controls.

Example

This example resets the **Formatting** toolbar to its default state

```
reset command bar "Formatting"
```

Command: show balloon

Displays the specified balloon object. Returns a constant that indicates which balloon the user clicks.

Syntax

show balloon balloon Required. An expression that returns a **balloon** object.

Remarks

You can use the return value of the **show balloon** command to display a user's button selection. The **show balloon** command returns one of the following buttons:

abort button	**back button**
cancel button	**close button**
ignore button	**next button**
no button	**null button**
OK button	**options button**
retry button	**search button**
snooze button	**tips button**
yes button	**yes to all button**

Example

This example creates a balloon that contains three choices

```
set b to make new balloon at office assistant
tell b
    set heading to "This is my heading"
    set balloon text to "Select one of these things"
    repeat 3 times
        make new balloon label at the beginning
    end repeat
    set label text of balloon label 1 to "Choice One"
    set label text of balloon label 2 to "Choice Two"
    set label text of balloon label 3 to "Choice Three"
    show balloon
end tell
```

Microsoft Excel Suite

Microsoft Excel Suite Classes

Class: add in

Plural

add ins

Represents a single add-in, either installed or not installed. This list corresponds to the list of add-ins displayed in the **Add-Ins** dialog box (**Tools** menu).

Use **add in** *index*, where *index* is the add-in title or index number, to return a single **add in** object. The following example installs the Analysis Toolpak add-in.

```
set installed of add in "analysis toolpak" to true
```

Don't confuse the add-in title, which appears in the **Add-Ins** dialog box, with the add-in name, which is the file name of the add-in. You must spell the add-in title exactly as it's spelled in the **Add-Ins** dialog box, but the capitalization doesn't have to match.

The index number represents the position of the add-in in the **Add-ins available** box in the **Add-Ins** dialog box. The following example creates a list that contains specified properties of the available add-ins.

```
set theList to {"Name","Full Name","Path","Installed"}

set value of range "A1:D1" to theList

set bold of font object of range "A1:D1" to true

repeat with i from 1 to (get count of add ins)

        set value of cell ("A" & (i + 1)) to (get name of add in i)

        set value of cell ("B" & (i + 1)) to (get full name of add in i)

        set value of cell ("C" & (i + 1)) to (get path of add in i)

        set value of cell ("D" & (i + 1)) to (get installed of add in i)

end repeat

set wrap text of column "A:D" to true
```

To return a reference to the workbook corresponding to a loaded add-in, use **workbook** *index*, where *index* is the add-in filename (not title). This example sets the wb variable to the workbook for Myaddin.xla.

```
set wb to workbook "Myaddin.xla"
```

If the *installed* property returns **true**, but calls to functions in the add-in still fail, the add-in may not actually be loaded. This is because the **add in** object represents the existence and installed state of the add-in but doesn't represent the actual contents of the add-in workbook. To guarantee that an installed add-in is loaded, you should open the add-in workbook.

Properties

full name

> Returns the name of the object, including its path on disk, as a string. Read-only.

> This property is equivalent to the *path* property, followed by the current file system separator, followed by the *name* property.

installed

> **True** if the add-in is installed. Read/write.

> Setting this property to **true** installs the add-in and calls its Auto_Add functions. Setting this property to **false** removes the add-in and calls its Auto_Remove functions.

name

> Returns or sets the name of the object. The name of a **range** object is a **name** object. For every other type of object, the name is a string.

path

> Returns the complete path of the object, excluding the final separator and name of the object. Read-only.

> Using this property without an object qualifier is equivalent to `get path of application "microsoft excel"` (this returns the path to the Microsoft Excel application).

Class: application

Plural
applications

Elements

add in	**window**
chart sheet	**workbook**
command bar	**sheet**
named item	**worksheet**
range	**international macro sheet**
cell	**macro sheet**
row	**recent file**
column	**ODBC error**

Represents the entire Excel application.

The **application** class contains application-wide settings and options — for example, many of the options in the **Preferences** dialog box (**Excel** menu) — and properties that return top-level objects, such as **active cell**, **active sheet**, and so on.

Properties

Excel cursor

Returns or sets the appearance of the mouse pointer in Excel. Read/write.

Can be one of the following.

Value	Description
default cursor	The default pointer
wait cursor	The spinning color wheel
northwest arrow cursor	The northwest-arrow pointer
I beam cursor	The I-beam pointer

The *Excel cursor* property isn't reset automatically when the script stops running. You should reset the pointer to **default cursor** before your script stops running.

ODBC timeout

Returns or sets the ODBC query time limit, in seconds. The default value is 45 seconds. Read/write.

The value 0 (zero) indicates an indefinite time limit.

active cell

Returns a **range** object that represents the active cell in the active window (the window on top). If the window isn't displaying a worksheet, this property fails. Read-only.

If you don't specify an object qualifier, this property returns the active cell in the active window.

Be careful to distinguish between the active cell and the selection. The active cell is a single cell inside the current selection. The selection may contain more than one cell, but only one is the active cell.

The following expressions all return the active cell, and are all equivalent.

```
active cell
active cell of application
active cell of active window
active cell of active window of application
```

active chart

Returns a **chart** object that represents the active chart (either an embedded chart or a chart sheet). An embedded chart is considered active when it's either selected or activated. When no chart is active, this property returns an incorrect result. Read-only.

If you don't specify an object qualifier, this property returns the active chart in the active workbook.

active printer

This property is not currently supported.

active sheet

Returns an object that represents the active sheet (the sheet on top) in the active workbook or in the specified window or workbook. Returns an error if no sheet is active. Read-only.

If you don't specify an object qualifier, this property returns the active sheet in the active workbook.

If a workbook appears in more than one window, each window might have a different active sheet.

active window

Returns a **window** object that represents the active window (the window on top). Read-only. Returns an incorrect result if there are no windows open.

active workbook

Returns a **workbook** object that represents the workbook in the active window (the window on top). Read-only. Returns an incorrect result if there are no windows open or if either the Info window or the Clipboard window is the active window.

alert before overwriting

True if Excel displays a message before overwriting nonblank cells during a drag-and-drop editing operation. Read/write.

alt startup path

Returns or sets the name of the alternate startup folder. Read/write.

ask to update links

True if Excel prompts the user to update links when opening files with links. **False** if links are automatically updated with no dialog box. Read/write.

autocorrect object

Returns an **autocorrect** object that represents the Excel AutoCorrect attributes. Read-only.

automation security

Allows Office programs to support security for Visual Basic macros that programmatically open a document but are uncertain whether the VB macros in a document are safe. A developer may want to have the VB macro display the security warnings to the user for these documents.

This property is available in Office 2004 for Mac version 11.1 or later.

Returns or sets an **automation security** value that represents the security mode that an Office program uses when programmatically opening files. This property is automatically set to **msoAutomationSecurityLow** when the program is started. Therefore, to avoid breaking VB macros that rely on the default setting, be careful to reset this property to **msoAutomationSecurityLow** after you open a file programmatically. Also, be sure to set this property immediately before and after you open a file programmatically, to avoid malicious subversion.

This property also allows VB macros to choose to open a document and to trigger the appropriate security warning, which is the same as if an end user is manually opening the document. This property does not affect the behavior when the end user uses the user interface (UI) to open files. In this case, this property does not change the settings in the **Security** pane (on the **Application** menu, select **Preferences**, and then click **Security**).

Can be one of the following:

Value	Description
msoAutomationSecurityLow	Turns on all VB macros and is the default value when you start the program.
msoAutomationSecurityForceDisable	Disables all VB macros in all files that are opened programmatically, without showing any security warnings.
msoAutomationSecurityByUI	Uses the security setting that is controlled in the **Security** pane (on the **Application** menu, select **Preferences**, and then click **Security**).

The value of the *display alerts* property does not apply to security warnings. For example, if the user sets the *display alerts* property equal to **false** and the *automation security* property to **msoAutomationSecurityByUI** while the user has macro virus protection enabled in the **Security** pane (on the **Application** menu, select **Preferences**, and then click **Security**), security warnings appear while the VB macro is running. This action allows the VB macro to trap "file open" errors, while still displaying the security warning if the "file open" succeeds.

If the user cancels the command to open the file through the security warning dialog box (by clicking the **Close** button in the message), a run-time error occurs with the command that triggered the "file open." The error code distinguishes between this user UI action and a "file not found" error.

If the VB macro sets **msoAutomationSecurityForceDisable** and opens an Excel workbook with XLM code, the "file open" fails.

build

Returns the Excel build number. Read-only.

It's usually safer to use the *version* property, unless you're sure you need to know the build number.

calculate before save

> **True** if workbooks are calculated before they're saved to disk (if the *calculation* property is set to **calculation manual**). This property is preserved even if you change the *calculation* property. Read/write.

calculation

> Returns or sets the calculation mode.
>
> Can be one of the following:

- **calculation automatic**
- **calculation manual**
- **calculation semiautomatic**

calculation version

> Returns a number whose rightmost four digits are the minor calculation engine version number, and whose other digits (on the left) are the major version of Excel. For a **workbook** object, this property returns the information about the version of Excel that was used the last time the workbook was fully recalculated. Read-only.
>
> If the workbook was saved in an earlier version of Excel and if the workbook hasn't been fully recalculated, then this property returns 0.

caption

> Returns the name that appears in the title bar of the main Excel window. If you don't set a name, or if you set the name to **empty**, this property returns "Microsoft Excel." Read-only.

cell drag and drop

> **True** if dragging and dropping cells is enabled. Read/write.

command underlines

> Returns or sets the state of the command underlines in Excel. Read/write.
>
> Can be one of the following:

- **command underlines automatic**
- **command underlines off**
- **command underlines on**

copy objects with cells

> **True** if objects are cut, copied, extracted, and sorted with cells. Read/write.

custom list count

> Returns the number of defined custom lists (including built-in lists). Read-only.

cut copy mode

> Returns or sets the status of Cut or Copy mode. Read/write.

> Can be one of the following:

Return value	Description
false	Not in Cut or Copy mode.
copy mode	In Copy mode.
cut mode	In Cut mode.
Set value	**Description**
false	Cancels Cut or Copy mode and removes the moving border.
true	Cancels Cut or Copy mode, removes the moving border, and places the contents of the selection on the Clipboard.

data entry mode

> Returns or sets Data Entry mode, as shown in the following table. When in Data Entry mode, you can enter data only in the unlocked cells in the currently selected range. Read/write.

Value	Description
data entry on	Data Entry mode is turned on.
data entry off	Data Entry mode is turned off.
data entry strict	Data Entry mode is turned on, and pressing ESC won't turn it off.

default file path

> Returns or sets the default path that Excel uses when it opens files. Read/write.

default save format

Returns or sets the default format for saving files. Read/write.

Can be one of the following:

add in file format	**template file format**
CSV file format	**current platform text file format**
CSV Mac file format	**text Mac file format**
CSV MSDos file format	**text MSDos file format**
CSV Windows file format	**text printer file format**
DBF2 file format	**text windows file format**
DBF3 file format	**WJ2WD1 file format**
DBF4 file format	**Works1 file format**
DIF file format	**Works 1 all file format**
Excel2 file format	**Works 1 fmt file format**
Excel 2 east asian file format	**Works3 file format**
Excel3 file format	**Works 3 fm 3 file format**
Excel4 file format	**Works4 file format**
Excel 4 workbook file format	**works file format**
Excel7 file format	**works 2 east asian file format**
Excel 9795 file format	**WQ1 file format**
international add in file format	**WJ3 file format**
international macro file format	**WJ3FJ3 file format**
workbook normal file format	**HTML file format**
SYLK file format	**XML spreadsheet file format**

default web options object

Returns the **default web options** object that contains global application-level attributes used by Excel whenever you save a document as a Web page or open a Web page. Read-only.

display alerts

True if Excel displays certain alerts and messages while a script is running. Read/write.

The default value is **true**. Set this property to **false** if you don't want to be disturbed by prompts and alert messages while a script is running; any time a message requires a response, Excel chooses the default response.

If you set this property to **false**, Excel doesn't automatically set it back to **true** when your script stops running. Your script should always set the property back to **true** when it stops running.

display comment indicator

Returns or sets the way cells display comments and indicators. Read/write.

Can be one of the following:

- **no indicator**

- **comment indicator only**

- **comment and indicator**

display excel 4 menus

> **True** if Excel displays version 4.0 menu bars. Read/write.

display formula bar

> **True** if the formula bar is displayed. Read/write.

display full screen

> **True** if Excel is in full-screen mode. Read/write.

> Full-screen mode maximizes the application window so that it fills the entire screen and hides the application title bar. Toolbars, the status bar, and the formula bar maintain separate display settings for full-screen mode and normal mode.

display function tooltips

> **True** if function ToolTips can be displayed. Read/write.

display insert options

> **True** if the **Insert Options** button should be displayed. Read/write.

display note indicator

> **True** if cells containing notes display cell tips and contain note indicators (small dots in their upper-right corners). Read/write.

display recent files

> **True** if the list of recently used files is displayed on the **File** menu. Read/write.

display scroll bars

> **True** if scroll bars are visible for all workbooks. Read/write.

display status bar

> **True** if the status bar is displayed. Read/write.

edit directly in cell

> **True** if Excel allows editing in cells. Read/write.

enable animations

> **True** if animated insertion and deletion is enabled. Read/write.

> When animation is enabled, inserted worksheet rows and columns appear slowly, and deleted worksheet rows and columns disappear slowly.

enable autocomplete

> **True** if the AutoComplete feature is enabled. Read/write.

enable cancel key

Controls how Excel handles ESC or ⌘+period user interruptions to the running procedure. Read/write.

Can be one of the following:

Value	Description
cancel key disabled	Cancel key trapping is completely disabled.
interrupt	The current procedure is interrupted, and the user can debug or end the procedure.
error handler	The interrupt is sent to the running procedure as an error, trappable by an error handler set up with an **On Error GoTo** statement. The trappable error code is 18.

Use this property very carefully. If you use **cancel key disabled**, there's no way to interrupt a runaway loop or other non-self-terminating code.

The *enable cancel key* property is always reset to **interrupt** whenever Excel returns to the idle state and no code is running. To trap or disable cancellation in your procedure, you must explicitly change the *enable cancel key* property every time the procedure is called.

enable events

True if events are enabled for the specified object. Read/write.

enable sound

True if sound is enabled for Microsoft Office. Read/write.

extend list

True if Excel automatically extends formatting and formulas to new data that is added to a list. Read/write.

To be extended, formats and formulas must appear in at least three of the five list rows or columns preceding the new row or column, and you must add the data to the bottom or to the right-hand side of the list.

fixed decimal

All data entered after this property is set to **true** will be formatted with the number of fixed decimal places set by the *fixed decimal places* property. Read/write.

fixed decimal places

Returns or sets the number of fixed decimal places used when the *fixed decimal* property is set to **true**. Read/write.

include empty cells in lists

Returns or sets whether Excel will include or exclude the value of empty cells in range lists. This property does not return the formulas in range lists, only the values. Read/write.

iteration

> **True** if Excel will use iteration to resolve circular references. Read/write.

keep four digit years

> **True** if Excel preserves the display of dates entered with four-digit years. Read/write.

library path

> Returns the path to the Library folder. Read-only.

math coprocessor available

> **True** if a math coprocessor is available. Read-only.

max change

> Returns or sets the maximum amount of change between each iteration as Excel resolves circular references. Read/write.

max iterations

> Returns or sets the maximum number of iterations that Excel can use to resolve a circular reference. Read/write.

measurement unit

> Returns or sets the measurement unit used when the ruler is displayed in page layout view and for measurements typed in dialog boxes.

> Can be one of the following:

- **centimeters**
- **inches**
- **millimeters**

memory free

> Returns the amount of memory (in bytes) available for Excel to use. Read-only.

memory total

> Returns the total amount of memory (in bytes) available for Excel, including memory already in use. This property is a sum of the *memory free* and *memory used* totals. Read-only.

memory used

> Returns the amount of memory (in bytes) that Excel is currently using. Under Mac OS X, this property always returns 0. Read-only.

move after return

> **True** if the active cell will be moved as soon as the RETURN key is pressed. Read/write.

> To specify the direction in which the active cell is to be moved, use the *move after return direction* property.

move after return direction

> Returns or sets the direction in which the active cell is moved when the user presses ENTER. Read/write.
>
> Can be one of the following:

- **toward the bottom**
- **toward the left**
- **toward the right**
- **toward the top**

> If the *move after return* property is **false**, the selection doesn't move at all, regardless of how the *move after return direction* property is set.

name

> Returns the name of the application. Read-only.

network templates path

> Returns the network path where templates are stored. If the network path doesn't exist, this property returns an empty string. Read-only.

office assistant

> Returns an **office assistant** object for Excel. Read-only.

operating system

> Returns the name and version number of the current operating system, for example, "Macintosh (PowerPC) 10.32". Read-only.

organization name

> Returns the registered organization name. Read-only.

path

> Returns the complete path of the application's container (folder), excluding the final separator (":"). Read-only.

path separator

> Returns the path separator character (":" on the Macintosh). Read-only.

pivot table selection

> **True** if PivotTable reports use structured selection. Read/write.

prompt for summary info

> **True** if Excel asks for summary information when files are first saved. Read/write.

record relative

> **True** if Visual Basic macros should be recorded using relative cell references (A1); **false** if recording uses absolute cell references ($A$1). Read-only.

reference style

> Returns or sets how Excel displays cell references and row and column headings in either A1 or R1C1 reference style. Read/write.

> Can be one of the following:

> - **A1**
> - **R1C1**

roll zoom

> **True** if the IntelliMouse zooms instead of scrolling. Read/write.

save interval

> Sets the time interval, in minutes, at which AutoSave will occur. Read/write.

screen updating

> **True** if screen updating is turned on. Read/write.

> Turn screen updating off to speed up your script. You won't be able to see what the script is doing, but it will run faster.

> Remember to set the *screen updating* property back to **true** when your script ends.

selection

> Returns the selected object in the active window. Read-only.

> The returned object type depends on the current selection (for example, if a cell is selected, this property returns a **range** object). The *selection* property returns **missing value** if there is no selection.

sheets in new workbook

> Returns or sets the number of sheets that Excel automatically inserts into new workbooks. Read/write.

show chart tip names

> **True** if charts show chart tip names. The default value is **true**. Read/write.

show chart tip values

> **True** if charts show chart tip values. The default value is **true**. Read/write.

show tool tips

> **True** if ToolTips are turned on. Read/write.

standard font

> Returns or sets the name of the standard font. Read/write.

> If you change the standard font by using this property, the change doesn't take effect until you restart Excel.

standard font size

> Returns or sets the standard font size, in points. Read/write.

> If you change the standard font size by using this property, the change doesn't take effect until you restart Excel.

startup dialog

> **True** if the Project Gallery is displayed when Excel is opened. Read/write.

startup path

> Returns the complete path of the startup folder's container (folder), excluding the final separator (":"). Read-only.

status bar

> Returns or sets the text in the status bar. Read/write.

> This property returns **false** if Excel has control of the status bar. To restore the default status bar text, set the property to **false**; this works even if the status bar is hidden.

templates path

> Returns the local path where templates are stored. Read-only.

transition menu key

> Returns or sets the alternate menu or help key, which is usually "/". Read/write.

transition menu key action

> Returns or sets the action taken when the alternate menu key is pressed. Can only be **excel menus**. Read/write.

two digit cutoff year

> Specifies the cutoff year before which the 21st century is assumed for two-digit years. Read/write.

usable height

> Returns the maximum height (in points) of the space that a window can occupy in the application window area. Read-only.

usable width

> Returns the maximum width (in points) of the space that a window can occupy in the application window area. Read-only.

user name

> Returns or sets the name of the current user. Read/write.

version

> Returns the Excel version number. Read-only.

Class: autofilter

Plural
autofilters

Elements
filter

Represents autofiltering for the specified worksheet.

Use the *autofilter object* property of the **sheet** object to return an **autofilter** object.

To create an **autofilter** object for a worksheet, you must turn autofiltering on for a range on the worksheet either manually or by using the **autofilter range** command. The following example turns on autofiltering for columns A through C of the active sheet. Before you run this example, make sure there is data in the columns or the example will fail.

```
autofilter range range "A:C"
```

Properties
range object

> Returns a **range** object that represents the range to which the specified AutoFilter applies. Read-only.

Class: border

Plural
borders

Represents the border of an object.

Use the **get border** command to return a single **border** object and set border properties. The following example sets the weight of the top border of cell A2.

```
set theBorder to get border range "A2" which border border top
set weight of theBorder to border weight medium
```

The following example places a red border of medium weight along the bottom edge of the range A1:G1.

```
set theBorder to get border (range "A1:G1" of active sheet) ¬
        which border edge bottom
set weight of theBorder to border weight medium
set color index of theBorder to 3
```

Properties

color

This property is not currently supported.

color index

Returns or sets the color of the border. Read/write. The color is specified as an index value into the current color palette, or as one of the following:

- **color index automatic**
- **color index none**

The following illustration shows the color-index values in the default color palette.

line style

Returns or sets the line style for the border. Read/write.

Can be any of the following:

- **continuous**
- **dash**
- **dash dot**
- **dash dot dot**
- **dot**
- **double**
- **slant dash dot**
- **line style none**

line weight

> Sets or returns the point size for a border. Read/write.

weight

> Returns or sets the weight of the border. Read/write.

> Can be any of the following:

- **border weight hairline**
- **border weight medium**
- **border weight thick**
- **border weight thin**

Class: button

Plural
buttons

Elements
character

Represents a button control. The *on action* property determines the script or Visual Basic macro that runs when the button is clicked.

Use **button** *index*, where *index* is the entry index number or name to return a single **button** object. The following example creates a new button.

```
make new button at end of worksheet 1 of workbook 1 with properties ¬
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **button** object on a worksheet.

```
get properties of button 1 of worksheet 1 of workbook 1
```

Properties
accelerator

> Returns or sets the accelerator character for this control. Read/write.

add indent

> Returns or sets whether text is automatically indented when the text alignment in a cell is set to equal distribution either horizontally or vertically. Read/write.

> This property is not used in U.S. English version of Excel.

auto scale font

> **True** if the text in the object changes font size when the object size changes. The default value is **true**. Read/write.

auto size

> **True** if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

bottom right cell

> Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

cancel button

> Returns or sets whether this button is the **Cancel** button. Read/write.

caption

> Returns or sets the caption for this object. Read/write.

control text

> Returns or sets the default text for the control. Read/write.

default button

> Returns or sets whether this button is the default button. Read/write.

dismiss button

> Returns or sets whether this button is the **Dismiss** button. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the specified object. Read-only.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

height

> Returns or sets the height (in points) of the object. Read/write.

help button

> Returns or sets whether this button is the **Help** button. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of the script or VB macro that's run when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

orientation

Returns or sets the object's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

phonetic accelerator

> This property is not currently supported.

placement

> Returns or sets the way the object is attached to the cells below it. Read/write.
>
> Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

> **True** if the object will be printed when the document is printed. Read/write.

reading order

> Returns or sets the reading order for the specified object. Can be any of the following constants: **left to right**, **right to left**, **context**. Read/write.
>
> This property is not supported on the Macintosh.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical alignment

> Returns or sets the vertical alignment of the object. Read/write.
>
> Can be any of the following:

- **vertical alignment top**
- **vertical alignment center**
- **vertical alignment bottom**
- **vertical alignment justify**
- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

wrap auto text

> **True** if Excel wraps the text in the object. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: calculated field

Plural

calculated fields

Represents a calculated field in a PivotTable report.

Use **calculated field** *index*, where index is the calculated field's name or index number, to return a single **calculated field** object. For example, a PivotTable report that contains Revenue and Expense fields could have a calculated field named "Profit" defined as the amount in the Revenue field minus the amount in the Expense field.

The following example deletes the calculated fields from the PivotTable report named "Pivot1" on worksheet 1.

```
repeat with fld in (get calculated fields of ¬
        pivot table "Pivot1" of worksheet 1)
    delete fld
end repeat
```

Properties

<*Inheritance*> **pivot field**

> Inherits the properties and elements of the **pivot field** class.

Class: calculated item

Plural

calculated items

Represents a calculated item in a PivotTable report.

Use **calculated item** *index*, where index is the calculated item's name or index number, to return a single **calculated item** object. For example, a PivotTable report that contains January, February, and March items could have a calculated item named "FirstQuarter" defined as the sum of the amounts in January, February, and March.

The following example creates a list of the calculated items in the first PivotTable report on worksheet 1, along with their formulas.

```
set pt to pivot table 1 of worksheet 1

set r to 0

repeat with ci in (get calculated items of pivot field "Sales of pt")

    set r to r + 1

    set value of cell r of column 1 of worksheet 2 to (get name of ci)

    set value of cell r of column 2 of worksheet 2 to (get formula of ci)

end repeat
```

Properties

<*Inheritance*> **pivot item**

> Inherits the properties and elements of the **pivot item** class.

Class: chart sheet

Plural

chart sheets

Represents a chart sheet in a workbook.

Use **chart sheet** *index*, where index is the chart-sheet index number or name, to return a single **chart sheet** object. The following example creates a chart sheet from a randomly generated set of data.

```
select range "A1:C5"

set value of selection to "=rand()"

make new chart sheet at active workbook
```

The chart index number represents the position of the chart sheet on the workbook tab bar. `chart sheet 1` is the first (leftmost) chart in the workbook; `chart sheet (get count of chart sheets)` is the last (rightmost). All chart sheets are included in the index count, even if they're hidden. The chart-sheet name is shown on the workbook tab for the chart.

The following example moves chart sheet 1 to the last (rightmost) position on the workbook tab bar.

```
move chart sheet 1 to after sheet (get count of sheets)
```

The following example changes the color of series 1 on the active chart.

```
make new chart at the beginning of active workbook

set color index of interior object of series 1 of active chart to 3
```

Properties

<*Inheritance*> **sheet**

> Inherits the properties and elements of the **sheet** class.

chart

> Returns the chart for this chart sheet. Read-only.

Class: checkbox

Plural
checkboxes

Elements
character

Represents a checkbox control.

Use **checkbox** *index,* where *index* is the entry index number or name to return a single **checkbox** object. The following example creates a new checkbox.

```
make new checkbox at end of worksheet 1 of workbook 1 ¬
        with properties {top:100, left position:100, ¬
        height:24, width:100}
```

The following example gets the properties of a **checkbox** object on a worksheet.

```
get properties of checkbox 1 of worksheet 1 of workbook 1
```

Properties
accelerator

> Returns or sets the accelerator character for this control. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

control text

> Returns or sets the default text for the control. Read/write.

display threeD shading

> Returns or sets the 3-D shading for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

height

> Returns or sets the height (in points) of the object. Read/write.

interior object

Returns an **interior** object that represents the interior of the specified object. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

linked cell

Returns or sets the worksheet range linked to the control's value. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of the script or VB macro that runs when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

phonetic accelerator

This property is not currently supported.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print objects

True if the object will be printed when the document is printed. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

> Returns or sets the value of the control. Read/write.
>
> Can be one of the following:

- **checkbox off**
- **checkbox on**
- **checkbox mixed**

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets the width (in points) of an object. Read/write.

z order position

> Returns the position of the specified object in the z-order, which corresponds to the object's index number. Read-only.
>
> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: child item

Plural
child items

Represents a child item in a PivotTable report.

Use **child item** *index*, where index is the child item's name or index number, to return a single **child item** object. This example adds the names of all the child items of the pivot item named "Vegetables" to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtItem in (get child items of pivot item "Vegetables" ¬
        of pivot field "Product" of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtItem)
end repeat
```

Properties
<*Inheritance*> **pivot item**

> Inherits the properties and elements of the **pivot item** class.

Class: column field

Plural

column fields

Represents a column field in a PivotTable report.

Use **column field** *index*, where index is the column field's name or index number, to return a single **column field** object.

This example adds the field names of the PivotTable columns to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtField in (get column fields of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtField)
end repeat
```

Properties

<*Inheritance*> **pivot field**

> Inherits the properties and elements of the **pivot field** class.

Class: custom view

Plural

custom views

Represents a custom workbook view.

Use **custom views** *index*, where *index* is the name or index number of the custom view, to return a **custom view** object. The following example shows the custom view named "Current Inventory."

```
show custom view custom view "Current Inventory" of active workbook
```

Properties

name

> Returns the name of the object. Read-only.

print settings

> **True** if print settings are included in the custom view. Read-only.

row col settings

> **True** if the custom view includes settings for hidden rows and columns (including filter information). Read-only.

Class: data field

Plural

data fields

Represents a data field in a PivotTable report.

Use **data field** *index*, where index is the data field's name or index number, to return a single **data field** object.

This example adds the names for the PivotTable data fields to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtField in (get data fields of pvtTable)
    set rw to rw +1
    set value of cell rw of column 1 of nwSheet to (get name of pvtField)
end repeat
```

Properties

<*Inheritance*> **pivot field**

   Inherits the properties and elements of the **pivot field** class.

Class: default web options

Contains global application-level attributes used by Excel when you save a document as a Web page or open a Web page. You can return or set attributes either at the application (global) level or at the workbook level. (Note that attribute values can be different from one workbook to another, depending on the attribute value at the time the workbook was saved.) Workbook-level attribute settings override application-level attribute settings. Workbook-level attributes are contained in the **web options** object.

Use the *default web options object* property of the **application** class to return the **default web options** object. The following example checks to see whether PNG (Portable Network Graphics) is allowed as an image format and sets the `strImageFileType` variable accordingly.

```
set objAppWebOptions to default web options object
if allow png of objAppWebOptions is true then
    set strImageFileType to "PNG"
else
    set strImageFileType to "JPG"
end if
```

Properties

allow png

> **True** if PNG (Portable Network Graphics) is allowed as an image format when you save or publish a complete or partial presentation as a Web page. **False** if PNG is not allowed as an output format. The default value is **False**. Read/write.

> If you save images in the PNG format as opposed to any other file format, you might improve the image quality or reduce the size of those image files, and therefore decrease the download time, assuming that the Web browsers you are targeting support the PNG format.

always save in default encoding

> **True** if the default encoding is used when you save a Web page or plain text document, independent of the file's original encoding when opened. **False** if the original encoding of the file is used. The default value is **false**. Read/write.

encoding

> Returns or sets the document encoding (code page or character set) to be used by the Web browser when you view the saved document. Read/write.

> The default is **encoding Mac Roman**. Can be any of the following:

encoding Thai	**encoding EBCDIC Greek**
encoding Japanese ShiftJIS	**encoding EBCDIC Hebrew**
encoding simplified Chinese	**encoding EBCDIC Korean extended**
encoding Korean	**encoding EBCDIC Thai**
encoding traditional Chinese	**encoding EBCDIC Icelandic**
encoding little endian	**encoding EBCDIC Turkish**
encoding big endian	**encoding EBCDIC Russian**
encoding central European	**encoding EBCDIC Serbian Bulgarian**
encoding Cyrillic	**encoding EBCDIC Japanese Katakana**
encoding Western	**extended and Japanese**
encoding Greek	**encoding EBCDIC US Canada and Japanese**
encoding Turkish	**encoding EBCDIC extended and Korean**
encoding Hebrew	**encoding EBCDIC simplified Chinese**
encoding Arabic	**extended and simplified Chinese**
encoding Baltic	**encoding EBCDIC US Canada**
encoding Vietnamese	**and traditional Chinese**
encoding auto detect	**encoding EBCDIC Japanese Latin extended**
encoding Japanese auto detect	**and Japanese**
encoding simplified Chinese auto detect	**encoding OEM United States**
encoding Korean auto detect	**encoding OEM Greek**
encoding traditional Chinese auto detect	**encoding OEM Baltic**
encoding Cyrillic auto detect	**encoding OEM multilingual LatinI**
encoding Greek auto detect	**encoding OEM multilingual LatinII**
encoding Arabic auto detect	**encoding OEM Cyrillic**
encoding ISO88591 Latin1	**encoding OEM Turkish**
encoding ISO88592 central Europe	**encoding OEM Portuguese**
encoding ISO88593 Latin3	**encoding OEM Icelandic**
encoding ISO88594 Baltic	**encoding OEM Hebrew**
encoding ISO88595 Cyrillic	**encoding OEM Canadian French**
encoding ISO88596 Arabic	**encoding OEM Arabic**
encoding ISO88597 Greek	**encoding OEM Nordic**
encoding ISO88598 Hebrew	**encoding OEM CyrillicII**

encoding ISO88599 Turkish

encoding ISO885915 Latin9

encoding ISO2022 Japanese no half width
  Katakana

encoding ISO2022 Japanese JISX02021984

encoding ISO2022 Japanese JISX02011989

encoding ISO2022KR

encoding ISO2022CN traditional Chinese

encoding ISO2022CN simplified Chinese

encoding Mac Roman

encoding Mac Japanese

encoding Mac traditional Chinese Big5

encoding Mac Korean

encoding Mac Greek1

encoding Mac Cyrillic

encoding Mac simplified Chinese GB2312

encoding Mac Romania

encoding Mac Ukraine

encoding Mac Latin2

encoding Mac Icelandic

encoding Mac Turkish

encoding Mac Croatia

encoding EBCDIC US Canada

encoding EBCDIC International

encoding EBCDIC multilingual
  ROECE Latin2

encoding EBCDIC Greek modern

encoding EBCDIC Turkish Latin5

encoding EBCDIC Germany

encoding EBCDIC Denmark Norway

encoding EBCDIC Finland Sweden

encoding EBCDIC Italy

encoding EBCDIC Latin America Spain

encoding EBCDIC United Kingdom

encoding EBCDIC Japanese
  Katakana extended

encoding EBCDIC France

encoding EBCDIC Arabic

encoding OEM modern Greek

encoding EUC Japanese

encoding EUC Chinese simplified Chinese

encoding EUC Korean

encoding EUC Taiwanese
  traditional Chinese

encoding Devanagari

encoding Bengali

encoding Tamil

encoding Telugu

encoding Assamese

encoding Oriya

encoding Kannada

encoding Malayalam

encoding Gujarati

encoding Punjabi

encoding Arabic ASMO

encoding Arabic transparent ASMO

encoding Korean Johab

encoding Taiwan CNS

encoding Taiwan TCA

encoding Taiwan Eten

encoding Taiwan IBM5550

encoding Taiwan teletext

encoding Taiwan Wang

encoding IA5 German

encoding IA5 Swedish

encoding IA5 Norwegian

encoding US ASCII

encoding T61

encoding ISO6937 nonspacing accent

encoding Ext alpha lowercase

encoding KOI8U

encoding Europa3

encoding HZGB simplified Chinese

encoding UTF7

encoding UTF8

load pictures

This property is not currently supported.

location of components

This property is not currently supported.

pixels per inch

Returns or sets the density (pixels per inch) of graphics images and table cells on a Web page. The range of settings is usually from 19 to 480. Common settings for popular screen sizes are 72, 96, and 120. The default setting is 96. Read/write.

This property determines the size of the images and cells on the specified Web page relative to the size of text whenever you view the saved document in a Web browser. The physical dimensions of the resulting image or cell are the result of the original dimensions (in inches) multiplied by the number of pixels per inch.

To set the optimum screen size for the targeted Web browsers, use the *screen size* property.

save hidden data

True if data outside of the specified range is saved when you save the document as a Web page. This data may be necessary for maintaining formulas. **False** if data outside of the specified range is not saved with the Web page. The default value is **true**. Read/write.

If you choose not to save data outside of the specified range, references to that data in the formula are converted to static values. If the data is in another sheet or workbook, the result of the formula is saved as a static value.

screen size

Returns or sets the ideal minimum screen size (width by height, in pixels) that you should use when viewing the saved document in a Web browser. Read/write.

Can be one of the following:

resolution544x376	**resolution1152x900**
resolution640x480	**resolution1280x1024**
resolution720x512	**resolution1600x1200**
resolution800x600	**resolution1800x1440**
resolution1024x768	**resolution1920x1200**
resolution1152x882	

The default value is **resolution800x600**.

update links on save

True if hyperlinks and paths to all supporting files are automatically updated before you save the document as a Web page, ensuring that the links are up-to-date at the time the document is saved. **False** if the links are not updated. The default value is **true**. Read/write.

You should set this property to **false** if the location where the document is saved is different from the final location on the Web server and the supporting files are not available at the first location.

use long file names

True if long file names are used when you save the document as a Web page. **False** if long file names are not used and the MS-DOS file name format (8.3) is used. The default value is **true**. Read/write.

If you don't use long file names and your document has supporting files, Excel automatically organizes those files in a separate folder.

Class: dialog

Plural
dialogs

Represents a built-in dialog box. The **dialogs** list contains all of the built-in dialog boxes in Excel. You cannot create a new built-in dialog box or add one to the **dialogs** list.

To return a single **dialog** object, use the **get dialog** command along with a **dialog type** constant that identifies the dialog box. The following example displays and carries out the actions taken in the built-in **Open** dialog box (**File** menu).

```
show (get dialog dialog open)
```

The **dialog type** constants are formed from the prefix "dialog" followed by the name of the dialog box. For example, the constant for the **Page Setup** dialog box is **dialog page setup**, and the constant for the **Project Gallery** dialog box is **dialog new**.

Class: document

Plural
documents

Represents a Microsoft Excel workbook.

Use **document** *index*, where *index* is the workbook name or index number, to return a single **document** object. The following example creates a new workbook.

```
make new document
```

Note   In most cases, it's best to use the workbook class

Properties
<*Inheritance*> **workbook**

   Inherits the properties and elements of the **workbook** class.

Class: dropdown

Plural
dropdowns

Elements
character

Represents a dropdown control.

Use **dropdown** *index*, where *index* is the entry index number or name, to return a single **dropdown** object. The following example creates a new dropdown.

```
make new dropdown at end of worksheet 1 of workbook 1 with properties ¬
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **dropdown** object on a worksheet.

```
get properties of dropdown 1 of worksheet 1 of workbook 1
```

Properties

bottom right cell

Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

Returns or sets the caption for this object. Read/write.

control text

Returns or sets the default text for the control. Read/write.

display threeD shading

Returns or sets the 3-D shading for this object. Read/write.

drop down lines

Returns or sets the number of dropdown items. Read/write.

enabled

True if the object is enabled. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

height

Returns or sets the height (in points) of the object. Read/write.

left position

Returns or sets the position (in points) of the specified object. Read/write.

linked cell

Returns or sets the worksheet range linked to the control's value. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

list fill range

Returns or sets the worksheet range used to fill the specified dropdown. Setting this property destroys any existing list in the dropdown. Read/write.

Excel reads the contents of every cell in the range and inserts the cell values into the dropdown. The list tracks changes in the cells within that range.

If the list in the dropdown was created with the **add item to list** command, this property returns an empty string ("").

list index

Returns or sets the index number of the currently selected item in a dropdown. Read/write.

locked

> **True** if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

name

> Returns or sets the name of the object. Read/write.

number of items in list

> Returns the total number of items in the list. Read-only.

on action

> Returns or sets either the name of the script VB macro that runs when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

placement

> Returns or sets the way the object is attached to the cells below it. Read/write.

> Can be one of the following:

> - **placement free floating**
>
> - **placement move**
>
> - **placement move and size**

print object

> **True** if the object will be printed when the document is printed. Read/write.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

> Returns or sets the value of the control. Read/write.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: Excel comment

Plural

Excel comments

Represents a cell comment.

Use the *Excel comment* property to return an **Excel comment** object. The following example changes the text in the comment in cell E5.

```
Excel comment text (Excel comment of range "E5") text "reviewed by Jessica"
```

Use **Excel comment** *index*, where *index* is the comment number, to return a single **Excel comment** object. The following example hides comment two on worksheet one.

```
set visible of Excel comment 2 of sheet 1 to false
```

To add a comment to a range, use the **add comment** command. The following example adds a comment to cell E5 on worksheet one.

```
add comment range "E5" of sheet 1 comment text "reviewed by Jessica"
```

Properties

author

>   Returns or sets the author of the comment. Read-only.

shape object

>   Returns a **shape** object that represents the shape attached to the specified comment. Read-only.

visible

>   **True** if the object is visible. Read/write.

Class: filter

Plural

filters

Represents a filter for a single column. The **filter** list contains all the filters in an autofiltered range.

Use **filter** *index*, where *index* is the filter title or index number, to return a single **filter** object. The following example sets a variable to the value of the *filter on* property of the filter for the first column in the filtered range on the Crew worksheet.

```
set w to worksheet "Crew"
if autofilter mode of w is true then
    set filterIsOn to (filter on of filter 1 of autofilter object of w)
end if
```

Note that all the properties of the **filter** object are read-only. To set these properties, apply autofiltering manually or using the **autofilter range** command, as shown in the following example.

```
set w to worksheet "Crew"
autofilter range (cells of w) field 2 criteria1 "Crucial" ¬
        operator autofilter or criteria2 "Important"
```

Properties

criteria1

> Returns the first filtered value for the specified column in a filtered range. Read-only.

criteria2

> Returns the second filtered value for the specified column in a filtered range. Read-only.

> If you try to access the *criteria2* property for a filter that does not use two criteria, an error will occur. Check that the *operator* property of a **filter** object doesn't equal zero (0) before trying to access the *criteria2* property.

filter on

> **True** if the specified filter is on. Read-only

operator

> Returns the operator that associates the two criteria applied by the specified filter. Read-only.

> Can be one of the following:

>> - **autofilter and**
>> - **bottom 10 items**
>> - **bottom 10 percent**
>> - **autofilter or**
>> - **top 10 items**
>> - **top 10 percent**

Class: format condition

Plural

format conditions

Represents a conditional format.

Use **format condition** *index*, where *index* is the index number of the conditional format, to return a **format condition** object. The following example creates a new conditional format for cells E1:E10:

```
make new format condition at range
"E1:E10" with properties ¬
    {format condition type:cell value, ¬
    condition operator:operator between, ¬
    formula1:"1", formula2:"10"}
```

To control the appearance of formatted cells, use the *font object* and *interior object* properties of the **format condition** object. Some properties of these objects aren't supported by the conditional format object model. The properties that can be used with conditional formatting are listed in the following table.

Object	Properties
font	**bold** **color** **colorIndex** **fontStyle** **italic** **strikethrough** **underline** The accounting underline styles cannot be used.
interior	**color** **colorIndex** **pattern** **patternColorIndex**

Properties

condition operator

Returns the operator for the conditional format. Read-only.

Can be one of the following:

- **operator between**

- **operator not between**

- **operator equal**

- **operator not equal**

- **operator greater**

- **operator less**

- **operator greater equal**

- **operator less equal**

font object

Returns a **font** object that represents the font of the specified object. Read-only.

format condition type

Returns the conditional format type. Read-only.

Can be one of the following:

- **cell value**

- **expression**

formula 1

> Returns the value or expression associated with the conditional format. Can be a constant value, a string value, a cell reference, or a formula. Read-only.

formula 2

> Returns the value or expression associated with the second part of a conditional format. Used only when the *condition operator* property is **operator between** or **operator not between**. Can be a constant value, a string value, a cell reference, or a formula. Read-only.

interior object

> Returns an **interior** object that represents the interior of the specified object. Read-only.

Class: graphic

Plural

graphics

Contains properties that apply to header and footer picture objects.

The following properties of the **page setup** object are **graphic** objects: *center footer picture*, *center header picture*, *left footer picture*, *left header picture*, *right footer picture*, or *right header picture*.

The following example adds a picture named "Sample.jpg" from the Macintosh HD volume to the left section of the footer, and sets the color type of the graphic to a watermark effect. This example assumes that a file named "Sample.jpg" exists on the Macintosh HD volume.

```
set file name of left footer picture of page setup object ¬
        of active sheet to "Macintosh HD: Sample.jpg"
set color type of page setup object of active sheet ¬
        to picture color watermark
set left header of page setup object of active sheet to "&G"
```

Note   The characters "&G" must be part of the *left footer* string for the image to show up in the left footer.

Properties

brightness

> Returns or sets the brightness of the specified picture or OLE object. The value for this property must be a number from 0.0 (dimmest) to 1.0 (brightest). Read/write.

color type

Returns or sets the type of color transformation applied to the specified picture or OLE object. Read/write.

Can be one of the following:

- **picture color type unset**
- **picture color automatic**
- **picture color gray scale**
- **picture color black and white**
- **picture color watermark**

contrast

Returns or sets the contrast for the specified picture or OLE object. The value for this property must be a number from 0.0 (the least contrast) to 1.0 (the greatest contrast). Read/write.

crop bottom

Returns or sets the number of points that are cropped off the bottom of the specified picture or OLE object. Read/write.

Cropping is calculated relative to the original size of the picture. For example, if you insert a picture that is originally 100 points high, rescale it so that it's 200 points high, and then set the *crop bottom* property to 50, 100 points (not 50) will be cropped off the bottom of your picture. However, while cropping measurements are calculated relative to the object's original scale, those measurements reflect absolute distances from the edge of the object. You cannot set any of the cropping properties to a negative number.

crop left

Returns or sets the number of points that are cropped off the left side of the specified picture or OLE object. Read/write.

Cropping is calculated relative to the original size of the picture. For example, if you insert a picture that is originally 100 points wide, rescale it so that it's 200 points wide, and then set the *crop left* property to 50, 100 points (not 50) will be cropped off the left side of your picture. However, while cropping measurements are calculated relative to the object's original scale, those measurements reflect absolute distances from the edge of the object. You cannot set any of the cropping properties to a negative number.

crop right

Returns or sets the number of points that are cropped off the right side of the specified picture or OLE object. Read/write.

Cropping is calculated relative to the original size of the picture. For example, if you insert a picture that is originally 100 points wide, rescale it so that it's 200 points wide, and then set the *crop right* property to 50, 100 points (not 50) will be cropped off the right side of your picture. However, while cropping measurements are calculated relative to the object's original scale, those measurements reflect absolute distances from the edge of the object. You cannot set any of the cropping properties to a negative number.

crop top

> Returns or sets the number of points that are cropped off the top of the specified picture or OLE object. Read/write.

> Cropping is calculated relative to the original size of the picture. For example, if you insert a picture that is originally 100 points high, rescale it so that it's 200 points high, and then set the *crop top* property to 50, 100 points (not 50) will be cropped off the top of your picture. However, while cropping measurements are calculated relative to the object's original scale, those measurements reflect absolute distances from the edge of the object. You cannot set any of the cropping properties to a negative number.

file name

> Returns or sets the URL (on the intranet or the Web) or path (local or network) to the location where the specified source object was saved. Read/write.

> The *file name* property generates an error if a folder in the specified path doesn't exist.

height

> Returns or sets the height (in points) of an object. Read/write.

lock aspect ratio

> **True** if the specified shape retains its original proportions when you resize it. **False** if you can change the height and width of the shape independently of one another when you resize it. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

Class: groupbox

Plural

groupboxes

Elements

character

Represents a groupbox control.

Use **groupbox** *index*, where *index* is the entry index number or name to return a single **groupbox** object. The following example creates a new groupbox.

```
make new groupbox at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **groupbox** object on a worksheet.

```
get properties of groupbox 1 of worksheet 1 of workbook 1
```

Properties

accelerator

Returns or sets the accelerator character for this control. Read/write.

bottom right cell

Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

Returns or sets the caption for this object. Read/write.

control text

Returns or sets the default text for the control. Read/write.

display threeD shading

Returns or sets the 3-D shading for this object. Read/write.

enabled

True if the object is enabled. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

height

Returns or sets the height (in points) of the object. Read/write.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a script or VB macro that runs when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

phonetic accelerator

This property is not currently supported.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

visible

True if the object is visible. Read/write.

width

Returns or sets an object's width, in points. Read/write.

z order position

Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: hidden field

Plural
hidden fields

Represents a hidden field in a PivotTable report.

Use **hidden field** *index*, where index is the hidden field's name or index number, to return a single **hidden field** object.

This example adds the hidden field names to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtField in (get hidden fields of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtField)
end repeat
```

Properties

<*Inheritance*> **pivot field**

Inherits the properties and elements of the **pivot field** class.

Class: hidden item

Plural

hidden items

Represents a hidden item in a PivotTable report.

Use **hidden item** *index*, where index is the hidden item's name or index number, to return a single **hidden item** object.

Use **hidden items** *index*, where *index* is the pivot item name or number (can be an array to specify more than one item).

This example adds the names of all the hidden items in the field named "product" to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtItem in (get hidden items of pivot field "product" of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtItem)
end repeat
```

Properties

<*Inheritance*> **pivot item**

Inherits the properties and elements of the **pivot item** class.

Class: horizontal page break

Plural

horizontal page breaks

Represents a horizontal page break.

Use **horizontal page break** *index*, where *index* is the index number of the page break, to return a **horizontal page break** object. The following example creates new horizontal page breaks on the active sheet.

```
make new horizontal page break at active sheet ¬
        with properties {location:range ("E5")}
make new horizontal page break at active sheet ¬
        with properties {location:range ("C10"),
        extent:page break full, ¬
        horizontal page break type:page break manual}
```

Properties

extent

Returns the type of the specified page break: full-screen or only within a print area. Read-only.

Can be one of the following:

- **page break full**

- **page break partial**

horizontal page break type

Returns or sets the type of horizontal page break. Read/write.

Can be one of the following:

- **page break automatic**

- **page break manual**

- **page break none**

location

Returns or sets the cell (a **range** object) that defines the page-break location. Horizontal page breaks are aligned with the top edge of the location cell; vertical page breaks are aligned with the left edge of the location cell. Read/write.

Class: hyperlink

Plural

hyperlinks

Represents a hyperlink.

The following example activates the hyperlink for range A1.

```
set var to hyperlink 1 of range "A1" of active sheet
follow var
```

A range or worksheet can have more than one hyperlink. Use **hyperlink** *index*, where *index* is the hyperlink number, to return a single **hyperlink** object. The following example activates hyperlink two in the range A1:B2.

```
set var to hyperlink 2 of range "A1:B2" of active sheet
follow var
```

Use the *hyperlink* property to return the **hyperlink** object for a shape (a shape can have only one hyperlink).

Properties

address

Returns or sets the address of the target document. Read/write.

email subject

Returns or sets the text string of the specified hyperlink's e-mail subject line. The subject line is appended to the hyperlink's address. Read/write.

This property is usually used with e-mail hyperlinks.

The value of this property takes precedence over any e-mail subject line you have specified by using the *address* property of the same **hyperlink** object.

hyperlink type

Returns the hyperlink type (the type of data or object that the hyperlink is associated with). Read-only.

Can be any of the following:

- **hyperlink type text range**
- **hyperlink type shape**
- **hyperlink type inline shape**

name

Returns the name of the object. Read-only.

range object

Returns a **range** object that represents the range the specified hyperlink is attached to. Read-only.

screen tip

Returns or sets the ScreenTip text for the specified hyperlink. Read/write.

After the document has been saved to a Web page, the ScreenTip text may appear (for example) when the mouse pointer is positioned over the hyperlink while the document is being viewed in a Web browser. Some Web browsers may not support ScreenTips.

shape object

Returns a **shape** object that represents the shape attached to the specified hyperlink. Read-only.

sub address

Returns or sets the location within the document associated with the hyperlink. Read/write.

text to display

Returns or sets the text to be displayed for the specified hyperlink. The default value is the address of the hyperlink. Read/write.

Class: international macro sheet

Plural

international macro sheets

Represents an international macro sheet.

Use **international macro sheet** *index*, where *index* is the macro sheet index number or name, to return a single **international macro sheet** object. The following example creates a new international macro sheet.

```
make new international macro sheet at the beginning of active workbook
```

Properties

<Inheritance> **sheet**

Inherits the properties and elements of the **sheet** class.

enable selection

Returns or sets what can be selected on the sheet. This property takes effect only when the worksheet is protected. Read/write.

Can be one of the following:

Value	Description
no restrictions	Allows any cell to be selected.
unlocked cells	Allows only those cells whose *locked* property is **false** to be selected.
no selection	Prevents any selection on the sheet.

Class: label

Plural

labels

Represents a label control.

Use **label** *index*, where *index* is the label control's name or index number, to return a single **label** object. The following example creates a new label control:

```
make new label at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:24, width:100}
```

Properties

accelerator

Returns or sets the accelerator character for this control. Read/write.

bottom right cell

Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

Returns or sets the caption for this object. Read/write.

control text

Returns or sets the default text for the control. Read/write.

enabled

True if the object is enabled. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

height

Returns or sets the height (in points) of the object. Read/write.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a script or VB macro that runs when the specified object is clicked. AppleScript scripts not saved with the document. Read/write.

phonetic accelerator

This property is not currently supported.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: list column

Plural

list columns

Represents a column in a list object.

Use **list column** *index*, where *index* is the list column index number or name, to return a single **list column** object. The following example requires that entries added to column 3 of list object 1 be unique.

```
set unique of list column 3 of list object 1 of sheet 2 to true
```

Properties

data type

> Returns or sets the data type of the specified column in a list object. Read/write.

> Can be one of the following:

no data type	**time data**
whole number data	**text data**
decimal data	**currency data**
list data	**calculated data**
date data	**counter data**

default value

> Sets a default value for a column in a list object. Read/write.

> The default value is an empty string.

name

> Returns or sets the name of the object. Read/write.

range object

> Returns a **range** object that represents the range to which the specified list column, object, or row applies. Read-only.

show phonetic fields

> **True** if phonetic fields are visible in a **list object** column. Read/write.

> This property is available only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

unique

> **True** if a list column will accept only new, unique values when records are added or edited. Read/write.

> The default value is **false**.

Class: list object

Plural
list objects

Elements
list column

list row

Represents a list object on a worksheet.

Use **list object** *index*, where *index* is the list index number or name, to return a single **list object** object. The following example converts the second list object on Sheet1 to a normal Excel range.

```
convert to range list object 2 of sheet "Sheet1"
```

Properties
cell table

> Returns the cell table from a specified list object. Read-only.

name

> Returns or sets the name of the object. Read/write.

print field header titles

> **True** if list column labels are reprinted at the top of each page when a list sheet is printed. Read/write.

query table

> Returns a **query table** object that represents the query table that intersects the specified range. Read-only.

range autoformat

Specifies a predefined format for automatically formatting a range of cells in a list object. Read/write.

Can be one of the following:

range autoformat threeD effects 1	**range autoformat color 3**
range autoformat threeD effects 2	**range autoformat list 1**
range autoformat accounting 1	**range autoformat list 2**
range autoformat accounting 2	**range autoformat list 3**
range autoformat accounting 3	**range autoformat local format 1**
range autoformat accounting 4	**range autoformat local format 2**
range autoformat classic 1	**range autoformat local format 3**
range autoformat classic 2	**range autoformat local format 4**
range autoformat classic 3	**range autoformat none**
range autoformat color 1	**range autoformat simple**
range autoformat color 2	

range object

Returns a **range** object that represents the range to which the specified list column, object, or row applies. Read/write.

show autofilter

True if the AutoFilter is implemented in a list object. Read/write.

total

Specifies that a totals row be implemented in a list object. Read/write.

The default value is **false**.

total row

Returns the totals row, if any, from a specified list object. Read-only.

used range

Returns a **range** object that represents the used range on the specified worksheet. Read-only.

visuals

Specifies how, or whether, visuals are displayed in the list object. Read/write.

Can be one of the following:

Constant	Description
list object visual automatic	Turns the visuals on or off depending on whether the list is currently selected.
list object visual off	Visuals are not displayed in the list object.
list object visual on	Visuals remain displayed in the list object.

Class: list row

Plural

list rows

Represents a row in a list object.

Use **list row** *index*, where *index* is the list row index number or name, to return a single **list row** object. The following example deletes the 25th row from a list object.

```
delete range range object of list row 25 of list object 1 of sheet 1
```

Properties

range object

> Returns a **range** object that represents the range to which the specified list column, object, or row applies. Read-only.

Class: listbox

Plural

listboxes

Represents a listbox control.

Use **listbox** *index*, where *index* is the entry index number or name, to return a single **listbox** object. The following example creates a new listbox.

```
make new listbox at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **listbox** object on a worksheet.

```
get properties of listbox 1 of worksheet 1 of workbook 1
```

Properties

bottom right cell

> Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

display threeD shading

> Returns or sets the 3-D shading for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

height

> Returns or sets the height (in points) of the object. Read/write.

left position

> Returns or sets the position (in points) of the specified object. Read/write.

linked cell

> Returns or sets the worksheet range linked to the control's value. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

> You cannot use this property if the *multi select* property is **select simple** or **select extended**.

list fill range

> Returns or sets the worksheet range used to fill the specified list box. Setting this property destroys any existing list in the list box. Read/write.

> Excel reads the contents of every cell in the range and inserts the cell values into the list box. The list tracks changes in the range's cells.

> If the list in the list box was created with the **add item to list** command, this property returns an empty string ("").

list index

> Returns or sets the index number of the currently selected item in a list box or combo box. Read/write.

> You cannot use this property if the *multi select* property is **select simple** or **select extended**.

locked

> **True** if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

multi select

> Returns or sets the selection mode of the specified list box. Read/write.

> Can be one of the following:

Value	Description
select none	Single select — allows only one item at a time to be selected. Clicking the mouse or pressing the SPACEBAR cancels the selection and selects the clicked item.
select simple	Simple multiselect — toggles the selection on an item in the list when you click it with the mouse or when you press the SPACEBAR while the focus is on the item. This mode is appropriate for pick lists, in multiple items are often selected.
select extended	Extended multiselect — usually acts like a single-selection list box, so when you click an item, you cancel all other selections. When you hold down SHIFT while clicking the mouse or pressing an arrow key, you select items sequentially from the current item. When you hold down CTRL while clicking the mouse, you add single items to the list. This mode is appropriate when multiple items are allowed but not often used.

> To return and set the selected item in a single-select list box, use the *value* or *list index* property.

name

> Returns or sets the name of the object. Read/write.

number of items in list

> Returns the total number of items in the list. Read-only.

on action

> Returns or sets either the name of a script or VB macro that runs when the specified object is clicked. AppleScript scripts not saved with the document. Read/write.

placement

> Returns or sets the way the object is attached to the cells below it. Read/write.

> Can be one of the following:

> - **placement free floating**
> - **placement move**
> - **placement move and size**

print object

> **True** if the object will be printed when the document is printed. Read/write.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

> Returns or sets the value of the control. Read/write.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: macro sheet

Plural

macro sheets

Represents a macro sheet.

Use **macro sheet** *index*, where *index* is the macro sheet index number or name, to return a single **macro sheet** object. The following example creates a new macro sheet.

```
make new macro sheet
at the beginning of active workbook
```

Properties

<Inheritance> **sheet**

Inherits the properties and elements of the **sheet** class.

enable selection

Returns or sets what can be selected on the sheet. This property takes effect only when the worksheet is protected. Read/write.

Can be one of the following:

Value	Description
no restrictions	Allows any cell to be selected.
unlocked cells	Allows only those cells whose *locked* property is **false** to be selected.
no selection	Prevents any selection on the sheet.

Class: named item

Plural

named items

Represents a defined name for a range of cells. Named items can be either built-in names, such as Database, Print_Area, and Auto_Open, or custom names.

Use **named item** *index*, where *index* is the name index number or defined name, to return a single **named item** object.

The index number indicates the position of the name within the application's internal list of named items. Named items are placed in alphabetical order, from a to z, and are not case-sensitive (this is the same order that is displayed in the **Define Name** and **Apply Names** dialog boxes when you click **Name** on the **Insert** menu). The following example displays the cell reference for the first name in the application's internal list of named items.

```
display dialog references of named item 1
```

The following example deletes the name "mySortRange" from the active workbook.

```
delete named item "mySortRange" of active workbook
```

Use the *name* property to return or set the text of the name itself. The following example changes the name of the first **named item** object in the active workbook.

```
set name of named item 1 to "stock_values"
```

Properties

category

Returns or sets the category for the specified name. The name must refer to a custom function or command. Read/write.

category local

Returns or sets the category for the specified name, in the language of the user, if the name refers to a custom function or command. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

macro type

Returns or sets what the name refers to. Read-write.

Can be one of the following:

Constant	Meaning
macro type command	The name refers to a user-defined VB macro.
macro type function	The name refers to a user-defined function.
macro type not XLM	The name doesn't refer to a function or VB macro.

name

Returns or sets the name of the object. Read/write.

name local

Returns or sets the name of the object, in the language of the user. Read/write.

If the style is a built-in style, this property returns the name of the style in the language of the current locale.

reference local

Returns or sets the formula that the name refers to. The formula is in the language of the user, and it's in A1-style notation, beginning with an equal sign. Read/write.

reference local r1c1

Returns or sets the formula that the name refers to. This formula is in the language of the user, and it's in R1C1-style notation, beginning with an equal sign. Read/write.

reference r1c1

> Returns or sets the formula that the name refers to. The formula is in R1C1-style notation, beginning with an equal sign. Read/write.

reference range

> Returns the **range** object referred to by a **name** object. Read-only.

> If the **name** object doesn't refer to a range (for example, if it refers to a constant or a formula), this property fails.

> To change the range that a name refers to, use the *reference local* property.

references

> Returns or sets the formula that the name is defined to refer to, in A1-style notation, beginning with an equal sign. Read/write

shortcut key

> Returns or sets the shortcut key for a name defined as a custom Excel 4.0 macro command. Read/write.

value

> Returns or sets a string containing the formula that the name is defined to refer to. The string is in A1-style notation and it begins with an equal sign. Read/write.

visible

> **True** if the object is visible. Read/write.

> If you set the *visible* property for a name to **false**, the name will not appear in the **Define Name** dialog box.

Class: ODBC error

Plural
ODBC errors

Represents an ODBC error generated by the most recent ODBC query.

Use **ODBC error** *index*, where *index* is the index number of the error, to return a single **ODBC error** object. The following example refreshes query table one and displays the first ODBC error that occurs.

```
refresh query table query table 1 of sheet 1
if (count of ODBC errors) > 0 then
        set er to ODBC error 1
        dialog "The following error occurred:" ¬
        & error string of er & " : " & sql state of er
else
        dialog "Query complete: all records returned."
end if
```

Properties

error string

> Returns the ODBC error string. Read-only.

sql state

> Returns the SQL state error. Read-only.

> For an explanation of the specific error, see your SQL documentation.

Class: option button

Plural
option buttons

Elements
character

Represents an option button control.

Use **option button** *index*, where *index* is the entry index number or name to return a single **option button** object. The following example creates a new option button.

```
make new option button at end of worksheet 1 of workbook 1 with properties
     {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of an **option button** object on a worksheet.

```
get properties of option button 1 of worksheet 1 of workbook 1
```

Properties

accelerator

> Returns or sets the accelerator character for this control. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

control text

> Returns or sets the default text for the control. Read/write.

display threeD shading

> Returns or sets the 3-D shading for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

group box

Returns a **group box** object that represents the grouping of the object. Read-only.

height

Returns or sets the height (in points) of the object. Read/write.

interior object

Returns an **interior** object that represents the interior of the specified object. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

linked cell

Returns or sets the worksheet range linked to the control's value. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a script or VB macro that runs when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

phonetic accelerator

This property is not currently supported.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

> Returns or sets the value of the control. Read/write.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: outline

Plural

outlines

Represents an outline on a worksheet.

Use the *outline object* property to return an **outline** object. The following example sets the outline on Sheet4 so that only the first outline level is shown.

```
show levels (outline object of sheet "Sheet4") row levels 1
```

Properties

automatic styles

> **True** if the outline uses automatic styles. Read/write.

summary column

> Returns or sets the location of the summary columns in the outline, as shown in the following table. Read/write.

Value	Meaning
summary on left	The summary column will be positioned to the left of the detail columns in the outline.
summary on right	The summary column will be positioned to the right of the detail columns in the outline.

summary row

Returns or sets the location of the summary rows in the outline, as shown in the following table. Read/write.

Value	Meaning
summary above	The summary row will be positioned above the detail rows in the outline. Use for Microsoft Word-style outlines, where category headers are above the detailed information.
summary below	The summary row will be positioned below the detail rows in the outline. Use for accounting-style outlines, where summations are below the detailed information.

Class: page field

Plural

page fields

Represents a page field in a PivotTable report.

Use **page field** *index*, where index is the page field's name or index number, to return a single **page field** object.

This example adds the page field names to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtField in (get page fields of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtField)
end repeat
```

Properties

<Inheritance> **pivot field**

Inherits the properties and elements of the **pivot field** class.

Class: page setup

Plural

page setups

Represents the page setup description. The **page setup** object contains all page setup attributes (left margin, bottom margin, paper size, and so on) as properties.

Use the *page setup object* property to return a **page setup** object. The following example sets the orientation to landscape mode and then prints the worksheet.

```
set page orientation of page setup object ¬
        of sheet 1 of active workbook to landscape
print out worksheet 1
```

The following special formatting codes can be included as a part of the header and footer properties (*left header*, *center header*, *right header*, *left footer*, *center footer*, *right footer*).

Format code	Description
&L	Left aligns the characters that follow.
&C	Centers the characters that follow.
&R	Right aligns the characters that follow.
&E	Turns double-underline printing on or off.
&X	Turns superscript printing on or off.
&Y	Turns subscript printing on or off.
&B	Turns bold printing on or off.
&I	Turns italic printing on or off.
&U	Turns underline printing on or off.
&S	Turns strikethrough printing on or off.
&O	Turns outline printing on or off (Macintosh only).
&H	Turns shadow printing on or off (Macintosh only).
&D	Prints the current date.
&T	Prints the current time.
&F	Prints the name of the document.
&A	Prints the name of the workbook tab.
&P	Prints the page number.
&Z	Prints the path of the document.
&G	Includes a picture.

Format code	Description
&P+number	Prints the page number plus the specified number.
&P-number	Prints the page number minus the specified number.
&&	Prints a single ampersand.
& "fontname"	Prints the characters that follow in the specified font. Be sure to include the double quotation marks.
&nn	Prints the characters that follow in the specified font size. Use a two-digit number to specify a size in points.
&N	Prints the total number of pages in the document.

Properties

black and white

> **True** if elements of the document will be printed in black and white. Read/write.

> This property applies only to worksheets.

bottom margin

> Returns or sets the size (in points) of the bottom margin. Read/write.

> Margins are set or returned in points. Use either the **inches to points** command or the **centimeters to points** command to do the conversion. For example:

```
set bottom margin of page setup object of sheet 1 ¬
        of active workbook to (inches to points inches 0.5)
```

center footer

> Returns or sets the center part of the footer. Read/write.

> Special format codes can be used in the footer text.

center footer picture

> Returns a **graphic** object that represents the picture for the center section of the footer. Used to set attributes about the picture.

> The *center footer picture* property is read-only, but not all of its properties are read-only.

center header

> Returns or sets the center part of the header. Read/write.

> Special format codes can be used in the footer text.

center header picture

> Returns a **graphic** object that represents the picture for the center section of the header. Used to set attributes about the picture.

> The *center header picture* property is read-only, but not all of its properties are read-only.

center horizontally

> **True** if the sheet is centered horizontally on the page when it's printed. Read/write.

center vertically

> **True** if the sheet is centered vertically on the page when it's printed. Read/write.

chart size

> Returns or sets the way a chart is scaled to fit on a page. Read/write.

> Can be one of the following:

Value	Description
full screen	Prints the chart the same size as it appears on the screen.
fit to page	Prints the chart as large as possible, while retaining the chart's height-to-width ratio as shown on the screen.
full page	Prints the chart to fit the page, adjusting the height-to-width ratio as necessary.

> This property applies only to chart sheets (it cannot be used with embedded charts).

draft

> **True** if the sheet will be printed without graphics. Read/write.

> Setting this property to **true** makes printing faster (at the expense of not printing graphics).

first page number

> Returns or sets the first page number that will be used when this sheet is printed. If this property is omitted, Excel chooses the first page number automatically. Read/write.

fit to pages tall

> Returns or sets the number of pages tall the worksheet will be scaled to when it's printed. This property applies only to worksheets. Read/write.

> If this property is **false**, Excel scales the worksheet according to the *fit to pages wide* property.

> If the *zoom* property is **true**, the *fit to pages tall* property is ignored.

fit to pages wide

> Returns or sets the number of pages wide the worksheet will be scaled to when it's printed. This property applies only to worksheets. Read/write.

> If this property is **false**, Excel scales the worksheet according to the *fit to pages wide* property.

> If the *zoom* property is **true**, the *fit to pages wide* property is ignored.

footer margin

> Returns or sets the distance (in points) from the bottom of the page to the footer. Read/write.

header margin

> Returns or sets the distance (in points) from the top of the page to the header. Read/write.

> Margins are set or returned in points. Use the **inches to points** command or the **centimeters to points** command to convert measurements from inches or centimeters.

left footer

> Returns or sets the left part of the footer. Read/write.

> Special format codes can be used in the footer text.

left footer picture

> Returns a **graphic** object that represents the picture for the left section of the footer. Used to set attributes about the picture.

> The *left footer picture* property is read-only, but not all of its properties are read-only.

left header

> Returns or sets the left part of the header. Read/write.

> Special format codes can be used in the header text.

left header picture

> Returns a **graphic** object that represents the picture for the left section of the header. Used to set attributes about the picture.

> The *left header picture* property is read-only, but not all of its properties are read-only.

left margin

> Returns or sets the size (in points) of the left margin. Read/write.

> Margins are set or returned in points. Use the **inches to points** command or the **centimeters to points** command to convert measurements from inches or centimeters.

order

> Returns or sets the order that Excel uses to number pages when printing a large worksheet. This property applies only to worksheets. Read/write.

> Can be one of the following:

> - **down then over**
> - **over then down**

page orientation

> Returns or sets the page's orientation. Read-write.

> Can be one of the following:

> - **landscape**
> - **portrait**

print Excel comments

Returns or sets the way comments are printed with the sheet. Read/write.

Can be one of the following:

- **print sheet end**
- **print in place**
- **print no comments**

print area

Returns or sets the range to be printed as a string using A1-style references. Read/write.

To set the print area to the entire sheet, set this property to **false** or to the empty string ("").

This property applies only to worksheets.

print gridlines

True if cell gridlines are printed on the page. This property applies only to worksheets. Read/write.

print headings

True if row and column headings are printed with this page. This property applies only to worksheets. Read/write.

The *display headings* property controls the on-screen display of headings.

print notes

True if cell notes are printed as end notes with the sheet. This property applies only to worksheets. Read/write.

Use the *print comments* property to print comments as text boxes or end notes.

print quality

Returns or sets a two-element list where 1 is the horizontal print quality and 2 is the vertical print quality. Read/write.

Some printers may not support vertical print quality. If you don't specify this argument, the **print quality** command returns (or can be set to) a list that contains both horizontal and vertical print quality.

This example sets print quality on a printer with nonsquare pixels. The list specifies both horizontal and vertical print quality. This example may cause an error, depending on the printer driver you're using.

```
set print quality of page setup object ¬
    of sheet 1 of active workbook to {240, 140}
```

print title columns

Returns or sets the columns that contain the cells to be repeated on the left side of each page, as a string in A1-style notation. Read/write.

If you specify only part of a column or columns, Excel expands the range to full columns.

To turn off title columns, set this property to **false** or to the empty string ("").

This property applies only to worksheets.

print title rows

Returns or sets the rows that contain the cells to be repeated at the top of each page, as a string in A1-style notation. Read/write.

If you specify only part of a row or rows, Excel expands the range to full rows.

To turn off title rows, set this property to **false** or to the empty string ("").

This property applies only to worksheets.

right footer

Returns or sets the right part of the footer. Read/write.

Special format codes can be used in the footer text.

right footer picture

Returns a **graphic** object that represents the picture for the right section of the footer. Used to set attributes of the picture.

The *right footer picture* property is read-only, but not all of its properties are read-only.

right header

Returns or sets the right part of the header. Read/write.

Special format codes can be used in the header text.

right header picture

Returns a **graphic** object that represents the picture for the right section of the header. Used to set attributes about the picture.

The *right header picture* property is read-only, but not all of its properties are read-only.

right margin

Returns or sets the size (in points) of the right margin. Read/write.

Margins are set or returned in points. Use the **inches to points** command or the **centimeters to points** command to convert measurements from inches or centimeters.

top margin

Returns or sets the size (in points) of the top margin. Read/write.

Margins are set or returned in points. Use the **inches to points** command or the **centimeters to points** command to convert measurements from inches or centimeters.

zoom

Returns or sets a percentage (between 10 and 400 percent) by which Excel will scale the worksheet for printing. This property applies only to worksheets. Read/write.

If this property is **false**, the *fit to pages wide* and *fit to pages tall* properties control how the worksheet is scaled.

All scaling retains the aspect ratio of the original document.

Class: pane

Plural

panes

Represents a pane of a window. Please note that **pane** objects exist only for worksheets and Excel 4.0 macro sheets.

Use **pane** *index*, where *index* is the pane index number, to return a single **pane** object. The following example splits the window in which worksheet one is displayed and then scrolls through the pane in the lower-left corner until row five is at the top of the pane.

```
activate sheet 1
set split of active window to true
set scroll row of pane 3 of active window to 5
```

Properties

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

scroll column

Returns or sets the number of the leftmost column in the pane or window. Read/write.

If the window is split, the *scroll column* property of the **window** object refers to the upper-left pane. If the panes are frozen, the *scroll column* property of the **window** object excludes the frozen areas.

scroll row

Returns or sets the number of the row that appears at the top of the pane or window. Read/write.

If the window is split, the *scroll row* property of the **window** object refers to the upper-left pane. If the panes are frozen, the *scroll row* property of the **window** object excludes the frozen areas.

visible range

Returns a **range** object that represents the range of cells that are visible in the window or pane. If a column or row is partially visible, it's included in the range. Read-only.

Class: parent item

Plural

parent items

Represents a parent item in a PivotTable report.

Use **parent item** *index*, where index is the parent item's name or index number, to return a single **parent item** object. This example creates a list containing the names of all the items that are group parents in the field named "product."

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtItem in (get parent items of pivot field "product" of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtItem)
end repeat
```

Properties

<*Inheritance*> **pivot item**

Inherits the properties and elements of the **pivot item** class.

Class: phonetic

Plural

phonetics

Contains information about a specific phonetic text string in a cell.

Use **phonetic** *index*, where *index* is the index number of the phonetic text, to return a single **phonetic** object.

Use the *phonetic object* property of the **range** class to return or set the attributes of phonetic text in a specified range.

This example gets the phonetic text of the phonetic object in cell A4.

```
get phonetic text of phonetic object of range "A4"
```

Properties

character type

Returns or sets the type of phonetic text in the specified cell. Read/write.

Can be one of the following:

- **phonetic character half width katakana**

- **phonetic character full width katakana**

- **phonetic character hiragana**

- **no phonetic character conversion**

font object

Returns the **font** object that represents the font of the specified object. Read-only.

phonetic alignment

> Returns or sets the alignment for the specified phonetic text. Read/write.
>
> Can be one of the following:

- **phonetic align no control**
- **phonetic align left**
- **phonetic align center**
- **phonetic align distributed**

phonetic text

> Returns or sets the text for the specified object. Read/write.

visible

> Returns or sets if the object is visible. Read/write.

Class: pivot cache

Plural

pivot caches

Represents the memory cache for a PivotTable report.

Use the *pivot cache* property to return a **pivot cache** object for a PivotTable report (each PivotTable report has only one cache). The following example causes the first PivotTable report on worksheet 1 to refresh itself whenever the workbook is opened.

```
set refresh on file open of pivot cache of pivot table 1 of worksheet 1 to true
```

Use **pivot cache** *index*, where *index* is the cache number, to return a single **pivot cache** object from the list of **pivot cache** objects for a workbook. The following example refreshes cache 1.

```
refresh pivot cache 1 of active workbook
```

Properties

SQL query

> Returns or sets the SQL query string used with the specified ODBC data source. Read/write.
>
> This property supports the full ODBC Data Manipulation Language (DML) grammar, including wild card characters, and stored procedures that return data. This property doesn't support Data Definition Language (DDL) statements.
>
> You should use the *command text* property instead of the *SQL query* property, which now exists primarily for compatibility with earlier versions of Excel. If you use both properties, the value for the *command text* property takes precedence.
>
> For ODBC sources, the *command text* property functions exactly like the *SQL query* property, and setting the property causes the data to be refreshed.

background query

> **True** if queries for the PivotTable report or query table are performed asynchronously (in the background). Read/write.

command text

Returns or sets the command string for the specified data source. Read/write.

You should use the *command text* property instead of the *SQL query* property, which now exists primarily for compatibility with earlier versions of Excel. If you use both properties, the value for the *command text* property takes precedence.

For ODBC sources, the *command text* property functions exactly like the *SQL query* property, and setting the property causes the data to be refreshed.

connection

Returns or sets a string that contains one of the following: ODBC settings that enable you to connect to an ODBC data source; a URL that enables Excel to connect to a Web data source; or a file that specifies a database or Web query. Read/write.

Setting the *connection* property doesn't immediately initiate the connection to the data source. You must use the **refresh** command to make the connection and retrieve the data.

enable refresh

True if the PivotTable cache or query table can be refreshed by the user. The default value is **true**. Read/write.

The *refresh on file open* property is ignored if the *enable refresh* property is set to **false**.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

memory used

Returns the amount of memory (in bytes) that Excel is currently using. Read-only.

optimize cache

True if the PivotTable cache is optimized when it's constructed. The default value is **false**. Read/write.

Cache optimization results in additional queries and degrades initial performance of the PivotTable report.

record count

Returns the number of records in the PivotTable cache or the number of cache records that contain the specified item. Read-only.

refresh date

Returns the date on which the PivotTable report or pivot cache was last refreshed. Read-only.

refresh name

Returns the name of the person who last refreshed the PivotTable data or pivot cache. Read-only.

refresh on file open

True if the PivotTable cache or query table is automatically updated each time the workbook is opened. The default value is **false**. Read/write.

Query tables and PivotTable reports are not automatically refreshed when you open the workbook by using the **open** command. To refresh the data after the workbook is open, use the **refresh** command.

save password

>   **True** if password information in an ODBC connection string is saved with the specified query. **False** if the password is removed. Read/write.

>   This property affects only ODBC queries.

source data

>   Returns or sets the data source for the PivotTable report. Read/write.

>   Can be one of the following:

>   - **range object**
>   - **A1-style range reference**
>   - **named range**
>   - **list of strings**

Class: pivot field

Plural

pivot fields

Elements

child item

hidden item

parent item

pivot item

calculated item

Represents a field in a PivotTable report.

Use **pivot field** *index*, where *index* is the name or index number of the pivot field, to return a single **pivot field** object. The following example makes the pivot field named "Year" a row field in the first PivotTable report on Sheet3.

```
set pivot field orientation of pivot field "Year" ¬
        of pivot table 1 of worksheet "Sheet3" ¬
        to orient as row field
```

Properties

auto show count

Returns the number of top or bottom items that are automatically shown in the pivot field. Read-only.

auto show field

Returns the name of the data field used to determine the top or bottom items that are automatically shown in the pivot field. Read-only.

auto show range

Returns **position top** if the top items are shown automatically in the pivot field; returns **position bottom** if the bottom items are shown. Read-only.

auto show type

Returns **type_automatic** if AutoShow is enabled for the pivot field; returns **type_manual** if AutoShow is disabled. Read-only.

auto sort field

Returns the name of the data field used to sort the pivot field automatically. Read-only.

auto sort order

Returns the order used to sort the pivot field automatically. Read-only.

Can be one of the following:

- **sort ascending**
- **sort descending**
- **sort manual** (if automatic sorting is disabled)

base field

Returns or sets the base field for a custom calculation. Valid only for data fields. Read/write.

base item

Returns or sets the item in the base field for a custom calculation. Valid only for data fields. Read/write.

calculation

Returns or sets the type of calculation done by the specified pivot field. Valid only for data fields. Read/write.

Can be one of the following:

- **pivot field calculation difference from**
- **pivot field calculation index**
- **pivot field calculation no additional calculation**
- **pivot field calculation percent difference from**
- **pivot field calculation percent of**
- **pivot field calculation percent of column**
- **pivot field calculation percent of row**
- **pivot field calculation percent of total**
- **pivot field calculation running total**

child field

Returns a **pivot field** object that represents the child pivot field for the specified field (if the field is grouped and has a child field). Read-only.

If the specified field has no child field, this property causes an error.

current page

Returns or sets the current page showing for the page field. This property is valid only for page fields. Read/write.

To set this property, set it to the name of the page. Set it to **all** to set all pages that are showing.

data range

Returns a **range** object. For a data field, the range is the data contained in the field. For a row, column, or page field, the range is the items in the field. For items, the range is the data qualified by the item. Read-only.

drag to column

True if the pivot field can be dragged to the column position. The default value is **true**. Read/write.

drag to data

True if the specified field can be dragged to the data position. The default value is **true**. Read/write.

drag to hide

True if the field can be hidden by being dragged off the PivotTable report. The default value is **true**. Read/write.

drag to page

> **True** if the field can be dragged to the page position. The default value is **true**. Read/write.

drag to row

> **True** if the field can be dragged to the row position. The default value is **true**. Read/write.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

> If the cell contains a constant, this property returns the constant. If the cell is empty, *formula* returns an empty string. If the cell contains a formula, *formula* returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

> If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, Excel changes the number format to the default short date number format.

> If the range is a one- or two-dimensional range, you can set the formula to an array formula of the same dimensions. Similarly, you can put the formula into a list.

> Setting the formula for a multiple-cell range fills all cells in the range with the formula.

function

> Returns or sets the function used to summarize the pivot field (data fields only). Read/write.

> Can be one of the following:

do average	**do standard deviation**
do count numbers	**do standard deviation p**
do maximum	**do sum**
do minimum	**do var**
do product	**do var p**

group level

> Returns the placement of the specified field within a group of fields (if the field is a member of a grouped set of fields). Read-only.

> The highest-level parent field (leftmost parent field) is level one, its child is level two, and so on.

is calculated

> **True** if the pivot field or item is a calculated field or item. Read-only.

label range

> Returns a **range** object that represents the cell (or cells) that contain the field label. Read-only.

memory used

> Returns the amount of memory (in bytes) currently being used by the object. Read-only.

name

Returns or sets the name of the object. Read/write.

number format

Returns or sets the format code for the object. If all cells in the specified range do not have the same number format, returns **missing value**. Read/write.

For the **pivot field** object, you can set the *number format* property only for a data field.

The format code is the same string as the **Format Codes** option in the **Format Cells** dialog box. The **format** function uses different format code strings than do the *number format* and *number format local* properties.

parent field

Returns a **pivot field** object that represents the pivot field that's the group parent of the object. The field must be grouped and have a parent field. Read-only.

pivot field data type

Returns a constant describing the type of data in the pivot field. Read-only.

Can be one of the following:

- **pivot field type date**
- **pivot field type number**
- **pivot field type text**

pivot field orientation

Returns or sets the location of the field in the PivotTable report. Read/write.

Can be one of the following:

- **orient as column field**
- **orient as data field**
- **orient as hidden**
- **orient as page field**
- **orient as row field**

position

Returns or sets the position of the field (first, second, third, and so on) among all the fields in its orientation (rows, columns, pages, data). Read/write.

server based

> **True** if the PivotTable report's data source is external and only the items matching the page field selection are retrieved. Read/write.

> When this property is **true**, only records in the database that match the selected page field item are retrieved. From then on, whenever the user changes the page field selection, the newly selected page field item is passed to the query as a parameter, and the cache is refreshed.

> This property cannot be set if any of the following conditions are true:

> - The field is grouped.

> - The data source isn't external.

> - The cache is shared by two or more PivotTable reports.

> - The field is a data type that cannot be server based (a memo field or an OLE object).

show all items

> **True** if all items in the PivotTable report are displayed, even if they don't contain summary data. The default value is **false**. Read/write.

source name

> Returns the specified object's name, as it appears in the original source data for the PivotTable report. This might be different from the current item name if the user renamed the item after creating the PivotTable report. Read-only.

total levels

> Returns the total number of fields in the current field group. If the field is not grouped, the *total levels* property returns the value 1. Read-only.

> All fields in a set of grouped fields have the same *total levels* value.

value

> Returns or sets the name of the specified field in the PivotTable report. Read/write.

visible items

> Returns an object that represents either a single visible pivot item (a **pivot item** object) or a list of all the visible pivot items (a **pivot items** object) in the specified field. Read-only.

Class: pivot formula

Plural

pivot formulas

Represents a formula used to calculate results in a PivotTable report.

Use **pivot formula** *index*, where *index* is the formula number or string on the left side of the pivot formula, to return the **pivot formula** object. The following example changes the index number for formula one so that it will be solved after formula two.

```
set entry index of pivot formula 1 of pivot table 1 of worksheet 1 to 2
```

Properties

entry index

>   Returns the index number of the object within the elements of the parent object. Read-only.

formula

>   Returns or sets the object's formula in A1-style notation. Read/write.

>   If the cell contains a constant, this property returns the constant. If the cell is empty, *formula* returns an empty string. If the cell contains a formula, *formula* returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

>   If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, Excel changes the number format to the default short date number format.

>   If the range is a one- or two-dimensional list, you can set the formula to an array formula of the same dimensions. Similarly, you can put the formula into a list.

>   Setting the formula for a multiple-cell range fills all cells in the range with the formula.

value

>   Returns or sets the name of the specified formula in the PivotTable report. Read/write.

Class: pivot item

Plural

pivot items

Elements

child item

Represents an item in a pivot field. The items are the individual data entries in a field category.

Use **pivot item** *index*, where *index* is the pivot item index number or name, to return a single **pivot item** object. The following example hides all entries in the first PivotTable report on Sheet3 that contain "1998" in the "Year" pivot field.

```
set visible of pivot item "1998" of pivot field "Year" of pivot table 1 ¬
        of worksheet "Sheet3" to false
```

Properties

data range

>   Returns a **range** object as shown in the following table. For a data field, the range is the data contained in the field. For a row, column, or page field, the range is the items in the field. For items, the range is the data qualified by the item. Read-only.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

> If the cell contains a constant, this property returns the constant. If the cell is empty, *formula* returns an empty string. If the cell contains a formula, *formula* returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

> If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, Excel changes the number format to the default short date number format.

> If the range is a one- or two-dimensional list, you can set the formula to an array formula of the same dimensions. Similarly, you can put the formula into a list.

> Setting the formula for a multiple-cell range fills all cells in the range with the formula.

is calculated

> **True** if the pivot field or item is a calculated field or item. Read-only.

label range

> Returns a **range** object that represents the cell (or cells) that contain the field label. Read-only.

name

> Returns or sets the name of the object. Read/write.

parent item

> Returns a **pivot item** object that represents the parent pivot item in the parent **pivot field** object (the field must be grouped so that it has a parent). Read-only.

parent show detail

> **True** if the specified item is showing because one of its parents is showing detail. **False** if the specified item isn't showing because one of its parents is hiding detail. This property is available only if the item is grouped. Read-only.

position

> Returns or sets the position of the item in its field, if the item is currently showing. Read/write.

record count

> Returns the number of records in the PivotTable cache or the number of cache records that contain the specified item. Read-only.

show detail

> **True** if the pivot item is showing detail. Read/write.

> If the specified range is in a PivotTable report, it's possible to set this property for more than one cell at a time if the range is contiguous. This property can be returned only if the range is a single cell.

source name

> Returns the name of the specified object, as it appears in the original source data for the PivotTable report. This might be different from the name of the current item if the user renamed the item after creating the PivotTable report. Read-only.

value

> Returns or sets the name of the specified item in the PivotTable report. Read/write.

visible

> **True** if the item is currently visible in the table. Read/write.

Class: pivot table

Plural
pivot tables

Elements
column field

data field

hidden field

page field

pivot field

row field

calculated field

pivot formula

Represents a PivotTable report on a worksheet.

Use **pivot table** *index*, where *index* is the PivotTable index number or name, to return a single **pivot table** object. The following example makes the pivot field named "Year" a row field in the first PivotTable report on Sheet3.

```
set pivot field orientation of pivot field "Year" ¬
        of pivot table 1 of worksheet "Sheet3" ¬
        to orient as row field
```

Properties
cache index

> Returns or sets the index number of the PivotTable cache. Read/write.

> If you set the *cache index* property so that one PivotTable report uses the cache for a second PivotTable report, the first PivotTable report's fields must be a valid subset of the fields in the second PivotTable report.

column grand

> **True** if the PivotTable report shows grand totals for columns. Read/write.

column range

Returns a **range** object that represents the range that contains the PivotTable column area. Read-only.

data body range

Returns a **range** object that represents the range that contains the PivotTable data area. Read-only.

data label range

Returns a **range** object that represents the range that contains the labels for the PivotTable data fields. Read-only.

display error string

True if the PivotTable report displays a custom error string in cells that contain errors. The default value is **false**. Read/write.

To set the custom error string, use the *error string* property.

This property is particularly useful for suppressing divide-by-zero errors when calculated fields are pivoted.

display null string

True if the PivotTable report displays a custom string in cells that contain null values. The default value is **true**. Read/write.

To set the custom null string, use the *null string* property.

enable drilldown

True if drilldown is enabled. The default value is **true**. Read/write.

Setting this property for a PivotTable report sets it for all fields in that PivotTable report.

enable field dialog

True if the **PivotTable Field** dialog box is available when the user double-clicks the PivotTable field. The default value is **true**. Read/write.

Setting this property for a PivotTable report sets it for all fields in that PivotTable report.

enable wizard

True if the PivotTable Wizard is available. The default value is **true**. Read/write.

error string

Returns or sets the string displayed in cells that contain errors when the *display error string* property is **true**. The default value is an empty string (""). Read/write.

has autoformat

True if the PivotTable report is automatically formatted when it's refreshed or when fields are moved. Read/write.

inner detail

Returns or sets the name of the field that will be shown as detail when the *show detail* property is **true** for the innermost row or column field. Read/write.

manual update

> **True** if the PivotTable report is recalculated only at the user's request. The default value is **false**. Read/write.

merge labels

> **True** if PivotTable outer-row item, column item, subtotal, and grand total labels use merged cells. Read-write.

name

> Returns or sets the name of the object. Read/write.

null string

> Returns or sets the string displayed in cells that contain null values when the *display null string* property is **true**. The default value is an empty string (""). Read/write.

page field order

> Returns or sets the order in which page fields are added to the PivotTable layout. Read/write.
>
> Can be one of the following:

- **down then over**

- **over then down**

page field style

> Returns or sets the style used in the bound page field area. The default value is a *null string* (no style is applied by default). Read/write.
>
> This style is used as the default style for the background area, and it's applied before any user formatting. Cells vacated when a field is pivoted from the page field area to another location retain this style.

page field wrap count

> Returns or sets the number of PivotTable page fields in each column or row. Read/write.

page range

> Returns a **range** object that represents the range that contains the PivotTable page area. Read-only.

page range cells

> Returns a **range** object that represents the cells in the PivotTable report containing only the page fields and item drop-down lists. Read-only.

pivot cache

> Returns a **pivot cache** object that represents the cache for the specified PivotTable report. Read-only.

pivot selection

Returns or sets the PivotTable selection, in standard PivotTable selection format. Read/write.

Setting this property is equivalent to calling the **pivot select** command with the *mode* argument set to **selection mode data and label**.

Standard PivotTable selection format is a string expression used to specify part of a PivotTable report. You can refer to a particular cell only if the PivotTable selection string contains the names of all the items used to identify individual cells in the selection. The number of items in that string should be equal to the number of fields in the view for a cell in a normal data area. If the cell is used in calculating a subtotal or grand total, the number of items in the string would be fewer (including 0 [zero] for the intersection of the column and row grand totals).

The item names in the string can appear in any order. If an item name is ambiguous because it appears in another field as well, it must be qualified by "Field[Item]." If an item name contains symbols and spaces, or if it doesn't start with an alphabetical character, it should be enclosed in single quotation marks. If an item name contains embedded single quotation marks, each of these marks must be converted to two single quotation marks. Quotation marks aren't required for spaces if the name is unambiguous, and they're not required for unqualified names that begin with numbers.

preserve formatting

True if PivotTable formatting is preserved when the PivotTable report is refreshed or recalculated by operations such as pivoting, sorting, or changing page field items. Read/write.

refresh date

Returns the date on which the PivotTable report or pivot cache was last refreshed. Read-only.

refresh name

Returns the name of the person who last refreshed the PivotTable data or pivot cache. Read-only.

row grand

True if the PivotTable report shows grand totals for rows. Read/write.

row range

Returns a **range** object that represents the range including the PivotTable row area. Read-only.

save data

True if data for the PivotTable report is saved with the workbook; **false** if only the PivotTable definition is saved. Read/write.

selection mode

Returns or sets the PivotTable structured selection mode. Read/write.

Can be one of the following:

- **selection mode label only**
- **selection mode data and label**
- **selection mode data only**
- **selection mode origin**
- **selection mode button**
- **selection mode blanks**

small grid

True if Excel uses a grid that's two cells wide and two cells deep for a newly created PivotTable report. **False** if Excel uses a blank stencil outline. Read/write.

You should use the stencil outline. The grid is provided only because it enables compatibility with earlier versions of Excel.

source data

Returns or sets the data source for the PivotTable report. Read/write.

Can be one of the following:

- **range object**
- **A1-style range reference**
- **named range**
- **list of strings**

subtotal hidden page items

True if hidden page field items in the PivotTable report are included in row and column subtotals, block totals, and grand totals. The default value is **false**. Read/write.

table range1

Returns a **range** object that represents the range containing the entire PivotTable report, but doesn't include page fields. Read-only.

The *table range2* property includes page fields.

table range2

Returns a **range** object that represents the range containing the entire PivotTable report, including page fields. Read-only.

The *table range1* property doesn't include page fields.

table style

> Returns or sets the style used in the PivotTable body. The default value is a *null string* (no style is applied by default). Read/write.

> This style is used as the default style for the background area, and it's applied before any user formatting.

tag

> Returns or sets a string saved with the PivotTable report. Read/write.

vacated style

> Returns or sets the style applied to cells vacated when the PivotTable report is refreshed. The default value is a *null string* (no style is applied by default). Read/write.

value

> Returns or sets the name of the PivotTable report. Read/write.

Class: query table

Plural

query tables

Represents a worksheet table built from data returned from an external data source, such as a SQL server or a Microsoft Access database.

Use **query table** *index*, where *index* is the index number of the query table, to return a single **query table** object. The following example sets query table one so that formulas to the right of it are automatically updated whenever it's refreshed.

```
set fill adjacent formulas of query table 1 ¬
        of sheet "Sheet1" to true
```

Properties

FileMaker fields

> Returns or sets a list of the field names used in a FileMaker database. Read/write.

> To set values for this property, assign them by using a list in the form {"field name", "layout number", "field name", "layout number",...}, alternately specifying a field name and layout number used in the FileMaker database. The number represents the layout from which the field derives. In most cases this value is 0 (zero), designating the layout that contains all the fields.

FileMaker num criteria

> Returns or sets the number of criteria used in an Excel query table that has been created to run against a FileMaker database. Read/write.

adjust column width

> **True** if the column widths are automatically adjusted for the best fit each time you refresh a query table. **False** if the column widths aren't automatically adjusted with each refresh. The default value is **true**. Read/write.

> The maximum column width is two-thirds the width of the screen.

background query

> **True** if queries for the PivotTable report or query table are performed asynchronously (in the background). Read/write.

connection

> Returns or sets a string that contains one of the following: ODBC settings that enable Excel to connect to an ODBC data source, a URL that enables Excel to connect to a Web data source, or a file that specifies a database or Web query. Read/write.

> Setting the *connection* property doesn't immediately initiate the connection to the data source. You must use the **refresh query table** command to make the connection and retrieve the data.

destination

> Returns the cell in the upper-left corner of the query table destination range (the range where the resulting query table will be placed). The destination range must be on the worksheet that contains the **query table** object. Read-only.

enable editing

> **True** if the user can edit the specified query table. **False** if the user can only refresh the query table. Read/write.

enable refresh

> **True** if the PivotTable cache or query table can be refreshed by the user. The default value is **true**. Read/write.

> The *refresh on file open* property is ignored if the *enable refresh* property is set to **false**.

fetched row overflow

> **True** if the number of rows returned by the last use of the **refresh query table** command is greater than the number of rows available on the worksheet. Read-only.

field names

> **True** if field names from the data source appear as column headings for the returned data. The default value is **true**. Read/write.

fill adjacent formulas

> **True** if formulas to the right of the specified query table are automatically updated whenever the query table is refreshed. Read/write.

has autoformat

> **True** if the PivotTable report is automatically formatted when it's refreshed or when fields are moved. Read/write.

name

> Returns or sets the name of the object. Read/write.

post text

> Returns or sets the string used with the post method of inputting data into a Web server to return data from a Web query. Read/write.

> Excel includes sample Web queries that you can modify by changing the HTML code by using a text editor. You can find these samples in the Microsoft Office 2004/Office/Queries folder.

query type

Returns one of the following constants indicating the type of query used by Excel to populate the query table or PivotTable cache: **ODBC query**, **DAO record set**, **web query**, **OLE DB query**, **text import**, or **ADO recordset**. Read-only.

You specify the data source in the prefix for the value of the *connection* property.

refresh on file open

True if the PivotTable cache or query table is automatically updated each time the workbook is opened. The default value is **false**. Read/write.

Query tables and PivotTable reports are not automatically refreshed when you open the workbook by using the **Open** command (**File** menu). To refresh the data after the workbook is open, use the **refresh all** command.

refresh style

Returns or sets the way rows on the specified worksheet are added or deleted to accommodate the number of rows in a recordset returned by a query. Read/write. Can be one of the following:

Value	Description
overwrite cells	No new cells or rows are added to the worksheet. Data in surrounding cells is overwritten to accommodate any overflow.
insert delete cells	Partial rows are inserted or deleted to match the exact number of rows required for the new recordset.
insert entire rows	Entire rows are inserted, if necessary, to accommodate any overflow. No cells or rows are deleted from the worksheet.

refreshing

True if there's a background query in progress for the specified query table. Read-only.

To cancel background queries, use the **cancel refresh** command.

result range

Returns a **range** object that represents the area of the worksheet occupied by the specified query table. Read-only.

The range doesn't include the field name row or the row number column.

row numbers

True if row numbers are added as the first column of the specified query table. Read/write.

Setting this property to **true** doesn't immediately cause row numbers to appear. The row numbers appear the next time the query table is refreshed, and they're reconfigured every time the query table is refreshed.

save data

True if data for the PivotTable report is saved with the workbook. **False** if only the PivotTable definition is saved. Read/write.

save password

> **True** if password information in an ODBC connection string is saved with the specified query. **False** if the password is removed. Read/write.

> This property affects only ODBC queries.

sql

> Returns or sets the SQL query string used with the specified ODBC data source. Read/write.

> This property supports the full ODBC Data Manipulation Language (DML) grammar, including wild card characters and stored procedures that return data. This property does not support Data Definition Language (DDL) statements.

tables only from html

> **True** if only the HTML tables in the document are read when a query table is refreshed. **False** if the entire HTML document is read when a query table is refreshed. This property has an effect only when the query table is using a URL connection and the Web query returns an HTML document. Read/write.

text file column data types

> Returns or sets an ordered list of constants that specify the data types applied to the corresponding columns in the text file that you're importing into a query table. The default constant for each column is **general format**. Read/write.

> Can be any of the following:

> - **general format**
> - **text format**
> - **MDY format**
> - **DMY format**
> - **YMD format**
> - **MYD format**
> - **DYM format**
> - **YDM format**
> - **skip column**

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

> If you specify more elements in the list than there are columns, those values are ignored.

text file comma delimiter

> **True** if the comma is the delimiter when you import a text file into a query table. **False** if you want to use some other character as the delimiter. The default value is **false**. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**) and only if the value of the *text file parse type* property is **delimited**.

text file consecutive delimiter

> **True** if consecutive delimiters are treated as a single delimiter when you import a text file into a query table. The default value is **false**. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**) and only if the value of the *text file parse type* property is **delimited**.

text file decimal separator

> Returns or sets the decimal separator character that Excel uses when you import a text file into a query table. The default is the system decimal separator character. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**), when the file contains decimal and thousands separators that are different from those used on the computer due to a different language setting being used.

> The following table shows the results when you import text into Excel using various separators. Numeric results are displayed in the rightmost column.

System decimal separator	System thousands separator	TextFile DecimalSeparator value	TextFile ThousandsSeparator value	Text imported	Cell value (data type)
Period	Comma	Comma	Period	123.123,45	123,123.45 (numeric)
Period	Comma	Comma	Comma	123.123,45	123.123,45 (text)
Comma	Period	Comma	Period	123,123.45	123,123.45 (numeric)
Period	Comma	Period	Comma	123 123.45	123 123.45 (text)
Period	Comma	Period	Space	123 123.45	123,123.45 (numeric)

text file fixed column widths

> Returns or sets a list of integers that correspond to the widths of the columns (in characters) in the text file that you're importing into a query table. Valid widths are from 1 through 32767 characters. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**) and only if the value of the *text file parse type* property is **fixed width**.

> You must specify a valid, nonnegative column width. If you specify columns that exceed the width of the text file, those values are ignored. If the width of the text file is greater than the total width of columns you specify, the balance of the text file is imported into an additional column.

text file other delimiter

Returns or sets the character used as the delimiter when you import a text file into a query table. The default value is null. Read/write.

Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**) and only if the value of the *text file parse type* property is **delimited**.

If you specify more than one character in the string, only the first character is used.

text file parse type

Returns or sets the column format for the data in the text file that you're importing into a query table. Read/write.

Can be one of the following:

Value	Description
delimited	The file is delimited by delimiter characters.
fixed width	The data in the file is arranged in columns of fixed widths.

The default value is **delimited**.

Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

text file platform

Returns or sets the origin of the text file you're importing into the query table. This property determines which code page is used during the data import.

Can be any of the following:

- **Macintosh**

- **MSDos**

- **MSWindows**

The default value is the current setting of the **File Origin** option in the Text File Import Wizard. Read/write.

Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

text file prompt on refresh

True if you want to specify the name of the imported text file each time the query table is refreshed. The **Import Text File** dialog box allows you to specify the path and file name. The default value is **false**. Read/write.

Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

If the value of this property is **true**, the dialog box doesn't appear the first time a query table is refreshed.

The default value is **true** in the user interface.

text file semicolon delimiter

> **True** if the semicolon is the delimiter when you import a text file into a query table, and if the value of the *text file parse type* property is **delimited**. The default value is **false**. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

text file space delimiter

> **True** if the space character is the delimiter when you import a text file into a query table. The default value is **false**. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**), and only if the value of the *text file parse type* property is **delimited**.

text file start row

> Returns or sets the row number at which text parsing will begin when you import a text file into a query table. Valid values are integers from 1 through 32767. The default value is 1. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

text file tab delimiter

> **True** if the tab character is the delimiter when you import a text file into a query table. The default value is **false**. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**), and only if the value of the *text file parse type* property is **delimited**.

text file text qualifier

> Returns or sets the text qualifier when you import a text file into a query table. The text qualifier specifies that the enclosed data is in text format. Read/write.

> Can be any of the following:

> - **text qualifier double quote**
> - **text qualifier none**
> - **text qualifier single quote**

> The default is **text qualifier double quote**.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**).

text file thousands separator

> Returns or sets the thousands separator character that Excel uses when you import a text file into a query table. The default is the system thousands separator character. Read/write.

> Use this property only when your query table is based on data from a text file (with the *query type* property set to **text import**), especially when the file contains decimal and thousands separators that are different from those used on the computer due to a different language setting being used.

The following table shows the results when you import text into Excel using various separators. Numeric results are displayed in the rightmost column.

System decimal separator	System thousands separator	TextFile DecimalSeparator value	TextFile ThousandsSeparator value	Text imported	Cell value (data type)
Period	Comma	Comma	Period	123.123,45	123,123.45 (numeric)
Period	Comma	Comma	Comma	123.123,45	123.123,45 (text)
Comma	Period	Comma	Period	123,123.45	123,123.45 (numeric)
Period	Comma	Period	Comma	123 123.45	123 123.45 (text)
Period	Comma	Period	Space	123 123.45	123,123.45 (numeric)

use list object

True if a query table uses a list object to present its data. Read/write.

The default value is **True**.

This property must be implemented after a refresh; otherwise, an error results.

Class: recent file

Plural
recent files

Represents a file in the list of recently used files.

Use **recent file** *index*, where *index* is the file number, to return a **recent file** object. The following example opens file two in the list of recently used files.

```
if (count of recent files) >= 1 then
    open workbook workbook file name (path of recent file 2)
end if
```

Properties
entry index

Returns the index number of the object within the elements of the parent object.

name

Returns or sets the name of the object.

path

Returns the complete path of the object, excluding the final separator and name of the object. Read-only.

Class: row field

Plural
row fields

Represents a row field in a PivotTable report.

Use **row field** *index*, where index is the row field's name or index number, to return a single **row field** object.

This example adds the PivotTable row field names to a list on a new worksheet.

```
set nwSheet to make new worksheet
activate object nwSheet
set pvtTable to pivot table of range "A1" of worksheet "Sheet2"
set rw to 0
repeat with pvtField in (get row fields of pvtTable)
    set rw to rw + 1
    set value of cell rw of column 1 of nwSheet to (get name of pvtField)
end repeat
```

Properties
<*Inheritance*> **pivot field**

> Inherits the properties and elements of the **pivot field** class.

Class: scenario

Plural

scenarios

Represents a scenario on a worksheet. A scenario is a group of input values (called *changing cells*) that is named and saved.

Use **scenario** *index*, where *index* is the scenario name or index number, to return a single **scenario** object. The following example shows the scenario named "Typical" on the worksheet named "Options."

```
show scenario "Typical" of worksheet "Options"
```

Properties
Excel comment

> Returns or sets the comment associated with the scenario. The comment text cannot exceed 255 characters. Read/write.

changing cells

> Returns a **range** object that represents the changing cells for a scenario. Read-only.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

hidden

> **True** if the scenario is hidden. The default value is **false**. Read/write.

locked

> **True** if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

name

> Returns or sets the name of the object. Read/write.

Class: scrollbar

Plural

scrollbars

Represents a scrollbar control. A scroll bar is a stand-alone control you can place on a form. It is visually like the scrollbar you see in certain objects such as a list box or the drop-down portion of a combo box. However, unlike the scrollbars in these examples, the stand-alone scrollbar is not an integral part of any other control.

Use **scrollbar** *index*, where *index* is the entry index number or name to return a single **scrollbar** object. The following example creates a new scrollbar.

```
make new scrollbar at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **scrollbar** object on a worksheet.

```
get properties of scrollbar 1 of worksheet 1 of workbook 1
```

Properties

bottom right cell

> Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

display threeD shading

> **True** if the object has 3-D shading turned on. Read/write.

enabled

> **True** if the object is enabled. Read/write

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

height

> Returns or sets the height (in points) of an object. Read/write.

large change

Returns or sets the amount that the scrollbar increments or decrements for a page scroll (when the user clicks in the scrollbar body region). Read/write.

left position

Returns or sets the position (the distance from the left edge of the object to the left edge of column A) of the specified object, in points. Read/write.

linked cell

Returns or sets the worksheet range linked to the value of the control. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

maximum value

Returns or sets the maximum value of the scrollbar range. The scrollbar or spinner will not take on values greater than this maximum value. Read/write.

The value of the *maximum value* property must be greater than the value of the *minimum value* property.

minimum value

Returns or sets the minimum value of the scrollbar range. The scrollbar or spinner will not take on values less than this minimum value. Read/write.

The value of the *minimum value* property must be less than the value of the *maximum value* property.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets the name of the script or Visual Basic macro that's run when the specified object is clicked. Read/write.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

small change

> Returns or sets the amount that the scrollbar is incremented or decremented for a line scroll (when the user clicks an arrow). Read/write

top

> Returns or sets the position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

> Returns or sets the value of the control. Read/write.

visible

> Specifies whether an object is visible or hidden. Use the *visible* property to control access to information without displaying it. For example, you could use the value of a control on a hidden form as the criterion for a query.

width

> Returns or sets an object's width, in points. Read/write

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: sheet

Plural
sheets

Elements

shape	**listbox**	**scenario**
arc	**named item**	**scrollbar**
button	**option button**	**spinner**
cell	**oval**	**textbox**
chart object	**pivot table**	**horizontal page break**
checkbox	**range**	**vertical page break**
dropdown	**cell**	**query table**
groupbox	**row**	**Excel comment**
label	**column**	**hyperlink**
line	**rectangle**	**list object**

Represents a worksheet.

Use **sheet** *index*, where *index* is the worksheet index number or name to return a single **sheet** object. The following example hides the first worksheet in the active workbook.

```
set visible of sheet 1 to sheet hidden
```

The worksheet index number denotes the position of the worksheet on the workbook's tab bar. `sheet 1` is the first (leftmost) worksheet in the workbook, and `sheet (get count of sheets)` is the last one. All worksheets are included in the index count, even if they're hidden.

The worksheet name is shown on the tab for the worksheet. To set or return the worksheet name, use the *name* property. The following example protects the scenarios on the first worksheet in the workbook.

```
protect worksheet sheet 1 password "drowssap" with scenarios
```

Properties

autofilter mode

> **True** if the AutoFilter drop-down arrows are currently displayed on the sheet. This property is independent of the *filter mode* property. Read/write.

> This property returns **true** if the drop-down arrows are currently displayed. You can set this property to **false** to remove the arrows, but you cannot set it to **true**. To filter a list and display the drop-down arrows, use the **autofilter range** command.

autofilter object

> Returns an **autofilter** object if filtering is on. Returns **missing value** if filtering is off. Read-only.

> To create an **autofilter** object for a worksheet, you must turn AutoFilter on for a range on the worksheet either manually or by using the **autofilter range** command.

circular reference

> Returns a **range** object that represents the range containing the first circular reference on the sheet, or returns **missing value** if there's no circular reference on the sheet. The circular reference must be removed before calculation can proceed. Read-only.

consolidation function

> Returns the function code used for the current consolidation. Read-only.

> Can be any of the following:

do average	**do standard deviation**
do count	**do standard deviation p**
do count numbers	**do sum**
do maximum	**do var**
do minimum	**do var p**
do product	

consolidation options

> Returns a three-element list of consolidation options, as shown in the following table. If the element is **true**, that option is set. Read-only.

Element	Meaning
1	Use labels in top row.
2	Use labels in left column.
3	Create links to source data.

consolidation sources

Returns a list of string values that name the source sheets for the worksheet's current consolidation. Returns an empty list if there's no consolidation on the sheet. Read-only.

display page breaks

True if page breaks (both automatic and manual) on the specified worksheet are displayed. Read/write.

enable autofilter

True if AutoFilter arrows are enabled when user-interface-only protection is turned on. Read/write.

This property applies to each worksheet and isn't saved with the worksheet or session.

enable calculation

True if Excel automatically recalculates the worksheet when necessary. **False** if the user cannot request a recalculation (Excel never recalculates the sheet automatically). Read/write.

When you change this property from **false** to **true**, Excel recalculates the worksheet.

enable outlining

True if outlining symbols are enabled when user-interface-only protection is turned on. Read/write.

This property applies to each worksheet and isn't saved with the worksheet or session.

enable pivot table

True if PivotTable controls and actions are enabled when user-interface-only protection is turned on. Read/write.

This property applies to each worksheet and isn't saved with the worksheet or session.

There must be a sufficient number of unlocked cells below and to the right of the PivotTable report for Excel to recalculate and display the PivotTable report.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

filter mode

True if the worksheet is in filter mode. Read-only.

This property is **true** if the worksheet contains a filtered list in which there are hidden rows.

name

Returns or sets the name of the object. Read/write.

next

Returns a **sheet** object that represents the next sheet. Read-only.

outline object

Returns an **outline** object that represents the outline for the specified worksheet. Read-only.

page setup object

Returns a **page setup** object that contains all the page setup settings for the specified object. Read-only.

previous

Returns a **sheet** object that represents the previous sheet. Read-only.

protect contents

True if the contents of the sheet are protected. This protects the individual cells. Read-only.

protect drawing objects

True if shapes are protected. Read-only.

protection mode

True if user-interface-only protection is turned on. To turn on user interface protection, use the **protect worksheet** command with the **user interface only** argument set to **true**. Read-only.

scroll area

Returns or sets the range where scrolling is allowed, as an A1-style range reference. Cells outside the scroll area cannot be selected. Read/write.

Set this property to the empty string ("") to enable cell selection for the entire sheet.

standard height

Returns the standard (default) height (in points) of all the rows in the worksheet. Read-only.

standard width

Returns or sets the standard (default) width of all the columns in the worksheet. Read/write.

One unit of column width is equal to the width of one character in the Normal style. For proportional fonts, the width of the character 0 (zero) is used.

transition expression evaluation

True if Excel uses Lotus 1-2-3 expression evaluation rules for the worksheet. Read/write.

used range

Returns a **range** object that represents the used range on the specified sheet. Read-only.

The used range is the smallest rectangle that contains all cells in the sheet containing data. The used range may contain empty cells within it, including in its corners. For example, if the sheet contains data only in cells A1 , E1 and C3, its used range would be "$A$1:$E$3."

visible

True if the worksheet is visible. Read/write.

Can be any of the following:

- **sheet visible**

- **sheet hidden**

- **sheet very hidden**

The **sheet very hidden** constant hides the worksheet so that the only way for you to make it visible again is by setting this property to **true** (the user cannot make the sheet visible).

worksheet type

>Returns the worksheet type. Read-only.

>Can be any of the following:

> - **sheet type chart**
> - **sheet type dialog sheet**
> - **sheet type excel 4 intl macro sheet**
> - **sheet type excel 4 macro sheet**
> - **sheet type worksheet**

Class: spinner

Plural

spinners

Represents a spinner control.

Use **spinner** *index*, where *index* is the entry index number or name to return a single **spinner** object. The following example creates a new spinner.

```
make new spinner at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:20, width:16}
```

The following example gets the properties of a **spinner** object on a worksheet.

```
get properties of spinner 1 of worksheet 1 of workbook 1
```

Properties

bottom right cell

>Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

display threeD shading

>**True** if the object has 3-D shading turned on. Read/write.

enabled

>**True** if the object is enabled. Read/write.

entry index

>Returns the index number of the object within the elements of the parent object. Read-only.

height

>Returns or sets the height (in points) of an object. Read/write.

left position

>Returns or sets the position (in points) of the specified object. Read/write.

linked cell

> Returns or sets the worksheet range linked to the control's value. If you place a value in the cell, the control takes this value. Likewise, if you change the value of the control, that value is also placed in the cell. Read/write.

> You cannot use this property if the *multi select* property is **select simple** or **select extended**.

locked

> **True** if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

maximum value

> Returns or sets the maximum value of the spinner range. The spinner will not take on values greater than this maximum value. Read/write.

> The value of the *maximum value* property must be greater than the value of the *minimum value* property.

minimum value

> Returns or sets the minimum value of the spinner range. The spinner will not take on values less than this minimum value. Read/write.

> The value of the *minimum value* property must be less than the value of the *maximum value* property.

name

> Returns or sets the name of the object. Read/write.

on action

> Returns or sets the name of the script of Visual Basic macro that runs when the specified object is clicked. Read/write.

placement

> Returns or sets the way the object is attached to the cells below it. Read/write.

> Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

> **True** if the object will be printed when the document is printed. Read/write.

small change

> Returns or sets the amount that the spinner is incremented or decremented for a line scroll (when the user clicks an arrow). Read/write.

top

>   Returns or sets the position (in points) of the specified object. Read/write.

top left cell

>   Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

value

>   Returns or sets the value of the control. Read/write.

visible

>   Specifies whether an object is visible or hidden. Use the *visible* property to control access to information without displaying it. For example, you could use the value of a control on a hidden form as the criterion for a query.

width

>   Returns or sets an object's width, in points. Read/write

z order position

>   Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

>   Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: textbox

Plural

textboxes

Represents a textbox control.

Use **textbox** *index*, where *index* is the entry index number or name to return a single **textbox** object. The following example creates a new textbox.

```
make new textbox at end of worksheet 1 of workbook 1 with properties
    {top:100, left position:100, height:24, width:100}
```

The following example gets the properties of a **textbox** object on a worksheet.

```
get properties of textbox 1 of worksheet 1 of workbook 1
```

Properties
add indent

>   Returns or sets whether the text is automatically indented when the text alignment in a cell is set to equal distribution either horizontally or vertically.

>   This property is not used in U.S. English versions of Excel.

auto scale font

> **True** if the text in the object changes font size when the object size changes. The default value is **true**. Read/write.

auto size

> **True** if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the specified object. Read-only.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

> If the cell contains a constant, this property returns the constant. If the cell is empty, **formula** returns an empty string. If the cell contains a formula, **formula** returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

> If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, Excel changes the number format to the default short date number format.

> If the range is a one- or two-dimensional list, you can set the formula to an array formula of the same dimensions. Similarly, you can put the formula into a list.

> Setting the formula for a multiple-cell range fills all cells in the range with the formula.

height

> Returns or sets the height (in points) of an object. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the specified object. Read-only.

left position

Returns or sets the position (in points) of the specified object. The position is defined as the distance from the left edge of the object to the left edge of column A. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of the script or VB macro that runs when the specified object is clicked. AppleScript scripts are not saved with the document. Read/write.

orientation

Returns or sets the object's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

reading order

This property is not currently supported.

rounded corners

True if the object has rounded corners. Read/write

shadow

True if the font is a shadow font or if the object has a shadow. Read/write.

string value

Returns or sets the text of the specified object. Read/write.

top

Returns or sets the position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical alignment

> Returns or sets the vertical alignment of the object. Read/write.
>
> Can be one of the following:
>
> - **vertical alignment top**
> - **vertical alignment center**
> - **vertical alignment bottom**
> - **vertical alignment justify**
> - **vertical alignment distributed**
>
> The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

visible

> Specifies whether an object is visible or hidden. Use the *visible* property to control access to information without displaying it. For example, you could use the value of a control on a hidden form as the criterion for a query.

width

> Returns or sets an object's width, in points. Read/write

wrap auto text

> **True** if multiple lines of text are displayed in a text frame. The default value is **true**. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.
>
> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: validation

Plural

validations

Represents data validation for a worksheet range.

Use the *validation* property to return the **validation** object. This example changes data validation for cell E5.

```
set v1 to validation of range "E5"
modify v1 type validate list alert style valid alert stop ¬
        formula1 "=$A$1:$A$10"
```

To add data validation to a range and create a new **validation** object, use the **add data validation** command. The following example adds data validation to cell E5.

```
add data validation (validation of range "E5") ¬
        type validate whole number ¬
        alert style valid alert information ¬
        formula1 "5" formula2 "10"
set input title of validation of range "E5" to "Integers"
set error title of validation of range "E5" to "Integers"
set input message of validation of range "E5" to ¬
        "Enter an integer from five to ten"
set error message of validation of range "E5" to ¬
        "You must enter a number from five to ten"
```

Properties

IME mode

Returns or sets the description of the Japanese input rules. Read/write.

Can be one of the following:

IME mode no control	**IME mode katakana half**
IME mode on	**IME mode alpha full**
IME mode off	**IME mode alpha**
IME mode disable	**IME mode hangul full**
IME mode hiragana	**IME mode hangul**
IME mode katakana	

This property is available only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

alert style

Returns the validation alert style. Read-only.

Can be one of the following:

- **valid alert none**
- **valid alert stop**
- **valid alert warning**
- **valid alert information**

To set the alert style for a range, use the **add data validation** command. If the range already has data validation, use the **modify** command to change the alert style.

error message

Returns or sets the data validation error message. Read/write.

error title

Returns or sets the title of the data-validation error dialog box. Read/write.

formula1

Returns the value or expression associated with the conditional format or data validation. Can be a constant value, a string value, a cell reference, or a formula. Read-only.

formula2

Returns the value or expression associated with the second part of a conditional format or data validation. Used only when the *validation operator* property is **operator between** or **operator not between**. Can be a constant value, a string value, a cell reference, or a formula. Read-only.

ignore blank

True if blank values are permitted by the range data validation. Read/write.

If **true**, cell data is considered valid if the cell is blank, or if a cell referenced by either the *minimum value* or *maximum value* property is blank.

in cell dropdown

True if data validation displays a drop-down list that contains acceptable values. Read/write.

This property is ignored if the validation type isn't **validate list**.

input message

Returns or sets the data validation input message. Read/write.

input title

Returns or sets the title of the data-validation input dialog box. Read/write.

show error

True if the data validation error message will be displayed whenever the user enters invalid data. Read/write.

show input

True if the data validation input message will be displayed whenever the user selects a cell in the data validation range. Read/write.

validation operator

Returns the operator for the conditional format or data validation. Read-only.

Can be one of the following:

- **operator between**
- **operator not between**
- **operator equal**
- **operator not equal**
- **operator greater**
- **operator less**
- **operator great equal**
- **operator less equal**

validation type

> Returns the data validation type. Read-only.
>
> Can be one of the following:

- **validate input only**
- **validate whole number**
- **validate decimal**
- **validate list**
- **validated date**
- **validate time**
- **validate text length**
- **validate custom**

value

> **True** if all the validation criteria are met (that is, if the range contains valid data). Read-only.

Class: vertical page break

Plural

vertical page breaks

Represents a vertical page break.

Use **vertical page break** *index,* where *index* is the page break index number of the page break, to return a **vertical page break** object. The following example creates new vertical page breaks.

```
make new vertical page break at active sheet ¬
        with properties {location:range ("E5")}
make new vertical  page break at active sheet ¬
        with properties {location:range ("C10"), ¬
        extent:page break full, ¬
        vertical page break type:page break manual}
```

Properties

extent

> Returns the type of the specified page break: full-screen or only within a print area. Read-only.
>
> Can be one of the following:

- **page break full**
- **page break partial**

location

> Returns or sets the cell (a **range** object) that defines the page-break location. Horizontal page breaks are aligned with the top edge of the location cell; vertical page breaks are aligned with the left edge of the location cell. Read/write.

vertical page break type

> Returns or sets the type of vertical page break. Read/write

> Can be one of the following:

> - **page break automatic**
> - **page break manual**
> - **page break none**

Class: web options

Contains workbook-level attributes used by Excel when you save a document as a Web page or open a Web page.

You can return or set attributes either at the application (global) level or at the workbook level. (Note that attribute values can be different from one workbook to another, depending on the attribute value at the time the workbook was saved.) Workbook-level attribute settings override application-level attribute settings. Application-level attributes are contained in the **default web options** object.

Use the *web options* property to return the **web options** object. The following example checks to see whether PNG (Portable Network Graphics) is allowed as an image format and then sets the option accordingly.

```
set objWebOptions to web options of workbook 1
if allow png of objWebOptions is true then
    set strImageFileType to "PNG"
else
    set strImageFileType to "JPG"
end if
```

Properties

allow png

> **True** if PNG (Portable Network Graphics) is allowed as an image format when you save or publish a complete or partial presentation as a Web page. **False** if PNG is not allowed as an output format. The default value is **false**. Read/write.

> If you save images in the PNG format as opposed to any other file format, you might improve the image quality or reduce the size of those image files, and therefore decrease the download time, assuming that the Web browsers you are targeting support the PNG format.

encoding

Returns or sets the document encoding (code page or character set) to be used by the Web browser when you view the saved document. Read/write. The default is the **encoding Mac Roman**.

Can be one of the following:

encoding Thai
encoding Japanese ShiftJIS
encoding simplified Chinese
encoding Korean
encoding traditional Chinese
encoding little endian
encoding big endian
encoding central European
encoding Cyrillic
encoding Western
encoding Greek
encoding Turkish
encoding Hebrew
encoding Arabic
encoding Baltic
encoding Vietnamese
encoding auto detect
encoding Japanese auto detect
encoding simplified Chinese auto detect
encoding Korean auto detect
encoding traditional Chinese auto detect
encoding Cyrillic auto detect
encoding Greek auto detect
encoding Arabic auto detect
encoding ISO88591 Latin1
encoding ISO88592 central Europe
encoding ISO88593 Latin3
encoding ISO88594 Baltic
encoding ISO88595 Cyrillic
encoding ISO88596 Arabic
encoding ISO88597 Greek
encoding ISO88598 Hebrew
encoding ISO88599 Turkish
encoding ISO885915 Latin9
encoding ISO2022 Japanese no half width Katakana
encoding ISO2022 Japanese JISX02021984
encoding ISO2022 Japanese JISX02011989
encoding ISO2022KR
encoding ISO2022CN traditional Chinese
encoding ISO2022CN simplified Chinese
encoding Mac Roman
encoding Mac Japanese
encoding Mac traditional Chinese Big5
encoding Mac Korean
encoding Mac Greek1

encoding EBCDIC Greek
encoding EBCDIC Hebrew
encoding EBCDIC Korean extended
encoding EBCDIC Thai
encoding EBCDIC Icelandic
encoding EBCDIC Turkish
encoding EBCDIC Russian
encoding EBCDIC Serbian Bulgarian
encoding EBCDIC Japanese Katakana extended and Japanese
encoding EBCDIC US Canada and Japanese
encoding EBCDIC extended and Korean
encoding EBCDIC simplified Chinese extended and simplified Chinese
encoding EBCDIC US Canada and traditional Chinese
encoding EBCDIC Japanese Latin extended and Japanese
encoding OEM United States
encoding OEM Greek
encoding OEM Baltic
encoding OEM multilingual LatinI
encoding OEM multilingual LatinII
encoding OEM Cyrillic
encoding OEM Turkish
encoding OEM Portuguese
encoding OEM Icelandic
encoding OEM Hebrew
encoding OEM Canadian French
encoding OEM Arabic
encoding OEM Nordic
encoding OEM CyrillicII
encoding OEM modern Greek
encoding EUC Japanese
encoding EUC Chinese simplified Chinese
encoding EUC Korean
encoding EUC Taiwanese traditional Chinese
encoding Devanagari
encoding Bengali
encoding Tamil
encoding Telugu
encoding Assamese
encoding Oriya
encoding Kannada
encoding Malayalam

encoding Mac Cyrillic	encoding Gujarati
encoding Mac simplified Chinese GB2312	encoding Punjabi
encoding Mac Romania	encoding Arabic ASMO
encoding Mac Ukraine	encoding Arabic transparent ASMO
encoding Mac Latin2	encoding Korean Johab
encoding Mac Icelandic	encoding Taiwan CNS
encoding Mac Turkish	encoding Taiwan TCA
encoding Mac Croatia	encoding Taiwan Eten
encoding EBCDIC US Canada	encoding Taiwan IBM5550
encoding EBCDIC International	encoding Taiwan teletext
encoding EBCDIC multilingual	encoding Taiwan Wang
ROECE Latin2	encoding IA5 German
encoding EBCDIC Greek modern	encoding IA5 Swedish
encoding EBCDIC Turkish Latin5	encoding IA5 Norwegian
encoding EBCDIC Germany	encoding US ASCII
encoding EBCDIC Denmark Norway	encoding T61
encoding EBCDIC Finland Sweden	encoding ISO6937 nonspacing accent
encoding EBCDIC Italy	encoding Ext alpha lowercase
encoding EBCDIC Latin America Spain	encoding KOI8U
encoding EBCDIC United Kingdom	encoding Europa3
encoding EBCDIC Japanese	encoding HZGB simplified Chinese
Katakana extended	encoding UTF7
encoding EBCDIC France	encoding UTF8
encoding EBCDIC Arabic	

location of components

This property is not currently supported.

pixels per inch

Returns or sets the density (pixels per inch) of graphics images and table cells on a Web page. The range of settings is usually from 19 to 480, and common settings for popular screen sizes are 72, 96, and 120. The default setting is 96. Read/write.

This property determines the size of the images and cells on the specified Web page relative to the size of text whenever you view the saved document in a Web browser. The physical dimensions of the resulting image or cell are the result of the original dimensions (in inches) multiplied by the number of pixels per inch.

To set the optimum screen size for the targeted Web browsers, use the *screen size* property.

screen size

Returns or sets the ideal minimum screen size (width by height, in pixels) that you should use when viewing the saved document in a Web browser. Read/write.

Can be one of the following:

resolution544x376	**resolution1152x900**
resolution640x480	**resolution1280x1024**
resolution720x512	**resolution1600x1200**
resolution800x600	**resolution1800x1440**
resolution1024x768	**resolution1920x1200**
resolution1152x882	

The default value is **resolution800x600**.

use long file names

> **True** if long file names are used when you save the document as a Web page. **False** if long file names are not used and the MS-DOS file name format (8.3) is used. The default value is **true**. Read/write.

> If you don't use long file names and your document has supporting files, Excel automatically organizes those files in a separate folder.

web page keywords

> Returns or sets keywords for the worksheet when it is saved as a Web page. Read/write.

> Keywords are not visible in Web browsers, but are stored in meta tags to facilitate page searches.

web page title

> Returns or sets the title of a worksheet when it is saved as a Web page. Read/write.

Class: window

Plural

windows

Represents a window. Many worksheet characteristics, such as scroll bars and gridlines, are actually properties of the window.

Use **window** *index*, where *index* is the window name or index number, to return a single **window** object. The following example maximizes window 1.

```
set window state of window 1 to window state maximized
```

Note that the active window is always `Window 1`.

The window caption is the text shown in the title bar at the top of the window when the window isn't maximized. The caption is also shown in the list of open files on the bottom of the **Windows** menu. To set or return the window caption, use the *caption* property . Changing the window caption doesn't change the name of the workbook. The following example turns off cell gridlines for the worksheet shown in the book1.xls:1 window.

```
set display gridlines of window "book.xls:1" to false
```

Properties

active cell

> Returns a **range** object that represents the active cell in the active window (the window on top) or in the specified window. If the window isn't displaying a worksheet, this property fails. Read-only.

> If you don't specify an object qualifier, this property returns the active cell in the active window.

> Be careful to distinguish between the active cell and the selection. The active cell is a single cell inside the current selection. The selection may contain more than one cell, but only one is the active cell.

> The following expressions all return the active cell, and are all equivalent.

> ```
> active cell
> ```

> ```
> active cell of active window
> ```

active chart

Returns a **chart** object that represents the active chart (either an embedded chart or a chart sheet). An embedded chart is considered active when it's either selected or activated. When no chart is active, this property returns an incorrect response. Read-only.

If you don't specify an object qualifier, this property returns the active chart in the active workbook.

active pane

Returns a **pane** object that represents the active pane in the window. Read-only.

This property can be used only on worksheets and macro sheets. You must use the *entry index* property to obtain the index of the active pane.

active sheet

Returns an object that represents the active sheet (the sheet on top) in the active workbook or in the specified window or workbook. Returns an incorrect response if no sheet is active. Read-only.

If you don't specify an object qualifier, this property returns the active sheet in the active workbook.

If a workbook appears in more than one window, the *active sheet* property may be different in different windows.

caption

The name that appears in the title bar of the document window. Read/write.

display formulas

True if the window is displaying formulas; **false** if the window is displaying values. Read/write.

This property applies only to worksheets and macro sheets.

display gridlines

True if gridlines are displayed. Read/write.

This property applies only to worksheets and macro sheets.

This property affects only displayed gridlines. To control the printing of gridlines, use the *print gridlines* property.

display headings

True if both row and column headings are displayed; **false** if no headings are displayed. Read/write.

This property applies only to worksheets and macro sheets.

This property affects only displayed headings. To control the printing of headings, use the *print gridlines* property.

display horizontal scroll bar

True if the horizontal scroll bar is displayed. Read/write.

display outline

> **True** if outline symbols are displayed. Read/write.

> This property applies only to worksheets and macro sheets.

display vertical scroll bar

> **True** if the vertical scroll bar is displayed. Read/write.

display workbook tabs

> **True** if the workbook tabs are displayed. Read/write.

display zeros

> **True** if zero values are displayed. Read/write.

> This property applies only to worksheets and macro sheets.

enable resize

> **True** if the window can be resized. Read/write.

entry index

> Returns the index of this item in the element list of windows. Read-only.

freeze panes

> **True** if split panes are frozen. Read/write.

> It's possible for *freeze panes* to be **true** and *split* to be **false**, or vice versa.

> This property applies only to worksheets and macro sheets.

gridline color

> Returns or sets the gridline color as an RGB value. Read/write.

gridline color index

> Returns or sets the gridline color as an index into the current color palette, or as one of the following constants:

> - **color index automatic**
> - **color index none**
> - **a color index integer**

> Read/write.

> The following illustration shows the color-index values in the default color palette.

height

Returns or sets the height (in points) of the window. To determine the maximum size for the window, use the *usable height* property. You cannot set this property if the window is maximized or minimized. To determine the window state, use the *window state* property.

left position

Returns or sets the distance (in points) from the left edge of the client area to the left edge of the window. Read/write.

range selection

Returns a **range** object that represents the selected cells on the worksheet in the specified window even if a graphic object is active or selected on the worksheet. Read-only.

When a graphic object is selected on a worksheet, the *selection* property returns the graphic object instead of a **range** object; the *range selection* property returns the range of cells that was selected before the graphic object was selected.

This property and the *selection* property return identical values when a range (not a graphic object) is selected on the worksheet.

If the active sheet in the specified window is not a worksheet, this property fails.

scroll column

Returns or sets the number of the leftmost column in the pane or window. Read/write.

If the window is split, the *scroll column* property of the **window** object refers to the upper-left pane. If the panes are frozen, the *scroll column* property of the **window** object excludes the frozen areas.

scroll row

Returns or sets the number of the row that appears at the top of the pane or window. Read/write.

If the window is split, the *scroll row* property of the **window** object refers to the upper-left pane. If the panes are frozen, the *scroll row* property of the **window** object excludes the frozen areas.

selected sheets

Returns a list of **sheet** objects that represents all of the selected sheets in the specified window. Read-only.

selection

Returns the selected object in the specified window. Read-only.

The returned object type depends on the current selection (for example, if a cell is selected, this property returns a **range** object). The *selection* property returns **missing value** if there is no selection.

split

True if the window is split. Read/write.

It's possible for *freeze panes* to be **true** and *split* to be **false**, or vice versa.

This property applies only to worksheets and macro sheets.

split column

Returns or sets the column number where the window is split into panes (the number of columns to the left of the split line). Read/write.

split horizontal

Returns or sets the location (in points) of the horizontal window split. Read/write.

split row

Returns or sets the row number where the window is split into panes (the number of rows above the split). Read/write.

split vertical

Returns or sets the location (in points) of the vertical window split. Read/write.

tab ratio

Returns or sets the ratio of the width of the workbook's tab area to the width of the window's horizontal scroll bar (as a number between 0 (zero) and 1; the default value is 0.75. Read/write.

This property has no effect when *display workbook tabs* is set to **false** (its value is retained, but it has no effect on the display).

top

Returns or sets the distance (in points) from the top edge of the window to the top edge of the usable area (below the menus, any toolbars docked at the top, and the formula bar). Read/write

You cannot set this property for a maximized window. To return or set the state of the window, use the *window state* property.

usable height

Returns the maximum height (in points) of the space that a window can occupy in the application window area. Read-only.

usable width

Returns the maximum width (in points) of the space that a window can occupy in the application window area. Read-only.

view

Returns or sets the view showing in the window. Read/write.

Can be one of the following:

- **normal view**
- **page break preview**
- **page layout view**

visible

True if the window is visible. Read/write.

visible range

> Returns a **range** object that represents the range of cells that are visible in the window or pane. If a column or row is partially visible, it's included in the range. Read-only.

width

> Returns or sets an object's width, in points. Read/write.

> To determine the maximum size for the window, use the *usable width* property.

> You cannot set this property if the window is maximized or minimized. To determine the window state, use the *window state* property.

window number

> Returns the window number. For example, a window named "Book1.xls:2" has 2 as its window number. Most windows have the window number 1. Read-only.

> The window number isn't the same as the window index (the return value of the *entry index* property), which is the position of the window within the list of **window** objects.

window state

> This property is not currently supported.

window type

> Returns or sets the window type. Read/write.

> Can be one of the following:

> - **window type chart as window**
> - **window type chart in place**
> - **window type clipboard**
> - **window type info**
> - **window type workbook**

zoom

> Returns or sets the display size of the window, as a percentage (100 equals normal size, 200 equals double size, and so on). Read/write.

> This function affects only the sheet that's currently active in the window. To use this property on other sheets, you must first activate them.

Class: workbook

Plural
workbooks

Represents an Excel workbook.

Use **workbook** *index*, where *index* is the workbook name or index number, to return a single **workbook** object. The following example activates workbook 1. The application must be active for this command to be successful.

```
activate object workbook 1
```

The following example closes all open workbooks without prompting the user to save.

```
close every workbook saving no
```

The index number denotes the order in which the workbooks were opened or created. `workbook 1` is the first workbook opened or created, and `workbook (get count of workbooks)` is the last one opened or created. Activating a workbook doesn't change its index number. All workbooks are included in the index count, even if they're hidden.

The *name* property returns the workbook name. You cannot set the name by using this property; to change the name, use the **save workbook as** command to save the workbook under a different name. The following example activates Sheet1 in the workbook named "cogs.xls" (the workbook must already be open in Excel).

```
activate object worksheet 1 of workbook "cogs.xls"
```

To return the workbook that's currently active, use the **active workbook** command. The following example sets the active workbook to read-only status:

```
set read only of active workbook to true
```

Properties

accept labels in formulas

> **True** if labels can be used in worksheet formulas. The default value is **true**. Read/write.

active chart

> Returns a **chart** object that represents the active chart (either an embedded chart or a chart sheet). An embedded chart is considered active when it's either selected or activated. When no chart is active, this property returns an incorrect result. Read-only.

> If you don't specify an object qualifier, this property returns the active chart in the active workbook.

active sheet

> Returns an object that represents the active sheet (the sheet on top) in the active workbook or in the specified window or workbook. Returns an incorrect result if no sheet is active. Read-only.

> If you don't specify an object qualifier, this property returns the active sheet in the active workbook.

> If a workbook appears in more than one window, the *active sheet* property may be different in different windows.

auto update frequency

> Returns or sets the number of minutes between automatic updates to the shared workbook. If this property is set to zero (0), updates occur only when the workbook is saved. Read/write.

auto update save changes

> **True** if current changes to the shared workbook are posted to other users whenever the workbook is automatically updated. **False** if changes aren't posted (this workbook is still synchronized with changes made by other users). The default value is **true**. Read/write.

> The *auto update frequency* property must be set to a value from 5 to 1440 for this property to take effect.

calculation version

> Returns a number whose rightmost four digits are the minor calculation engine version number, and whose other digits (on the left) are the major version of Excel. For a **workbook** object, this property returns the information about the version of Excel that the workbook was last fully recalculated by. Read-only.

> If the workbook was saved in an earlier version of Excel and if the workbook hasn't been fully recalculated, then this property returns 0.

change history duration

> Returns or sets the number of days shown in the change history of the shared workbook. Read/write.

> Any changes in the change history older than the setting for this property are removed when the workbook is closed.

conflict resolution

> Returns or sets the way conflicts are to be resolved whenever a shared workbook is updated. Read/write.

> Can be one of the following.

Constant	Description
local session changes	The local user's changes are always accepted.
other session changes	The local user's changes are always rejected.
user resolution	A dialog box asks the user to resolve the conflict.

create backup

> **True** if a backup file is created when this file is saved. Read-only.

date 1904

> **True** if the workbook uses the 1904 date system. Read/write.

display drawing objects

> Returns or sets how shapes are displayed. Read/write.

> Can be one of the following.

Constant	Description
display shapes	Show all shapes.
placeholders	Show only placeholders.
hide	Hide all shapes.

file format

Returns the file format and/or type of the workbook. Read-only.

The following formats are available only in the Japanese version of Excel: **WJ2WD1 file format**, **Excel 2 east asian file format**, and **works 2 east asian file format**.

Can be set to any of the following:

add in file format	**template file format**
CSV file format	**current platform text file format**
CSV Mac file format	**text Mac file format**
CSV MSDos file format	**text MSDos file format**
CSV Windows file format	**text printer file format**
DBF2 file format	**text windows file format**
DBF3 file format	**WJ2WD1 file format**
DBF4 file format	**Works1 file format**
DIF file format	**Works 1 all file format**
Excel2 file format	**Works 1 fmt file format**
Excel 2 east asian file format	**Works3 file format**
Excel3 file format	**Works 3 fm 3 file format**
Excel4 file format	**Works4 file format**
Excel 4 workbook file format	**works file format**
Excel7 file format	**works 2 east asian file format**
Excel 9795 file format	**WQ1 file format**
international add in file format	**WJ3 file format**
international macro file format	**WJ3FJ3 file format**
workbook normal file format	**HTML file format**
SYLK file format	**XML spreadsheet file format**

full name

Returns the name of the object, including its path on disk, as a string. Read-only.

This property is equivalent to the *path* property, followed by the current file system separator, followed by the *name* property.

has password

True if the workbook has a protection password. Read-only.

You can assign a protection password to a workbook by using the **save workbook as** command.

highlight changes on screen

True if changes to the shared workbook are highlighted on-screen. Read/write.

is add in

True if the workbook is running as an add-in. Read/write.

When you set this property to **true**, the workbook has the following characteristics:

- You won't be prompted to save the workbook if changes are made while the workbook is open.

- The workbook window won't be visible.

- Any Visual Basic macros in the workbook won't be visible in the **Macro** dialog box (displayed by pointing to **Macro** on the **Tools** menu, and then clicking **Macros**).

- VB macros in the workbook can still be run from the **Macro** dialog box even though they're not visible. In addition, VB macro names don't need to be qualified with the workbook name.

- Holding down the SHIFT key when you open the workbook has no effect.

keep change history

True if change tracking is enabled for the shared workbook. Read/write.

list changes on new sheet

True if changes to the shared workbook are shown on a separate worksheet. Read/write.

multi user editing

True if the workbook is open as a shared list. Read-only.

To save a workbook as a shared workbook, use the **save workbook as** command. To switch the workbook from shared mode to exclusive mode, use the **exclusive access** command.

name

Returns or sets the name of the object. The name of a **range** object is a **name** object. For every other type of object, the name is a string.

password

Returns or sets the password that must be supplied to open the specified workbook. Read/write.

path

Returns the complete path of the workbook's container (folder), excluding the final separator (":"). Read-only.

personal view list settings

True if filter and sort settings for lists are included in the user's personal view of the shared workbook. Read/write.

personal view print settings

True if print settings are included in the user's personal view of the shared workbook. Read-write.

precision as displayed

> **True** if calculations in this workbook will be done using only the precision of the numbers as they're displayed. Read/write.

protect structure

> **True** if the order of the sheets in the workbook is protected. Read-only.

protect windows

> **True** if the windows of the workbook are protected. Read-only.

read only

> **True** if the workbook has been opened as read-only. Read-only.

read only recommended

> **True** if the workbook was saved as read-only recommended. Read-only.

> When you open a workbook that was saved as read-only recommended, Excel displays a message recommending that you open the workbook as read-only.

> Use the **save workbook as** command to change this property.

remove personal information

> **True** if personal information can be removed from the specified workbook. The default value is **false**. Read/write.

revision number

> Returns the number of times the workbook has been saved while open as a shared workbook. If the workbook is open in exclusive mode, this property returns 0 (zero). Read-only.

> The *revision number* property is updated only when the local copy of the workbook is saved, not when remote copies are saved.

save link values

> **True** if Excel saves external link values with the workbook. Read/write.

saved

> **True** if no changes have been made to the specified workbook since it was last saved. Read/write.

> If a workbook has never been saved, its *path* property returns an empty string ("").

> You can set this property to **true** if you want to close a modified workbook without either saving it or being prompted to save it.

show conflict history

> **True** if the Conflict History worksheet is visible in the workbook that's open as a shared workbook. Read/write.

> If the specified workbook isn't open as a shared workbook, this property fails. To determine whether a workbook is open as a shared workbook, use the *multi user editing* property.

template remove external data

> **True** if external data references are removed when the workbook is saved as a template. Read/write.

update remote references

> **True** if Excel updates remote references in the workbook. Read/write.

user status

> Returns a 1-based, two-dimensional list that provides information about each user who has the workbook open as a shared list. The first element of the second dimension is the name of the user, the second element is the date and time when the user last opened the workbook, and the third element is a number indicating the type of list (1 indicates exclusive; 2 indicates shared). Read-only.

> The *user status* property doesn't return information about users who have the specified workbook open as read-only.

web options

> Returns the **web options** object, which contains workbook-level attributes used by Excel when you save a document as a Web page or open a Web page. Read-only.

workbook comments

> Returns or sets the comment string for this workbook. Read/write.

write password

> Returns or sets a string for the write password of the workbook. Read/write.

write reserved

> **True** if the workbook is write-reserved. Read-only.

> Use the **write reservation password** argument of the **save workbook as** command to set this property.

write reserved by

> Returns the name of the user who currently has write permission for the workbook. Read-only.

Class: worksheet

Plural
worksheets

Represents a worksheet.

Use **worksheet** *index*, where *index* is the worksheet index number or name to return a single **worksheet** object. The following example hides worksheet one in the active workbook.

```
set visible of worksheet 1 to false
```

The worksheet index number denotes the position of the worksheet on the tab bar of the workbook. `worksheet 1` is the first (leftmost) worksheet in the workbook, and `worksheet (get count of worksheets)` is the last one. All worksheets are included in the index count, even if they're hidden.

The worksheet name is shown on the tab for the worksheet. To set or return the worksheet name, use the *name* property. The following example protects the scenarios on Sheet1.

```
protect worksheet sheet "Sheet1" password "drowssap" with scenarios
```

When a worksheet is the active sheet, you can use the *active sheet* property to refer to it. The following example uses the **activate** command to activate Sheet 1, sets the page orientation to landscape mode, and then prints the worksheet.

```
activate object worksheet "Sheet1"
```

```
set page orientation of page setup object of active sheet to landscape
```

```
print out active sheet
```

Properties

<Inheritance> **sheet**

Inherits the properties and elements of the **sheet** class.

enable selection

Returns or sets what can be selected on the sheet. This property takes effect only when the worksheet is protected. Read/write.

Can be one of the following.

Constant	Description
no selection	Prevents any selection on the sheet.
unlocked cells	Allows only those cells whose *locked* property is **false** to be selected.
no restrictions	Allows any cell to be selected.

protect scenarios

True if the worksheet scenarios are protected. Read-only.

Microsoft Excel Suite Commands

Command: accept all changes

Accepts all changes in the specified shared workbook.

Syntax

accept all changes   workbook   Required. An expression that returns a **workbook** object.

Example

This example accepts all changes in the active workbook.

```
accept all changes active workbook
```

Command: activate next

Activates the current window, sends it to the back of the window z-order, then activates the next window according to the z-order.

Syntax

activate next   window   Required. An expression that returns a **window** object.

Example

This example sends the active window to the back of the z-order. The application must be activated for this example to run successfully.

```
activate next active window
```

Command: `activate object`

Activates the object.

Syntax

activate   window/sheet/workbook/pane   Required. An expression that returns a **window**, **sheet**, **workbook**, or **pane** object.

Example

This example activates Sheet1.

```
activate object worksheet "Sheet1"
```

This example selects cells A1:C3 on Sheet1 and then makes cell B2 the active cell.

```
activate object worksheet "Sheet1"

select range "A1:C3" of active sheet

activate object range "B2"
```

This example activates Book4.xls. If Book4.xls has multiple windows, the example activates the first window, Book4.xls:1. The application must be activated for this example to run successfully.

```
activate object workbook "Book4.xls"
```

Command: `activate previous`

Activates the specified window and then activates the window at the back of the window z-order.

Syntax

activate previous   window   Required. An expression that returns a **window** object.

Example

This example activates the window at the back of the z-order. The application must be activated for this example to run successfully.

```
activate previous active window
```

Command: `add chart autoformat`

Adds a custom chart AutoFormat to the list of available chart AutoFormats.

Syntax

add chart autoformat

  chart   chart   Required. A chart that contains the format that will be applied when the new chart AutoFormat is applied.

  name   Unicode text   Required. The name of the AutoFormat.

  [**description**   Unicode text]   Optional. A description of the custom AutoFormat.

Example

This example adds a new AutoFormat based on Chart1.

```
add chart autoformat chart active chart name "Presentation Chart"
```

Command: add custom list

Adds a custom list for custom autofill and/or custom sort.

Syntax

add custom list

list array   range object/A1-style range reference/named range/list of strings   Required. Specifies the source data, as either a list of strings or a **range** object.

[**by row**   Boolean]   Optional. Used only if **list array** is a **range** object. **True** to create a custom list from each row in the range. **False** to create a custom list from each column in the range. If this argument is omitted and there are more rows than columns (or an equal number of rows and columns) in the range, Excel creates a custom list from each column in the range. If this argument is omitted and there are more columns than rows in the range, Excel creates a custom list from each row in the range.

If the list you're trying to add already exists, this command does nothing.

Example

This example adds a list of strings as a custom list.

```
add custom list list array {"cogs","sprockets","widgets","gizmos"}
```

Command: add data validation

Adds data validation to the specified range.

Syntax

add data validation   validation   Required. An expression that returns a **validation** object.

type   enumeration   Required. The validation type. Can be one of the following:

- **validate input only**
- **validate whole number**
- **validate decimal**
- **validate list**
- **validate date**
- **validate time**
- **validate text length**
- **validate custom**

[**alert style** enumeration] Optional. The validation alert style. Can be one of the following: **valid alert none**, **valid alert stop**, **valid alert warning**, **valid alert information**

[**operator** enumeration] Optional. The data validation operator. Can be one of the following:

- **operator between**
- **operator no between**
- **operator equal**
- **operator not equal**
- **operator greater**
- **operator less**
- **operator greater equal**
- **operator less equal**

[**formula1** Unicode text] Optional. The first part of the data validation equation.

[**formula2** Unicode text] Optional. The second part of the data validation when **operator** is **operator between** or **operator not between** (otherwise, this argument is ignored).

Example

This example adds data validation to cell A1.

```
add data validation (validation of range "E5") ¬
        type validate whole number alert style valid alert information ¬
        formula1 "5" formula2 "10"
set input title of validation of range "E5" to "Integers"
set error title of validation of range "E5" to "Integers"
set input message of validation of range "E5" to ¬
        "Enter an integer from five to ten"
set error message of validation of range "E5" to ¬
        "You must enter a number from five to ten"
```

Command: add fields to pivot table

Adds row, column, and page fields to a PivotTable.

Syntax

add fields to pivot table pivot table Required. An expression that returns a **pivot table** object.

[**row fields** list] Optional. Specifies a pivot field name (or a list of pivot field names) to be added as rows.

[**column fields** list] Optional. Specifies a pivot field name (or a list of pivot field names) to be added as columns.

[**page fields** list] Optional. Specifies a pivot field name (or a list of pivot field names) to be added as pages.

[**add to table** Boolean] Optional. **True** to add the fields to the PivotTable (none of the existing fields are replaced). **False** to replace existing fields with the new fields. The default value is **false**.

You must specify one of the field arguments.

Example

This example replaces the existing column fields in PivotTable one on Sheet1 with the Status and Closed_By fields.

```
add fields to pivot table pivot table 1 of worksheet "Sheet1" ¬
        column fields {"Status","Closed By"}
```

Command: add item to list

Adds an item to a list box or a dropdown list.

Syntax

add item to list listbox/dropdown Required. An expression that returns a **listbox** or **dropdown** object.

  item text Unicode text Required. The text to be added.

[**entry index** integer] Optional. The position of the new entry. If the list has fewer entries than the specified index, blank items from the end of the list are added to the specified position. If this argument is omitted, the item is appended to the existing list.

Using this command clears any range specified by the *list fill range* property.

Example

This example creates a list box and fills it with integers from 1 to 10.

```
set lb to make new listbox at worksheet 1 with properties ¬
        {top:100,left position:10, width:100, height:100}
repeat with x from 1 to 10
        add item to list lb item text (x as string)
end repeat
```

Command: add to favorites

Adds a shortcut to the workbook or hyperlink to the Favorites folder.

Syntax

add to favorites workbook/hyperlink Required. An expression that returns a **workbook** or **hyperlink** object.

Example

This example adds a shortcut to the active workbook to the Favorites folder.

```
add to favorites active workbook
```

Command: `auto show`

Displays the number of top or bottom items for a PivotTable row, page, or column field.

Syntax

auto show   pivot field   Required. An expression that returns a **pivot field** object.

 type   enumeration   Required. To cause the PivotTable to show the items that match the specified criteria, use **type_automatic**. To disable this feature, use **type_manual**.

 range   enumeration   Required. The location at which to start showing items. Can be **position top** or **position bottom**.

 count   integer   Required. The number of items to be shown.

 field   Unicode text   Required. The name of the base data field.

Example

This example shows only the top two companies, based on the sum of sales:

```
auto show pivot field "Company" of pivot table "Pivot1" ¬
        of active sheet type type_automatic range position top ¬
        count 2 field "Sum of Sales"
```

Command: `auto sort`

Establishes automatic PivotTable field-sorting rules.

Syntax

auto sort   pivot field   Required. An expression that returns a **pivot field** object.

 sort order   enumeration   Required. The sort order. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort manual** to disable automatic sorting.

 sort field   Unicode text   Required. The name of the sort key field.

Example

This example sorts the Company field in descending order, based on the sum of sales.

```
auto sort pivot field "Company" of pivot table 1 ¬
        of active sheet sort order sort descending ¬
        sort field "Sum of Sales"
```

Command: `break link`

Converts formulas linked to other Excel sources or OLE sources to values.

Syntax

break link   workbook   Required. An expression that returns a **workbook** object.

  name   Unicode text   Required. Specifies the name of the link.

  type   enumeration   Required. Specifies the type of link. Can be **link type Excel links** or **link type OLE links**.

Example

In this example, Excel converts all of the links (Excel link type) to a workbook named "Source.xls" from the active workbook. This example assumes at least one formula exists in the active workbook that links to the workbook "Source.xls."

```
break link active workbook name "Source.xls" ¬
        type link type Excel links
```

Command: `bring to front`

Brings the object to the front of the z-order.

Syntax

bring to front   button/checkbox/option button/scrollbar/listbox/groupbox/dropdown/spinner/label/textbox   Required. An expression that returns one of the listed objects.

Example

This example brings button 1 on Sheet1 to the front of the z-order.

```
bring to front button 1 of sheet "Sheet1"
```

Command: `calculate`

Calculates all open workbooks or a specific worksheet in a workbook.

Syntax

calculate   worksheet   Required. An expression that returns a **worksheet** object.

Example

This example calculates all the formulas in all open workbooks

```
calculate
```

This example calculates all the formulas in Sheet1.

```
calculate sheet "Sheet1"
```

Command: `calculate full`

Forces a full calculation of the data in all open workbooks.

Syntax

calculate full

Example

This example compares the version of Excel with the version of Excel that the workbook was last calculated in. If the two version numbers are different, a full calculation of the data in all open workbooks is performed.

```
if calculation version of application "Microsoft Excel" is not equal to ¬
        calculation version of workbook 1 then
    calculate full
end if
```

Command: `cancel refresh`

Cancels all background queries for the specified query table. To determine whether a background query is currently in progress, use the *refreshing* property of the **query table** object.

Syntax

cancel refresh   query table   Required. An expression that returns a **query table** object.

Example

This example cancels a query table refresh operation.

```
if refreshing of query table 1 of sheet 1 then
        cancel refresh query table 1 of sheet 1
end if
```

Command: `centimeters to points`

Converts a measurement from centimeters to points (one point equals 0.035 centimeters).

Syntax

centimeters to points

  centimeters   real   Required. Specifies the centimeter value to be converted to points.

Example

This example sets the left margin of Sheet1 to 5 centimeters.

```
set left margin of page setup object of worksheet "Sheet1" to ¬
        (centimeters to points centimeters 5)
```

Command: change data type of list column

Sets the data type formatting for a list column.

Syntax

change data type of list column   list column   Required. An expression that returns a **list column** object.

[**data type**   enumeration]   Optional. Specifies the data type to be used in the column. Can be one of the following: **no data type**, **whole number data**, **decimal data**, **list data**, **date data**, **time data**, **text data**, **currency data**, **calculated data**, or **counter data**.

[**decimal places**   integer]   Optional. Used for data types that can have fixed decimal places (**currency data**, **decimal data**, or **whole number data**), an integer specifying the number of decimal places to use.

[**currency symbol**   Unicode text]   Optional. Used for data types that can represent currency (**currency data**, **decimal data**, or **whole number data**), a string specifying the monetary symbol to use.

[**date or time format**   Unicode text]   Optional. A string containing the kind of date or time format to be used. If known, the index of the format can also be used.

[**formula**   Unicode text]   Optional. Used when **calculated data** or **list data** is specified as the data type, a string containing a formula or a list of items to be used in the column.

Example

This example labels the sixth column of a list object "Date Ordered", sets a date format for its data type, and does not require that unique values be entered in the column.

```
set name of list column 6 of list object "RecentOrders" ¬
        of active sheet to "Date Ordered"
change data type of list column list column 6 ¬
        of list object "RecentOrders" of active sheet ¬
        data type date data
change data type of list column list column 6 ¬
        of list object "RecentOrders" of active sheet ¬
        date or time format "m/d/yy"
set unique of list column 6 of list object "RecentOrders" ¬
        of active sheet to false
```

Command: `change file access`

Changes the access permissions for the workbook. This may require an updated version to be loaded from the disk.

Syntax

change file access   workbook   Required. An expression that returns a **workbook** object.

[**mode**   enumeration]   Optional. Specifies the new access mode. Can be **read write** or **read only**.

[**write password**   Unicode text]   Optional. Specifies the write-reserved password if the file is write reserved and **mode** is **read write**. Ignored if there's no password for the file or if **mode** is **read only**.

[**notify**   Boolean]   Optional. **True** (or omitted) to notify the user if the file cannot be immediately accessed.

Remarks

If you have a file open in read-only mode, you don't have exclusive access to the file. If you change a file from read-only to read/write, Excel must load a new copy of the file to ensure that no changes were made while you had the file open as read-only.

Example

This example sets the active workbook to read-only.

```
change file access active workbook mode read only
```

Command: `change link`

Changes a link from one document to another.

Syntax

change link   workbook   Required. An expression that returns a **workbook** object.

name   Unicode text   Required. The name of the Excel or OLE link to be changed, as it was returned from the **link sources** command.

new name   Unicode text   Required. The new name of the link.

[**type**   enumeration]   Optional. The link type. Can be **link type Excel links** or **link type OLE links**. The default value is **link type Excel links**.

Example

This example changes an Excel link.

```
change link active workbook name "Source_Old.xls" ¬
        new name "Source_New.xls"
```

Command: `change scenario`

Changes the scenario to have a new set of changing cells and (optionally) scenario values.

Syntax

change scenario scenario Required. An expression that returns a **scenario** object.

  changing cells range Required. A **range** object that specifies the new set of changing cells for the scenario. Can be a range, an A1-style range reference, a named range, or a list of category names. The changing cells must be on the same sheet as the scenario.

  [**values** list] Optional. A list that contains the new scenario values for the changing cells. If this argument is omitted, the scenario values are assumed to be the current values in the changing cells.

Remarks

If you specify **values**, the list must contain an element for each cell in the **changing cells** range; otherwise, Excel generates an error.

Example

This example sets the changing cells for scenario one to the range A1:A10 on Sheet1.

```
change scenario scenario 1 of worksheet "Sheet1" changing cells ¬
        range "A1:A10" of worksheet "Sheet1"
```

Command: `check spelling`

Checks the spelling of an object. This form has no return value; Excel displays the **Spelling** dialog box.

Syntax

check spelling sheet/button/checkbox/option button/groupbox/label/textbox Required. An expression that returns one of the listed objects.

  [**custom dictionary** Unicode text] Optional. A string that indicates the file name of the custom dictionary to examine if the word isn't found in the main dictionary. If this argument is omitted, the currently specified dictionary is used.

  [**ignore uppercase** Boolean] Optional. **True** to have Excel ignore words that are all uppercase. **False** to have Excel check words that are all uppercase. If this argument is omitted, the current setting will be used.

  [**always suggest** Boolean] Optional. **True** to have Excel display a list of suggested alternate spellings when an incorrect spelling is found. **False** to have Excel wait for you to input the correct spelling. If this argument is omitted, the current setting will be used.

Remarks

To check headers, footers, and objects on a worksheet, use this command on a **worksheet** object.

To check only cells and notes, use this command with the **cell** object.

Example

This example checks the spelling on Sheet1.

```
check spelling sheet "Sheet1"
```

Command: check spelling for

Checks the spelling of a single word. Returns **true** if the word is found in one of the dictionaries, **false** if it isn't.

Syntax

check spelling for

   text to check   Unicode text   Required. The word you want to check.

   [**custom dictionary**   Unicode text]   Optional. A string that indicates the file name of the custom
      dictionary to examine if the word isn't found in the main dictionary. If this argument is
      omitted, the currently specified dictionary is used.

   [**ignore uppercase**   Boolean]   Optional. **True** to have Excel ignore words that are all uppercase. **False** to have
      Excel check words that are all uppercase. If this argument is omitted, the current setting will be used.

Example

This example checks the spelling of a single word.

```
set formula of cell "A1" to check spelling for ¬
        text to check "exampel" as string
```

Command: circle invalid

Circles invalid entries on the worksheet.

Syntax

circle invalid   sheet   Required. An expression that returns a **sheet** object.

Example

This example circles invalid entries on worksheet one.

```
circle invalid sheet 1
```

Command: `clear arrows`

Clears the tracer arrows from the worksheet. Tracer arrows are added by using the auditing feature.

Syntax

clear arrows   sheet   Required. An expression that returns a **sheet** object.

Example

This example clears tracer arrows from Sheet1.

```
clear arrows sheet "Sheet1"
```

Command: `clear circles`

Clears circles from invalid entries on the worksheet.

Syntax

clear circles   sheet   Required. An expression that returns a **sheet** object.

Remarks

To circle cells that contain invalid data, use the **circle invalid** command.

Example

This example clears circles from invalid entries on worksheet one.

```
clear circles sheet 1
```

Command: `clear contents`

Clears all the data, formatting, and formulas from a list object.

Syntax

clear contents   list object   Required. An expression that returns a **list object** object.

Example

This example clears the data, formatting, and formulas from list object 1 in worksheet 1.

```
clear contents list object 1 of worksheet 1
```

Command: `convert formula`

Converts cell references in a formula between the A1 and R1C1 reference styles between relative and absolute references, or both.

Syntax

convert formula

formula to convert Unicode text Required. A string that contains the formula you want to convert. This must be a valid formula, and it must begin with an equal sign.

from reference style enumeration Required. The reference style of the formula. Can be **A1** or **R1C1**.

[**to reference style** enumeration] Optional. The reference style you want returned. Can be **A1** or **R1C1**. If this argument is omitted, the reference style isn't changed; the formula stays in the style specified by **from reference style**.

[**to absolute** enumeration] Optional. Specifies the converted reference type. Can be **A1** or **R1C1**. If this argument is omitted, the reference type isn't changed.

[**relative to** range] Optional. A **range** object that contains one cell. Relative references relate to this cell. Can be a range, an A1-style range reference, a named range, or a list of category names.

Example

This example converts a SUM formula that contains R1C1-style references to an equivalent formula that contains A1-style references, and then it displays the result.

```
set inputFormula to "=SUM(R10C2:R15C2)"
display dialog (convert formula formula to convert inputFormula ¬
        from reference style R1C1 to reference style A1)
```

Command: `convert to range`

Converts a list object to a normal Excel range.

Syntax

convert to range list object Required. An expression that returns a **list object** object.

Example

This example converts the second list object on worksheet 1 to a normal Excel range.

```
convert to range list object 2 of sheet 1
```

Command: `copy object`

This command is not currently supported.

Command: `copy picture`

This command is not currently supported.

Command: `copy worksheet`

Copies the sheet to another location in the workbook.

Syntax

copy worksheet sheet Required. An expression that returns a **sheet** object.

[**before** sheet] Optional. The sheet before which the copied sheet will be placed. You cannot specify **before** if you specify **after**.

[**after** sheet] Optional. The sheet after which the copied sheet will be placed. You cannot specify **after** if you specify **before**.

Remarks

If you don't specify either **before** or **after**, Excel creates a new workbook that contains the copied sheet.

Example

This example copies Sheet1, placing the copy after Sheet3.

```
copy worksheet sheet "Sheet1" after sheet "Sheet3"
```

Command: `create new document`

Creates a new document linked to the specified hyperlink.

Syntax

create new document hyperlink An expression that returns a **hyperlink** object.

file name Unicode text. Required. The file name of the specified document.

edit now Boolean Required. **True** to have the specified document open immediately in its associated editing environment.. The default value is **true**.

overwrite Boolean Required. **True** to overwrite any existing file of the same name in the same folder. **False** if any existing file of the same name is preserved and the **file name** argument specifies a new file name. The default value is **false**.

Example

This example creates a new document based on the new hyperlink in the first worksheet and then loads the document into Excel for editing. The document is named "Report.xls," and it overwrites any file of the same name in the Server:Annual folder.

```
Set h2 to make new hyperlink of range "A10" at active sheet ¬
        with properties {address: "Server:Annual:Report.xls"}
create new document h2 file name "Server:Annual:Report.xls" ¬
        with edit now with overwrite
```

Command: create summary for scenarios

Creates a new worksheet that contains a summary report for the scenarios on the specified worksheet.

Syntax

create summary for scenarios   worksheet   Required. An expression that returns a **worksheet** object.

[**report type**   enumeration]   Optional. The report type. Can be **standard summary** or **summary pivot table**. The default value is **standard summary**.

[**result cells**   range]   Optional. A **range** object that represents the result cells on the specified worksheet. Can be a range, an A1-style range reference, a named range, or a list of category names. Normally, this range refers to one or more cells containing the formulas that depend on the changing cell values for your model; that is, the cells that show the results of a particular scenario. If this argument is omitted, there are no result cells included in the report.

Example

This example creates a summary of the scenarios on Sheet1, with result cells in the range C4:C9 on Sheet1.

```
create summary for scenarios worksheet "Sheet1" ¬
        result cells range "C4:C9" of worksheet "Sheet1"
```

Command: cut

Cuts the object to the Clipboard.

Syntax

cut   button/checkbox/option button/scrollbar/listbox/groupbox/dropdown/spinner/label/textbox   Required. An expression that returns one of the listed objects.

Example

This example cuts button 1 on Sheet1 and places it on the Clipboard.

```
cut button 1 of sheet "Sheet1"
```

Command: `delete chart autoformat`

Removes a custom chart autoformat from the list of available chart autoformats.

Syntax

delete chart autoformat

   name   Unicode text   Required. The name of the custom autoformat to be removed.

Example

This example deletes the custom autoformat named "Presentation Chart."

```
delete chart autoformat name "Presentation Chart"
```

Command: `delete custom list`

Deletes a custom list.

Syntax

delete custom list

   list num   integer   Required. The custom list number. This number must be greater than or equal to 5 (Excel has four built-in custom lists that cannot be deleted).

Remarks

This command generates an error if the list number is less than 5 or if there's no matching custom list.

Example

This example deletes a custom list.

```
set n to (get custom list num list array {"cogs", "sprockets", "widgets", ¬
        "gizmos"})
delete custom list list num n
```

Command: `delete number format`

Deletes a custom number format from the workbook.

Syntax

delete number format   workbook   Required. An expression that returns a **workbook** object.

   number format   Unicode text   Required. Names the number format to be deleted.

Example

This example deletes the number format "000-00-0000" from the active workbook.

```
delete number format active workbook number format "000-00-0000"
```

Command: `double click`

Equivalent to double-clicking the active cell.

Syntax

double click

Example

This example causes a double-click in the active cell on Sheet1.

```
activate object worksheet "Sheet1"
double click
```

Command: `edit`

Reruns the list wizard code with the existing list object, allowing multiple properties to be set at the same time.

Syntax

edit   list object   Required. An expression that returns a **list object** object.

[**destination type**   enumeration]   Optional. Determines whether a range on a worksheet or an entire worksheet serves as the destination for a list object. Can be **dst range** or **dst sheet**.

[**destination**   Unicode text]   Optional. A string specifying a single-cell reference as the destination for the top-left corner of the list object.

[**name**   Unicode text]   Optional. A string specifying a name for the list object or sheet.

[**autoformat**   enumeration]   Optional. Specifies the kind of automatic formatting to apply to the list object. Can be one of the following:

range autoformat threeD effects 1	**range autoformat color 3**
range autoformat threeD effects 2	**range autoformat list 1**
range autoformat accounting 1	**range autoformat list 2**
range autoformat accounting 2	**range autoformat list 3**
range autoformat accounting 3	**range autoformat local format 1**
range autoformat accounting 4	**range autoformat local format 2**
range autoformat classic 1	**range autoformat local format 3**
range autoformat classic 2	**range autoformat local format 4**
range autoformat classic 3	**range autoformat none**
range autoformat color 1	**range autoformat simple**
range autoformat color 2	

[**repeat headers**   Boolean]   Optional. Used in conjunction with **dst sheet**. When the list sheet is printed, determines whether column labels are reprinted on each successive page. The default value is **false**.

[**total row**   Boolean]   Optional. Determines whether the list object displays a totals row. The default value is **false**.

[**visuals**   enumeration]   Optional. Specifies how, or whether, visuals are used in the list object. Can be one of the following: **list object visual automatic** (default), **list object visual off**, or **list object visual on**.

Example

This example moves the list object to the top left of worksheet 1, sets the AutoFormat to **range autoformat accounting 1**, and turns the visuals off in the **list object** object.

```
edit list object 1 of sheet 1 destination type dst range ¬

        destination "$A$1" autoformat range autoformat accounting 1 ¬

        visuals list object visual off
```

Command: Excel comment text

Returns or sets the text of a comment.

Syntax

Excel comment text   Excel comment   Required. An expression that returns an **Excel comment** object.

  [**text**   Unicode text]   Optional. The text to be added.

  [**start**   integer]   Optional. The character number where the added text will be placed. If this argument is omitted, any existing text in the comment is deleted.

  [**over write**   Boolean]   Optional. **True** to overwrite the existing text. The default value is **false** (text is inserted).

Example

This example adds a comment to cell E5 on sheet one.

```
Excel comment text (Excel comment of range "E5") ¬

        text "reviewed by Jessica"
```

Command: Excel repeat

Repeats the last user-interface action.

Syntax

Excel repeat

Remarks

This command repeats only the last action taken by the user before running the script or Visual Basic macro, and it must be the first line in the script or VB macro. It cannot be used to repeat commands.

Example

This example repeats the last user-interface action. The example must be the first line in a script or macro.

```
Excel repeat
```

Command: `exclusive access`

Assigns the current user exclusive access to the workbook that's open as a shared list.

Syntax

exclusive access   workbook   Required. An expression that returns a **workbook** object.

Remarks

The **exclusive access** command saves any changes you've made to the workbook and requires other users who have the workbook open to save their changes to a different file.

If the specified workbook isn't open as a shared list, this command fails. To determine whether a workbook is open as a shared list, use the *multi user editing* property of the **workbook** object.

Example

This example determines whether the active workbook is open as a shared list. If it is, the example gives the current user exclusive access.

```
if multi user editing of active workbook then

        exclusive access active workbook

end if
```

Command: `execute excel 4 macro`

Runs an Excel 4.0 macro function and then returns the result of the function. The return type depends on the function.

Syntax

execute excel 4 macro

> **VB macro name**   Unicode text   Required. An Excel 4.0 macro language function without the equal sign. All references must be given as R1C1 strings. If this argument contains embedded double quotation marks, you must double them. For example, to run the macro function =MID("sometext",1,4), this argument would have to be "MID(""sometext"",1,4)".

Remarks

The Excel 4.0 macro isn't evaluated in the context of the current workbook or sheet. This means that any references should be external and should specify an explicit workbook name. For example, to run the Excel 4.0 macro "My_Macro" in Book1 you must use "Book1!My_Macro()". If you don't specify the workbook name, this command fails.

Example

This example runs the **GET.CELL(42)** macro function on cell C3 on Sheet1 and then displays the result in a message box. The **GET.CELL(42)** macro function returns the horizontal distance from the left edge of the active window to the left edge of the active cell.

```
activate object worksheet "Sheet1"

select range "C3"

display dialog (execute excel 4 macro VB macro name "GET.CELL(42)")
```

Command: `follow`

Displays a cached document, if it's already been downloaded. Otherwise, this command resolves the hyperlink and opens the URL in the default web browser.

Syntax

follow   hyperlink   Required. An expression that returns a **hyperlink** object.

[**new window**   Boolean]   Optional. **True** to display the target application in a new window. The default value is **false**.

[**extra info**   Unicode text]   Optional. A string or list that specifies additional information for HTTP to use to resolve the hyperlink. For example, you can use **extra info** to specify the coordinates of an image map, the contents of a form, or a FAT file name.

[**method**   enumeration]   Optional. Specifies the way **extra info** is attached. Can be one of the following:

Value	Description
append string	**extra info** is a string that's appended to the address.
post string	**extra info** is posted as a string or list.

[**header info**   Unicode text]   Optional. A string that specifies header information for the HTTP request. The default value is an empty string.

Example

This example follows the hyperlink assigned to shape 1 on the active sheet.

```
set var to hyperlink of shape 1 of active sheet
follow var
```

Command: `follow hyperlink`

Displays a cached document, if it's already been downloaded. Otherwise, this command resolves the hyperlink and opens the URL in the default web browser.

Syntax

follow hyperlink   workbook   Required. An expression that returns a **workbook** object.

address   Unicode text   Required. The address of the target document.

[**sub address**   Unicode text]   Optional. The location within the target document. The default value is the empty string.

[**new window**   Boolean]   Optional. **True** to display the target application in a new window. The default value is **false**.

[**extra info** Unicode text]   Optional. A string or list that specifies additional information for HTTP to use to resolve the hyperlink. For example, you can use **extra info** to specify the coordinates of an image map, the contents of a form, or a FAT file name.

[**method** enumeration]   Optional. Specifies the way **extra info** is attached. Can be one of the following:

Value	Description
append string	**extra info** is a string that's appended to the address.
post string	**extra info** is posted as a string or list.
post file	**extra info** specifies a FAT file name; the file content is posted.

[**header info** Unicode text]   Optional. A string that specifies header information for the HTTP request. The default value is an empty string.

Example

This example loads the document at www.alpineskihouse.com in a new window and adds it to the History folder.

```
follow hyperlink (active workbook) address "http://www.alpineskihouse.com" ¬
        with new window
```

Command: get border

Returns the **border** object for the specified border of the **format condition** object.

Syntax

get border format condition   Required. An expression that returns a **format condition** object.

which border enumeration   Required. The border to be retrieved. Can be one of the following:

inside horizontal	**edge right**
inside vertical	**edge top**
diagonal down	**border bottom**
diagonal up	**border left**
edge bottom	**border right**
edge left	**border top**

Example

This example adds a dotted border around the range E1:E10.

```
set theFC to make new format condition at range "E1:E10" with properties ¬
        {format condition type:cell value, ¬
        condition operator:operator between, ¬
        formula1:"1", formula2:"10"}
set line style of (get border theFC which border border top) to dot
set line style of (get border theFC which border border bottom) to dot
set line style of (get border theFC which border border left) to dot
set line style of (get border theFC which border border right) to dot
```

Command: `get clipboard formats`

Returns a list of the formats that are currently on the clipboard.

Syntax

get clipboard formats

Example

This example displays a message box if the Clipboard contains a rich-text format (RTF) object. You can create an RTF object by copying text from a Word document.

```
set aFmts to get clipboard formats
repeat with i from 1 to (count of aFmts)
    if item i of aFmts is "clipboard format RTF" then
        display dialog "Clipboard contains rich text"
    end if
end repeat
```

Command: `get custom list contents`

Returns a custom list (a list of strings).

Syntax

get custom list contents

  list num integer Required. The list number.

Example

This example writes the elements of the first custom list in column one on Sheet1.

```
set custList to get custom list contents list num 1
repeat with i from 1 to (count of custList)
    set value of cell ("A" & i) of worksheet "Sheet1" to (item i of custList)
end repeat
```

Command: `get custom list num`

Returns the custom list number for a list of strings. You can use this command to match both built-in lists and custom-defined lists.

Syntax

get custom list num

  list array list Required. A list of strings.

Remarks

This command generates an error if there's no corresponding list.

Example

This example deletes a custom list.

```
set n to (get custom list num list array {"cogs", "sprockets", "widgets", ¬
        "gizmos"})
delete custom list list num n
```

Command: `get dialog`

Returns the specified **dialog** object.

Syntax

get dialog   enumeration   Required. The specific dialog box you want to return. Can be one of the following:

dialog open	**dialog change link**	**dialog options general**
dialog open links	**dialog app move**	**dialog filter advanced**
dialog save as	**dialog app size**	**dialog mail next letter**
dialog file delete	**dialog main chart type**	**dialog data label**
dialog page setup	**dialog overlay chart type**	**dialog insert title**
dialog print	**dialog open mail**	**dialog font properties**
dialog printer setup	**dialog send mail**	**dialog macro options**
dialog arrange all	**dialog standard font**	**dialog workbook unhide**
dialog window size	**dialog consolidate**	**dialog workbook name**
dialog window move	**dialog sort special**	**dialog gallery custom**
dialog run	**dialog gallery threeD area**	**dialog add chart autoformat**
dialog set print titles	**dialog gallery threeD column**	**dialog chart add data**
dialog font	**dialog gallery threeD line**	**dialog tab order**
dialog display	**dialog gallery threeD pie**	**dialog subtotal create**
dialog protect document	**dialog view threeD**	**dialog workbook tab split**
dialog calculation	**dialog goal seek**	**dialog workbook protect**
dialog extract	**dialog workgroup**	**dialog scrollbar properties**
dialog data delete	**dialog fill group**	**dialog pivot show pages**
dialog sort	**dialog update link**	**dialog text to columns**
dialog data series	**dialog promote**	**dialog format charttype**
dialog table	**dialog demote**	**dialog pivot field group**
dialog format number	**dialog show detail**	**dialog pivot field ungroup**
dialog alignment	**dialog object properties**	**dialog checkbox properties**
dialog style	**dialog save new object**	**dialog label properties**
dialog border	**dialog apply style**	**dialog listbox properties**
dialog cell protection	**dialog assign to object**	**dialog editbox properties**
dialog column width	**dialog object protection**	**dialog open text**
dialog clear	**dialog show toolbar**	**dialog pushbutton properties**
dialog paste special	**dialog print preview**	**dialog filter**
dialog edit delete	**dialog edit color**	**dialog function wizard**
dialog insert	**dialog format main**	**dialog save copy as**
dialog paste names	**dialog format overlay**	**dialog options lists add**
dialog define name	**dialog edit series**	**dialog series axes**
dialog create names	**dialog define style**	**dialog series x**
dialog formula goto	**dialog gallery radar**	**dialog series y**
dialog formula find	**dialog zoom**	**dialog errorbar x**

dialog gallery area	dialog insert object	dialog errorbar y
dialog gallery bar	dialog size	dialog format chart
dialog gallery column	dialog move	dialog series order
dialog gallery line	dialog format auto	dialog mail edit mailer
dialog gallery pie	dialog gallery threeD bar	dialog standard width
dialog gallery scatter	dialog gallery threeD surface	dialog scenario merge
dialog combination	dialog customize toolbar	dialog summary info
dialog gridlines	dialog workbook add	dialog find file
dialog axes	dialog workbook move	dialog active cell font
dialog attach text	dialog workbook copy	dialog vba make add in
dialog patterns	dialog workbook options	dialog file sharing
dialog main chart	dialog save workspace	dialog autocorrect
dialog overlay	dialog chart wizard	dialog custom views
dialog scale	dialog assign to tool	dialog insert name label
dialog format legend	dialog placement	dialog series shape
dialog format text	dialog fill workgroup	dialog chart options data labels
dialog parse	dialog workbook new	dialog chart options data table
dialog unhide	dialog scenario cells	dialog set background picture
dialog workspace	dialog scenario add	dialog data validation
dialog activate	dialog scenario edit	dialog chart type
dialog copy picture	dialog scenario summary	dialog chart location
dialog delete name	dialog pivot table wizard	dialog chart source data
dialog delete format	dialog pivot field properties	dialog series options
dialog new	dialog options calculation	dialog pivot table options
dialog row height	dialog options edit	dialog pivot solve order
dialog format move	dialog options view	dialog pivot calculated field
dialog format size	dialog add in manager	dialog pivot calculated item
dialog formula replace	dialog menu editor	dialog conditional formatting
dialog select special	dialog attach toolbars	dialog insert hyperlink
dialog apply names	dialog options chart	dialog protect sharing
dialog replace font	dialog vba insert file	dialog phonetic
dialog split	dialog vba procedure definition	dialog import text file
dialog outline	dialog routing slip	dialog calculator
dialog save workbook	dialog mail logon	dialog web options general
dialog copy chart	dialog insert picture	dialog web options pictures
dialog format font	dialog gallery doughnut	dialog web options files
dialog note	dialog chart trend	dialog web options fonts
dialog set update status	dialog workbook insert	dialog web options encoding
dialog color palette	dialog options transition	

Example

The following example displays and carries out the actions taken in the built-in **Save As** dialog box
(**File** menu).

```
show (get dialog dialog save as)
```

Command: `get file converters`

Returns a list of all of the file converter objects.

Syntax

get file converters   list   Required. Returns a list of file converters.

Example

This example returns a list of file converters.

```
get file converters
```

Command: `get FileMaker criteria`

Retrieves the criteria from an existing Excel query table that has been created against a FileMaker database.

Syntax

get FileMaker criteria   query table   Required. An expression that returns a **query table** object.

  criteria index   integer   Required. An index into the number of criteria that have been set.

Example

This example returns the values of arguments used in the second set of criteria from an existing Excel query table that was created against a FileMaker database.

```
set QT to query table 1 of active sheet
set criteriaRecord to get FileMaker criteria QT criteria index 2
set varfieldName to «class 5324» of criteriaRecord
set varClauseText to «class 5325» of criteriaRecord
set varCondition to «class 5326» of criteriaRecord
set varOperator to operator of criteriaRecord
```

Command: `get international`

This command is not currently supported.

Command: `get list item`

Returns a string from the list.

Syntax

get list item listbox/dropdown   Required. Returns a string from the list.

  [**entry index** integer]   Optional. The index of the string to be returned.

Example

This example returns the string contained in list item 1 of listbox 1 on the active sheet.

```
get list item listbox 1 of active sheet entry index 1
```

Command: `get open filename`

This command is not currently supported.

Command: `get pivot table data`

Syntax

get pivot table data pivot table   Required. An expression that returns a **pivot table** object.

  name Unicode text   Required. Describes a single cell in the PivotTable, using syntax similar to the **pivot select** command or the PivotTable references in calculated item formulas.

Example

This example shows the sum of revenues for apples in January (Data field = Revenue, Product = Apples, Month = January).

```
display dialog (get pivot table data (pivot table 1 of active sheet) ¬
        name "'Sum of Revenue' Apples January") as string
```

Command: `get previous selections`

This command is not currently supported.

Command: `get registered functions`

Returns information about functions in code resources that were registered with the REGISTER or REGISTER.ID macro functions.

Syntax

get registered functions

Example

This example creates a list of registered functions, placing one registered function in each row on Sheet1. Column A contains the full path and file name of the DLL or code resource, column B contains the function name, and column C contains the argument data type code.

```
set theList to (get registered functions)
if theList is not "" then
    display dialog "No registered functions"
else
    repeat with i from 1 to (get count of theList)
        repeat with j from 1 to 3
            set formula of cell i of column j of worksheet "Sheet1" to ¬
                (item j of item 1 of theList)
        end repeat
    end repeat
end if
```

Command: `get save as filename`

Displays the standard **Save As** dialog box and gets a file name from the user without actually saving any files.

Syntax

get save as filename

[**initial filename** Unicode text]   Optional. Specifies the suggested file name. If this argument is omitted, Excel uses the name of the active workbook.

[**file filter** Unicode text]   Optional. A string specifying file filtering criteria. This string is a list of comma-separated file type codes (for example, "TEXT,XLA5,XLS4"). Spaces are significant and shouldn't be inserted before or after the comma separators unless they're part of the file type code. If omitted, this argument defaults to all file types.

[**filter index** integer]   Optional. This argument is not currently supported.

[**button text** Unicode text]   Optional. Specifies the text used for the **Save** button in the dialog box. If this argument is omitted, the button text is "Save".

Remarks

This command returns the selected file name or the name entered by the user. The returned name may include a path specification. Returns **false** if the user cancels the dialog box.

This command may change the current drive or folder.

Example

This example displays the **Save As** dialog box, with the file filter set to text files. If the user chooses a file name, the example displays that file name in a message box.

```
set fileSaveName to get save as filename file filter "TEXT"
if fileSaveName is not "" then
    display dialog "Save as " & fileSaveName
end if
```

Command: get subtotals

Returns subtotals displayed with the specified field. Valid only for non-data fields.

Syntax

get subtotals pivot field   Required. Specifies the pivot field.

[**subtotal index** enumeration]   Optional. Specifies the subtotal to be returned. Can be one of the following:

- **subtotal automatic**
- **subtotal sum**
- **subtotal count**
- **subtotal average**
- **subtotal max**
- **subtotal min**
- **subtotal product**
- **subtotal count numbers**
- **subtotal standard deviation**
- **subtotal standard deviation p**
- **subtotal variable**
- **subtotal variable p**

Subtotals are returned as follows:

1	automatic	7	product
2	sum	8	count nums
3	count	9	StdDev
4	average	10	StdDevp
5	max	11	Var
6	min	12	Varp

Example

```
get subtotals pivot field 1 of pivot table 1 of active sheet
```

Command: `get values`

Returns a list that contains the current values of the changing cells for the scenario.

Syntax

get values scenario   Required. An expression that returns a **scenario** object.

Example

This example returns a list that contains the current values of the changing cells for scenario 1.

```
get values scenario 1 of worksheet "Sheet1"
```

Command: `get visible fields`

Returns a list of all of the visible PivotTable fields. Visible PivotTable fields are shown as row, column, page, or data fields.

Syntax

get visible fields   pivot table   Required. An expression that returns a **pivot table** object.

Example
```
get visible fields pivot table 1 of active sheet
```

Command: `get webpage font`

Returns a **web page font** object for a particular character set.

Syntax

get webpage font   enumeration   Required. The character set from which you want to return the **web page font** object. Can be one of the following:

Arabic character set	**Korean character set**
Cyrillic character set	**Multilingual Unicode character set**
English character set	**Simplified Chinese character set**
Greek character set	**Thai character set**
Hebrew character set	**Traditional Chinese character set**
Japanese character set	**Vietnamese character set**

Example

The following example uses the **get webpage font** command to set `myFont` to the **web page font** object for the English character set in the active application.

```
set myFont to (get webpage font English character set)
```

Command: `goto`

Selects any range in any workbook, and activates that workbook if it's not already active.

Syntax

goto

[**reference** range]   Optional. The destination. Can be a **range** object, an A1-style range reference, a named range, or a list of category names. If this argument is omitted, the destination is the last range you used the **goto** command to select.

[**scroll** Boolean]   Optional. **True** to scroll through the window so that the upper-left corner of the range appears in the upper-left corner of the window. **False** to not scroll through the window. The default is **false**.

Remarks

This command differs from the **select** command in the following ways:

- If you specify a range on a sheet that's not on top, Excel will switch to that sheet before selecting. (If you use **select** with a range on a sheet that's not on top, the range will be selected but the sheet won't be activated.)

- This command has a **scroll** argument that lets you scroll through the destination window.

- When you use the **goto** command, the previous selection (before the **goto** command runs) is added to the list of previous selections. You can use this feature to quickly jump between as many as four selections.

Example

This example selects cell A154 on Sheet1 and then scrolls through the worksheet to display the range.

```
set theRange to range "A154" of worksheet "Sheet1"
goto reference theRange with scroll
```

Command: `help`

Displays the Help window.

Syntax

help

[**help file** Unicode text]   Optional. The name of the online Help file to display. If this argument isn't specified, Excel Help is displayed.

[**help context id** integer]   Optional. Specifies the context ID number for the Help topic to display. If this argument isn't specified, the default topic for the specified Help file is displayed.

Remarks

The **help file** argument must specify an Office Help file. Otherwise, a "file could not be found" message appears.

Example

This example displays topic number 1027 in the file Excel Help.

```
help help file "Excel Help" help context id 1027
```

Command: highlight changes options

Controls how changes are shown in a shared workbook.

Syntax

highlight changes options   workbook   Required. An expression that returns a **workbook** object.

[**when**   enumeration]   Optional. The changes that are shown. Can be one of the following: **since my last save**, **all changes**, or **not yet reviewed**.

[**who**   Unicode text]   Optional. The user or users whose changes are shown. Can be "Everyone," "Everyone but Me," or the name of one of the users of the shared workbook.

[**where**   range object/A1-style range reference/named range]   Optional. A **range** object, A1-style range reference, or named range that specifies the area to check for changes.

Example

This example shows all changes made to the shared workbook since it was last saved by the current user.

```
highlight changes options active workbook when since my last save who "Everyone"
```

Command: inches to points

Converts a measurement from inches to points.

Syntax

inches to points

  inches   real   Required. Specifies the inch value to be converted to points.

Example

This example sets the left margin of Sheet1 to 2.5 inches.

```
set left margin of page setup object of worksheet "Sheet1" to ¬
        (inches to points inches 2.5)
```

Command: input box

Displays a dialog box for user input. Returns the information entered in the dialog box.

Syntax

input box

 prompt   Unicode text   Required. The message to be displayed in the dialog box. This can be a string, a number, a date, or a Boolean value (Excel automatically converts the value to a string before it's displayed).

 [**title**   Unicode text]   Optional. The title for the input box. If this argument is omitted, the default title is "Input."

 [**default**   range]   Optional. Specifies a value that will appear in the text box when the dialog box is initially displayed. If this argument is omitted, the text box is left empty. Can be a **range** object, an A1-style range reference, a named range, or **input default as string**.

 [**left position**   integer]   Optional. Specifies an x position (in points) for the dialog box in relation to the upper-left corner of the screen.

 [**top**   integer]   Optional. Specifies a y position (in points) for the dialog box in relation to the upper-left corner of the screen.

 [**type**   enumeration]   Optional. Specifies the return data type. If this argument is omitted, the dialog box returns text. Can be one of the following:

- **a number**
- **input type as string**
- **a number or a string**
- **a bool**
- **range object**
- **list of numbers**
- **list of strings**
- **list of number or string**
- **list of bools**
- **list of range objects**

Remarks

Use **input box** to display a simple dialog box so that you can enter information to be used in a script. The dialog box has an **OK** button and a **Cancel** button. If you choose the **OK** button, **input box** returns the value entered in the dialog box. If you click the **Cancel** button, **input box** returns **false**.

If **type** is **range object**, **input box** returns a valid range reference as a Unicode text string.

```
set myRange to (input box prompt "Sample" type range object)
```

If you use the **input box** command to ask the user for a formula, you must use the *formula local* property to assign the formula to a **range** object. The input formula will be in the language of the user.

Example

This example prompts the user for a number.

```
input box prompt "Enter a number"
```

This example prompts the user to select a cell on Sheet1. Because this example uses the **type** argument, it returns a valid range reference as a Unicode text string.

```
activate sheet "Sheet1"
set myCell to input box prompt "Select a cell" type range object
```

Command: intersect

Returns a **range** object that represents the rectangular intersection of two or more ranges. At least two ranges must be specified.

Syntax

intersect

  range1 range   Required. One of the intersecting ranges.

  range2 range   Required. One of the intersecting ranges.

  [**range3, range4, ... range30** range]   Optional. More intersecting ranges.

Example

This example selects the intersection of two ranges on Sheet1 that have defined names, rg1 and rg2. If the ranges don't intersect, the example displays a message.

```
set isect to intersect range1 range of named item ¬
        "rg1" range2 range of named item "rg2"
select isect
```

Command: item selected

Checks whether a particular item in the list is selected.

Syntax

item selected listbox/dropdown   Required. An expression that returns a **listbox** or **dropdown** object.

  [**entry index** integer]   Optional. The index of the string to be checked to see whether it is selected. Returns **true** if the item was selected.

Example

```
item selected listbox 1 of active sheet entry index 1
```

Command: `large scroll`

Scrolls the contents of the window by pages.

Syntax

large scroll   window/pane   Required. An expression that returns a **window** or **pane** object.

[**down**   integer]   Optional. The number of pages to scroll the contents down.

[**up**   integer]   Optional. The number of pages to scroll the contents up.

[**to right**   integer]   Optional. The number of pages to scroll the contents to the right.

[**to left**   integer]   Optional. The number of pages to scroll the contents to the left.

Remarks

If **down** and **up** are both specified, the contents of the window are scrolled by the difference of the arguments. For example, if **down** is 3 and **up** is 6, the contents are scrolled up three pages.

If **to left** and **to right** are both specified, the contents of the window are scrolled by the difference of the arguments. For example, if **to left** is 3 and **to right** is 6, the contents are scrolled to the right three pages.

Any of the arguments can be a negative number.

Example

This example scrolls the contents of the active window of Sheet1 down three pages.

```
large scroll active window down 3
```

Command: `link info`

Returns the link date and update status.

Syntax

link info   workbook   Required. An expression that returns a **workbook** object.

name   Unicode text   Required. The name of the link, as returned from the **link sources** command.

link info   enumeration   Required. The type of information to be returned. Can be **update state** or **edition date** (applies only to editions). For **update state**, this command returns 1 if the link updates automatically, or it returns 2 if the link must be updated manually.

[**type**   enumeration]   Optional. The type of link to return. Can be one of the following: **link info olelinks**, **link info publishers**, or **link info subscribers**.

Example

This example sets cell A1 to "TRUE" if the link is updated automatically.

```
if (link info active workbook name "Word.Document|Document1" ¬
        link info update state type link info olelinks) = 1 then
        set value of cell "A1" to "TRUE"
end if
```

Command: `link sources`

Returns a list of links in the workbook. The names in the list are the names of the linked documents, editions, or OLE servers. Returns an empty string if there are no links.

Syntax

link sources workbook Required. An expression that returns a **workbook** object.

[**type** enumeration] Optional. The type of link to return. Can be either **link type Excel links** or **link type OLE links**.

Remarks

The format of the list is a one-dimensional list for all types. The returned strings contain the name of the link source in the appropriate notation for the link type.

Command: `list formulas`

Creates a list of calculated PivotTable items and fields on a separate worksheet.

Syntax

list formulas pivot table Required. An expression that returns a **pivot table** object.

Example

This example creates a list of calculated items and fields for PivotTable one.

```
list formulas pivot table 1 of worksheet 1
```

Command: `merge scenarios`

Merges the scenarios from the merge source worksheet into this worksheet.

Syntax

merge scenarios worksheet Required. An expression that returns a **worksheet** object.

merge source worksheet Required. The name of the sheet that contains scenarios to be merged, or a **worksheet** object that represents that sheet.

Example

This example merges the styles from the workbook Template.xls into the active workbook.

```
merge scenarios active workbook merge source workbook "Template.xls"
```

Command: `merge workbook`

Merges changes from one workbook into an open workbook.

Syntax

merge workbook   workbook   Required. An expression that returns a **workbook** object.

   file name   Unicode text   Required. The file name of the workbook that contains the changes to be merged into the open workbook.

Example

This example merges changes from Book1.xls into the active workbook.

```
merge workbook active workbook file name "Book1.xls"
```

Command: `modify`

Modifies data validation for a range.

Syntax

modify   validation   Required. An expression that returns a **validation** object.

   [**type**   enumeration]   Optional. The validation type. Can be one of the following:

- **validate input only**
- **validate whole number**
- **validate decimal**
- **validate list**
- **validated date**
- **validate time**
- **validate text length**
- **validate custom**

   [**alert style**   enumeration]   Optional. The validation alert style. Can be one of the following: **valid alert none**, **valid alert stop**, **valid alert warning**, or **valid alert information**.

[**operator**   enumeration]   Optional. The data validation operator. Can be one of the following:

- **operator between**
- **operator not between**
- **operator equal**
- **operator not equal**
- **operator greater**
- **operator less**
- **operator greater equal**
- **operator less equal**

[**formula1**   Unicode text]   Optional. The first part of the data validation equation.

[**formula2**   Unicode text]   Optional. The second part of the data validation when **operator** is **operator between** or **operator not between** (otherwise, this argument is ignored).

Remarks

The **modify** command requires different arguments depending on the validation type, as shown in the following table.

Validation type	Arguments
validate custom	**formula1** is required; **formula2** is ignored. **formula1** must contain an expression that evaluates to **true** when data entry is valid and **false** when data entry is invalid.
validate input only	**alert style**, **formula1**, and **formula2** are not used.
validate list	**formula1** is required; **formula2** is ignored. **formula1** must contain either a comma-delimited list of values or a worksheet reference to the list.
validate whole number, **validated date**, **validate decimal**, **validate text length**, or **validate time**	**formula1** or **formula2**, or both, must be specified.

Example

This example changes data validation for cell E5.

```
set v1 to validation of range "E5"
modify v1 type validate list alert style valid alert stop ¬
        formula1 "=$A$1:$A$10"
```

Command: `modify condition`

Modifies an existing conditional format.

Syntax

modify condition format condition Required. An expression that returns a **format condition** object.

   type enumeration Required. Specifies whether the conditional format is based on a cell value or an expression. Can be either **cell value** or **expression**.

   [**operator** enumeration] Optional. The conditional format operator. Can be one of the following:

operator between	**operator greater**
operator not between	**operator less**
operator equal	**operator greater equal**
operator not equal	**operator less equal**

   [**formula1** Unicode text] Optional. The value or expression associated with the conditional format. Can be a constant value, a string value, a cell reference, or a formula.

   [**formula2** Unicode text] Optional. The value or expression associated with the second part of the conditional format when **operator** is **operator between** or **operator not between**. Can be a constant value, a string value, a cell reference, or a formula.

Note If **type** is **expression**, then **operator** is ignored and **formula1** is required. If **type** is **cell value**, then **operator** and **formula1** are required.

Example

These examples modify an existing conditional format for the current selection.

```
set theFC to make new format condition at range "E1:E10" ¬
        with properties {format condition type:cell value, ¬
        condition operator:operator between, formula1:"1", ¬
        formula2:"10"}
modify condition theFC type cell value ¬
        operator operator equal formula1 "3.5"
set theFC to make new format condition at range "E1:E10" ¬
        with properties {format condition type:cell value, ¬
        condition operator:operator between, formula1:"1", ¬
        formula2:"10"}
modify condition theFC type expression formula1 "=SUM(A1:A5)"
```

Command: `new window on workbook`

Creates a new window or a copy of the specified workbook window.

Syntax

new window on workbook workbook Required. An expression that returns a **workbook** object.

Example

This example creates a new window for the active workbook.

```
new window on workbook active workbook
```

Command: next Excel comment

Returns an **Excel comment** object that represents the next comment.

Syntax

next Excel comment   Excel comment   Required. An expression that returns an **Excel comment** object.

Remarks

This command works only on one sheet. Using this command on the last comment on a sheet returns **missing value** (not the next comment on the next sheet).

Example

This example hides the next comment.

```
set visible of (next Excel comment ¬
        (Excel comment of range "A1")) to false
```

Command: on key

Runs a specified procedure when a particular key or key combination is pressed.

Syntax

on key

  key   string   Required. A string indicating the key to be pressed.

 [**command key pressed**   Boolean]   Optional. Specifies whether the COMMAND key must be pressed with the key specified by the **key** argument.

 [**shift key pressed**   Boolean]   Optional. Specifies whether the SHIFT key must be pressed with the key specified by the **key** argument.

 [**option key pressed**   Boolean]   Optional. Specifies whether the OPTION key must be pressed with the key specified by the **key** argument.

 [**control key pressed**   Boolean]   Optional. Specifies whether the CONTROL key must be pressed with the key specified by the **key** argument.

 [**procedure**   script]   Optional. A string indicating the name of the procedure to be run. If **procedure** is "" (empty text), nothing happens when **key** is pressed. This form of the **on key** command changes the normal result of keystrokes in Excel. If **procedure** is omitted, **key** reverts to its normal result in Excel, and any special key assignments made with previous **on key** commands are cleared.

Remarks

The **key** argument can specify any single key — COMMAND, CTRL, OPTION, or SHIFT, or any combination of these keys. Each key is represented by one or more characters, such as `"a"` for the character a, or `"{RETURN}"` for the RETURN key.

To specify characters that aren't displayed when you press the corresponding key (ENTER or TAB, for example), use the codes listed in the following table. Each code in the table represents one key on the keyboard.

Key	Code
BACKSPACE	{BACKSPACE} or {BS}
BREAK	{BREAK}
CAPS LOCK	{CAPSLOCK}
CLEAR	{CLEAR}
DELETE or DEL	{DELETE} or {DEL}
DOWN ARROW	{DOWN}
END	{END}
ENTER (numeric keypad)	{ENTER}
ENTER	~ (tilde)
ESC	{ESCAPE} or {ESC}
HELP	{HELP}
HOME	{HOME}
INS	{INSERT}
LEFT ARROW	{LEFT}
NUM LOCK	{NUMLOCK}
PAGE DOWN	{PGDN}
PAGE UP	{PGUP}
RETURN	{RETURN}
RIGHT ARROW	{RIGHT}
SCROLL LOCK	{SCROLLLOCK}
TAB	{TAB}
UP ARROW	{UP}
F1 through F15	{F1} through {F15}

You can also specify keys combined with SHIFT and/or CTRL and/or OPTION and/or COMMAND. To specify a key combined with another key or keys, use the following table.

To combine keys with	Precede the key code by
SHIFT	+ (plus sign)
CTRL	^ (caret)
OPTION	% (percent sign)
COMMAND	* (asterisk)

To assign a procedure to one of the special characters (+, ^, %, and so on), enclose the character in braces. For details, see the example.

Example

This example assigns "InsertProc" to the key sequence CTRL+PLUS SIGN and assigns "SpecialPrintProc" to the key sequence SHIFT+CTRL+RIGHT ARROW.

```
on key key "+" control key pressed true procedure "InsertProc"
on key key "RIGHT" shift key pressed true control key pressed true ¬
        procedure "SpecialPrintProc"
```

This example returns SHIFT+CTRL+RIGHT ARROW to its normal meaning.

```
on key key "RIGHT" shift key pressed true control key pressed true
```

This example disables the SHIFT+CTRL+RIGHT ARROW key sequence.

```
on key key "RIGHT"
```

Command: on repeat

Sets the **Repeat** menu item and the name of the procedure that will run if you choose the **Repeat** command (**Edit** menu) after running the procedure that sets this property.

Syntax

on repeat

  display text   Unicode text   Required. The text that appears with the **Repeat** command (**Edit** menu).

  procedure   Unicode text   Required. The name of the procedure that will be run when you choose the **Repeat** command (**Edit** menu).

Remarks

If a procedure doesn't use the **on repeat** command, the **Repeat** menu item repeats the procedure that was run most recently.

The procedure must use the **on repeat** command last to prevent the **Repeat** menu item from being overwritten by subsequent actions in the procedure.

Example

This example sets the repeat procedure.

```
on repeat display text "Repeat VB Procedure" ¬
        procedure "Book1.xls!My_Repeat_Sub"
```

Command: open FileMaker file

Opens the FileMaker Import Wizard for importing data from a FileMaker database into Excel.

Syntax

open FileMaker file

 filename   Unicode text   Required. The path and name of the FileMaker file.

Example

This example opens a file named "Inventory.fp6" in the FileMaker Import Wizard.

```
open FileMaker file filename "Inventory.fp6"
```

Command: open links

Opens the supporting documents for a link or links.

Syntax

open links   workbook   Required. An expression that returns a **workbook** object.

 name   Unicode text   Required. The name of the Excel or OLE link, as returned from the **link sources** command.

 [**read only**   Boolean]   Optional. **True** to open documents as read-only. The default value is **false**.

 [**type**   enumeration]   Optional. The link type. Can be **link type Excel links** or **link type OLE links**.

Example

This example opens OLE link one in the active workbook.

```
set linkList to (link sources active workbook type link type OLE links)
open links active workbook name item 1 of linkList
```

This example opens all supporting Excel documents for the active workbook.

```
open links active workbook name item 1 of ¬
        (link sources active workbook type link type Excel links)
```

Command: `open text file`

Loads and parses a text file as a new workbook with a single sheet that contains the parsed text-file data.

Syntax

open text file

> **filename**   Unicode text   Required. Specifies the file name of the text file to be opened and parsed.

> [**origin**   enumeration]   Optional. Specifies the origin of the text file. Can be one of the following: **Macintosh**, **MSWindows**, or **MSDos**. If this argument is omitted, the command uses the current setting of the **File Origin** option in the **Text Import Wizard**.

> [**start row**   integer]   Optional. The row number at which to start parsing text. The default value is 1.

> [**data type**   enumeration]   Optional. Specifies the column format of the data in the file. Can be one of the following: **delimited** or **fixed width**. The default value is **delimited**.

> [**text qualifier**   enumeration]   Optional. Specifies the text qualifier. Can be one of the following: **text qualifier double quote**, **text qualifier single quote**, or **text qualifier none**. The default value is **text qualifier double quote**.

> [**consecutive delimiter**   Boolean]   Optional. **True** to have consecutive delimiters considered one delimiter. The default is **false**.

> [**tab**   Boolean]   Optional. **True** to have the tab character be the delimiter (**data type** must be **delimited**). The default value is **false**.

> [**semicolon**   Boolean]   Optional. **True** to have the semicolon character be the delimiter (**data type** must be **delimited**). The default value is **false**.

> [**comma**   Boolean]   Optional. **True** to have the comma character be the delimiter (**data type** must be **delimited**). The default value is **false**.

> [**space**   Boolean]   Optional. **True** to have the space character be the delimiter (**data type** must be **delimited**). The default value is **false**.

> [**use other**   Boolean]   Optional. **True** to have the character specified by the **other char** argument be the delimiter (**data type** must be **delimited**). The default value is **false**.

> [**other char**   Boolean]   Optional (required if **use other** is **true**). Specifies the delimiter character when **use other** is **true**. If more than one character is specified, only the first character of the string is used; the remaining characters are ignored.

[**field info**   list]   Optional. A list containing parse information for individual columns of data. The interpretation depends on the value of **data type**.

When the data is delimited, this argument is a list of two-element list entries, with each two-element list entry specifying the conversion options for a particular column. The first element is the column number (1-based), and the second element is one of the following numbers, specifying how the column in parsed.

1   General
2   Text
3   MDY date
4   DMY date
5   YMD date
6   MYD date
7   DYM date
8   YDM date
9   Skip the column

The column specifiers can be in any order. If there's no column specifier for a particular column in the input data, the column is parsed with the General setting. This example causes the third column to be skipped, the first column to be parsed as text, and the remaining columns in the source data to be parsed with the General setting.

```
{{3,9}, {1,2}}
```

If the source data has fixed-width columns, the first element in each two-element list entry specifies the position of the starting character in the column (as an integer; character 0 (zero) is the first character). The second element in the two-element list entry specifies the parse option for the column as a number between 1 and 9, as listed in the preceding table.

The following example parses two columns from a fixed-width text file. The first column includes characters 1 through 10. Characters 11, 12, 13, 14, and 15 are skipped. The second column includes character 16 through the last character in the line.

```
{{0,1}, {10,9}, {15,1}}
```

[**decimal separator**   Unicode text]   Optional. A string specifying whether a comma or period is used in the text file as the separator for decimal numbers.

[**thousands separator**   Unicode text]   Optional. A string specifying whether a comma, period, or apostrophe is used in the text file as the separator for thousands.

Example

This example opens the file Data.txt and uses tab delimiters to parse the text file into a worksheet.

```
open text file filename "DATA.TXT" data type delimited tab true
```

Command: `open workbook`

Opens a workbook.

Syntax

open workbook

  workbook file name Unicode text Required. The file name of the workbook to be opened.

  [**update links** enumeration] Optional. Specifies the way links in the file are updated. If this argument is omitted, the user is prompted to specify how links will be updated. Otherwise, this argument can be one of the following:

- **do not update links**
- **update external links only**
- **update remote links only**
- **update remote and external links**

If Excel is opening a file in the WKS, WK1, or WK3 format and the **update links** argument is **update remote links only**, Excel generates charts from the graphs attached to the file. If the argument is **do not update links**, no charts are created.

  [**read only** Boolean] Optional. **True** to open the workbook in read-only mode.

  [**format** enumeration] Optional. If Excel is opening a text file, this argument specifies the delimiter character. If this argument is omitted, the current delimiter is used. Can be one of the following:

- **tab delimiter**
- **commas delimiter**
- **spaces delimiter**
- **semicolon delimiter**
- **no delimiter**
- **custom character delimiter** (see the **delimiter** argument)

  [**password** Unicode text] Optional. A string that contains the password required to open a protected workbook. If this argument is omitted and the workbook requires a password, the user is prompted for the password.

  [**write reserved password** Unicode text] Optional. A string that contains the password required to write to a write-reserved workbook. If this argument is omitted and the workbook requires a password, the user will be prompted for the password.

  [**ignore read only recommended** Boolean] Optional. **True** to have Excel not display the read-only recommended message (if the workbook was saved with the **Read-Only Recommended** option).

  [**origin** enumeration] Optional. If the file is a text file, this argument indicates where it originated (so that code pages and Carriage Return/Line Feed (CR/LF) can be mapped correctly). Can be one of the following: **Macintosh**, **MSWindows**, or **MSDos**. If this argument is omitted, **Macintosh** is used.

[**delimiter**   Unicode text]   Optional. If the file is a text file and the **format** argument is **custom character delimiter**, this argument is a string that specifies the character to be used as the delimiter. For example, use `Chr(9)` for tabs, use "," for commas, use ";" for semicolons, or use a custom character. Only the first character of the string is used.

[**editable**   Boolean]   Optional. If the file is an Excel 4.0 add-in, this argument is **true** to open the add-in so that it's a visible window. If this argument is **false** or omitted, the add-in is opened as hidden, and it cannot be unhidden. This option doesn't apply to add-ins created in Excel 5.0 or later. If the file isn't an add-in, **true** prevents any Auto_Open macros from running.

[**notify**   Boolean]   Optional. If the file cannot be opened in read/write mode, this argument is **true** to add the file to the file notification list. Excel will open the file as read-only, poll the file notification list, and then notify the user when the file becomes available. If this argument is **false** or omitted, no notification is requested, and any attempts to open an unavailable file will fail.

[**converter**   integer]   Optional. This argument is not currently supported.

[**add to mru**   Boolean]   Optional. **True** to add this workbook to the list of recently used files. The default value is **false**.

Remarks

If the workbook being opened has any Auto_Open macros in it, they won't be run when you open the workbook by using this command. To run the Auto_Open macro, use the **run auto macros** command.

Example

This example opens the workbook Analysis.xls and then runs its Auto_Open macro.

```
open workbook workbook file name "Analysis.xls"
```

```
run auto macros active workbook which auto open
```

Command: paste special on worksheet

Pastes the contents of the Clipboard onto the sheet, using a specified format. Use this command to paste data from other applications or to paste data in a specific format.

Syntax

paste special on worksheet   sheet   Required. An expression that returns a **sheet** object.

[**format**   Unicode text]   Optional. A string that specifies the Clipboard format of the data.

[**link**   Boolean]   Optional. **True** to establish a link to the source of the pasted data. If the source data isn't suitable for linking or the source application doesn't support linking, this parameter is ignored. The default value is **False**.

[**display as icon**   Boolean]   Optional. **True** to display the pasted as an icon. The default value is **False**.

[**icon file name**   Unicode text]   Optional. The name of the file that contains the icon to use if **display as icon** is **True**.

[**icon index**   integer]   Optional. The index number of the icon within the icon file.

[**icon label**   Unicode text]   Optional. The text label of the icon.

[**no HTML formatting**   Boolean]   Optional. **True** to remove all formatting, hyperlinks, and images from HTML when pasted onto a worksheet. **False** to paste HTML as is. The default value is **False**.

Remarks

You must select the destination range before you use this command.

This command may modify the sheet selection, depending on the contents of the Clipboard.

Example

This example pastes a Microsoft Word document object from the Clipboard to cell D1 on Sheet1.

```
select sheet "Sheet1"
select range "D1"
paste special on worksheet active sheet ¬
        format "Microsoft Word 8.0 Document Object"
```

This example pastes the same Microsoft Word document object and displays it as an icon.

```
paste special on worksheet active sheet ¬
        format "Microsoft Word 8.0 Document Object" ¬
        with display as icon
```

Command: paste worksheet

Pastes the contents of the Clipboard onto the sheet.

Syntax

paste worksheet   sheet   Required. An expression that returns a **sheet** object.

[**destination**   range]   Optional. A range that specifies where the Clipboard contents should be pasted. Can be a **range** object, an A1-style range reference, or a named range. If this argument is omitted, the current selection is used. This argument can be specified only if the contents of the Clipboard can be pasted into a range. If this argument is specified, the **link** argument cannot be used.

[**link**   Boolean]   Optional. **True** to establish a link to the source of the pasted data. If this argument is specified, the **destination** argument cannot be used. The default value is **false**.

Remarks

If you don't specify the **destination** argument, you must select the destination range before you use this command.

This command may modify the sheet selection, depending on the contents of the Clipboard.

Example

This example copies data from cells C1:C5 on Sheet1 to cells D1:D5 on Sheet1.

```
select sheet "Sheet1"
copy range range "C1:C5"
paste worksheet sheet "Sheet1" destination range "D1:D5"
```

Command: `pivot select`

Selects part of a PivotTable.

Syntax

pivot select   pivot table   Required. An expression that returns a **pivot table** object.

 name   Unicode text   Required. The selection, in standard PivotTable selection format (see below).

 mode   enumeration   Required. Specifies the structured selection mode. Can be one of the following:

- **selection mode label only**

- **selection mode data and label**

- **selection mode data only**

- **selection mode origin**

- **selection mode button**

- **selection mode blanks**

Standard PivotTable selection format

A string expression used to specify part of a PivotTable.

You can refer to a particular cell only if the PivotTable selection string contains the names of all the items used to identify individual cells in the selection. The number of items in that string should be equal to the number of fields in the view for a cell in a normal data area. If the cell is used in calculating a subtotal or grand total, the number of items in the string would be fewer (including 0 [zero] for the intersection of the column and row grand totals).

The item names in the string can appear in any order. If an item name is ambiguous because it appears in another field as well, it must be qualified by "Field[Item]." If an item name contains symbols and spaces, or if it doesn't start with an alphabetical character, it should be enclosed in single quotation marks. If an item name contains embedded single quotation marks, each of these marks must be converted to two single quotation marks. Quotation marks aren't required for spaces if the name is unambiguous, and they're not required for unqualified names that begin with numbers.

Example

This example selects all date labels in PivotTable one.

```
pivot select (pivot table 1 of worksheet 1) name "date[ALL]" ¬
        mode selection mode label only
```

Command: `previous Excel comment`

Returns an **Excel comment** object that represents the previous comment.

Syntax

previous Excel comment   Excel comment   Required. An expression that returns an **Excel comment** object.

Remarks

This command works only on one sheet. Using this command on the first comment on a sheet returns **missing value** (not the last comment on the previous sheet).

Example

This example hides the previous comment.

```
set visible of (previous Excel comment ¬
        (Excel comment of range "A1")) to false
```

Command: `print out`

Prints the object.

Syntax

print out   window/sheet/workbook   Required. An expression that returns a **window**, **sheet**, or **workbook** object.

[**from**   integer]   Optional. The number of the page at which to start printing. If this argument is omitted, printing starts at the beginning.

[**to** integer]   Optional. The number of the last page to print. If this argument is omitted, printing ends with the last page.

[**copies**   integer]   Optional. The number of copies to print. If this argument is omitted, one copy is printed.

[**preview**   Boolean]   Optional. **True** to have Excel invoke print preview before printing the object. **False** (or omitted) to print the object immediately.

[**active printer**   Unicode text]   Optional. This argument is not currently supported.

[**print to file**   Boolean]   Optional. This argument is not currently supported.

[**collate**   Boolean]   Optional. **True** to collate multiple copies.

Remarks

"Pages" in the descriptions of **from** and **to** refers to printed pages, not overall pages in the sheet or workbook.

This command applies to the **window** object only when it's the Info window.

Example

This example prints the active sheet.

```
print out active sheet
```

Command: `print preview`

Shows a preview of the object as it would look when printed.

Syntax

print preview window/sheet/workbook Required. An expression that returns a **window**, **sheet**, or **workbook** object.

[**enable changes** Boolean] Optional. Controls access to the **Page Setup** dialog box and the ability to change margins from the Preview window by enabling or disabling the **Setup** and **Margins** buttons, respectively.

Example

This example displays Sheet1 in print preview.

```
print preview sheet "Sheet1"
```

Command: `protect sharing`

Saves the workbook and protects it for sharing.

Syntax

protect sharing workbook An expression that returns a **workbook** object.

[**file name** Unicode text] Optional. A string indicating the name of the saved file. You can include a full path; if you don't, Excel saves the file in the current folder.

[**password** Unicode text] Optional. A case-sensitive string indicating the protection password to be given to the file. Should be no longer than 15 characters.

[**write reserved password** Unicode text] Optional. A string indicating the write-reservation password for this file. If a file is saved with the password and the password isn't supplied when the file is opened, the file is opened read-only.

[**read only recommended** Boolean] Optional. **True** to display a message when the file is opened recommending that the file be opened read-only.

[**create backup** Boolean] Optional. **True** to create a backup file.

[**sharing password** Unicode text] Optional. A string indicating the password to be used to protect the file for sharing.

Example

This example saves workbook one and protects it for sharing.

```
protect sharing active workbook password "drowssap" ¬
        sharing password "gnirahs"
```

Command: `protect workbook`

Protects a workbook so that it cannot be modified.

Syntax

protect workbook   workbook   Required. An expression that returns a **workbook** object.

[**password**   Unicode text]   Optional. A string that specifies a case-sensitive password for the
workbook. If this argument is omitted, you can unprotect the workbook without using a
password. Otherwise, you must specify the password to unprotect the workbook. If you forget
the password, you cannot unprotect the workbook. It's a good idea to keep a list of your
passwords and their corresponding document names in a safe place.

[**structure**   Boolean]   Optional. **True** to protect the structure of the workbook (the relative position of the
sheets). The default value is **false**.

[**windows**   Boolean]   Optional. **True** to protect the workbook windows. If this argument is omitted, the
windows aren't protected.

Example

This example protects the active workbook.

```
protect workbook active workbook password "drowssap"
```

Command: `protect worksheet`

Protects a worksheet so that it cannot be modified.

Syntax

protect worksheet   worksheet   Required. An expression that returns a **worksheet** object.

[**password**   Unicode text]   Optional. A string that specifies a case-sensitive password for the
sheet. If this argument is omitted, you can unprotect the sheet without using a password.
Otherwise, you must specify the password to unprotect the sheet. If you forget the password,
you cannot unprotect the sheet. It's a good idea to keep a list of your passwords and their
corresponding document names in a safe place.

[**drawing objects**   Boolean]   Optional. **True** to protect shapes. The default value is **false**.

[**worksheet contents**   Boolean]   Optional. **True** to protect contents. For a chart, this protects the entire chart.
For a worksheet, this protects the individual cells. The default value is **true**.

[**scenarios**   Boolean]   Optional. **True** to protect scenarios. This argument is valid only for worksheets. The
default value is **true**.

[**user interface only**   Boolean]   Optional. **True** to protect the user interface, but not macros. If this argument
is omitted, protection applies both to macros and to the user interface.

Remarks

If you apply the **protect worksheet** command with the *user interface only* argument set to **true** to a worksheet and then save the workbook, the entire worksheet (not just the interface) will be fully protected when you reopen the workbook. To unprotect the worksheet but re-enable user interface protection after the workbook is opened, you must again apply the **protect worksheet** command with *user interface only* set to **true**.

Example

This example protects the active worksheet.

```
protect worksheet active sheet password "drowssap"
```

Command: purge change history now

Removes entries from the change log for the specified workbook.

Syntax

purge change history now   workbook   An expression that returns a **workbook** object.

   days   integer   Required. The number of days that changes in the change log are to be retained.

   [**sharing password**   Unicode text]   Optional. The password that removes protection from the workbook for sharing. If the workbook is protected for sharing with a password and this argument is omitted, the user is prompted for the password.

Example

This example removes all changes that are more than one day old from the change log for the active workbook.

```
purge change history now active workbook days 1
```

Command: refresh

Updates the PivotTable cache.

Syntax

refresh   pivot cache   Required. An expression that returns a **pivot cache** object.

Example

This example refreshes the PivotTable.

```
refresh pivot cache of pivot table 1 of sheet 1
```

Command: refresh all

Refreshes all external data ranges and PivotTables in the workbook.

Syntax

refresh all   workbook   Required. An expression that returns a **workbook** object.

Remarks

The refresh order is undefined.

Example

This example refreshes all external data ranges and PivotTables in the workbook.

```
refresh all active workbook
```

Command: refresh query table

Updates the query table.

Syntax

refresh query table   query table   Required. An expression that returns a **query table** object.

  [**background query**   Boolean]   Optional. Used only with query tables. **True** to return control to
      the procedure as soon as a database connection is made and the query is submitted (the query
      is updated in the background). **False** to return control to the procedure only after all data has
      been fetched to the worksheet. If this argument isn't specified, the setting of the *background
      query* property of the **query table** object determines the query mode.

Remarks

The **refresh query table** command causes Excel to connect to the query table's data source, execute
the SQL query, and return data to the query table destination range. Until this command is called,
the query table doesn't communicate with the data source.

When making the connection to the ODBC data source, Excel uses the connection string specified by
the *connection* property of the **query table** object. If the specified connection string is missing
required values, the ODBC driver manager or the ODBC driver (or both) will display modal dialog
boxes to prompt the user for the required information. If the *display alerts* property of the
application object is **false**, dialog boxes aren't displayed and the **refresh query table** command fails
with an Insufficient Connection Information exception.

After Excel makes a successful connection, it stores the completed connection string so that prompts
won't be displayed for subsequent calls to the **refresh query table** command during the same
editing session. You can obtain the completed connection string by examining the value of the
connection property.

After the database connection is made, the SQL query is validated. If the query isn't valid, the
refresh query table command fails with the SQL Syntax Error exception.

If the query requires parameters, the parameters must have been initialized with parameter binding information. If not enough parameters have been bound, the **refresh query table** command fails with the Parameter Error exception. If parameters are set to prompt for their values, dialog boxes are displayed to the user regardless of the setting of the *display alerts* property. If the user cancels a parameter dialog box, the **refresh query table** command halts and returns **false**. If there are extra parameters bound, the extra parameters are ignored.

The **refresh query table** command returns **true** if the query is successfully completed or started; it returns **false** if the user cancels a connection or parameter dialog box.

To see whether the number of fetched rows exceeded the number of available rows on the worksheet, examine the *fetched row overflow* property of the **query table** object. This property is initialized every time the **refresh query table** command is called.

Example
This example refreshes query table 1 in worksheet 1.

```
refresh query table query table 1 of sheet 1
```

Command: refresh table

Refreshes the PivotTable from the source data. Returns **true** if it's successful.

Syntax

refresh table   pivot table   Required. An expression that returns a **pivot table** object.

Example
This example refreshes the PivotTable.

```
set pvtTable to pivot table of range "A3" of sheet "Sheet3"
refresh pvtTable
```

Command: register xll

Loads an XLL code resource and automatically registers the functions and commands contained in the resource.

Syntax

register xll

  filename   Unicode text   Required. Specifies the name of the XLL file to be loaded.

Remarks
This command returns **true** if the code resource is successfully loaded; otherwise, the command returns **false**.

Example
This example loads an XLL file and registers the functions and commands in the file.

```
register xll filename "XLMAPI.XLL"
```

Command: `reject all changes`

Rejects all changes in the specified shared workbook.

Syntax

reject all changes workbook   Required. An expression that returns a **workbook** object.

[**when** Unicode text]   Optional. Specifies when all the changes are rejected.

[**who** Unicode text]   Optional. Specifies by whom all the changes are rejected.

[**where** Unicode text]   Optional. Specifies where all the changes are rejected.

Example

This example rejects all changes in the active workbook.

```
reject all changes active workbook
```

Command: `remove all items`

Removes all entries from an Excel list box or combo box.

Syntax

remove all items listbox/dropdown   Required. An expression that returns a **listbox** or **dropdown** object.

Example

This example removes all items from a list box.

```
remove all items listbox 1 of sheet 1
```

Command: `remove item`

Removes one or more items from a list box or combo box.

Syntax

remove item listbox/dropdown   Required. An expression that returns a **listbox** or **dropdown** object.

entry index integer   Required. The number of the first item to be removed. Valid values are from 1 to the number of items in the list (returned by the *number of items in list* property of the **listbox** or **dropdown** object).

[**count** integer]   Optional. The number of items to be removed, starting at item **entry index**. If this argument is omitted, one item is removed. If **entry index** + **count** exceeds the number of items in the list, all items from **entry index** through the end of the list are removed without an error.

Remarks

If the specified object has a fill range defined for it, this command fails.

To remove all entries from an Excel list box or combo box, use the **remove all items** command.

Example

This example removes the selected item from a list box.

```
remove item listbox 1 of sheet 1 entry index 1
```

Command: remove user

Disconnects the specified user from the shared workbook.

Syntax

remove user   workbook   Required. An expression that returns a **workbook** object.

   entry index   integer   Required. The user index.

Example

This example disconnects user two from the shared workbook.

```
remove user workbook 2 entry index 2
```

Command: reset all page breaks

Resets all page breaks on the specified worksheet.

Syntax

reset all page breaks   sheet   Required. An expression that returns a **sheet** object.

Example

This example resets all page breaks on worksheet one.

```
reset all page breaks sheet 1
```

Command: reset colors

Resets the color palette to the default colors.

Syntax

reset colors   workbook   Required. An expression that returns a **workbook** object.

Example

This example resets the color palette in the active workbook.

```
reset colors active workbook
```

Command: `run auto macros`

Runs the Auto_Open, Auto_Close, Auto_Activate, or Auto_Deactivate macro attached to the workbook.

Syntax

run auto macros workbook Required. An expression that returns a **workbook** object.

  which enumeration Required. The macros to run. Can be one of the following:

Value	Description
auto open	Auto_Open macros
auto close	Auto_Close macros
auto activate	Auto_Activate macros
auto deactivate	Auto_Deactivate macros

Example

This example opens the workbook Analysis.xls and then runs its Auto_Open macro.

```
open workbook workbook file name "ANALYSIS.XLS"
run auto macros active workbook which auto close
```

This example runs the Auto_Close macro for the active workbook and then closes the workbook.

```
run auto macros active workbook which auto close
close active workbook
```

Command: `run VB Macro`

Runs a Visual Basic macro or calls a function. This can be used to run a macro written in Visual Basic or the Excel 4.0 macro language, or to run a function in a DLL or XLL.

Syntax

run VB macro range Optional for **application**, required for **range**. An expression that returns the application that contains the VB macro, or a range on a macro sheet that contains an Excel 4.0 macro. Can be a **range** object, an A1-style range reference, a named range, or the name of the VB macro to run.

  [**arg1, arg2, ... arg30** anything] Optional. The arguments that should be passed to the function.

Remarks

You cannot use named arguments with this command. Arguments must be passed by position.

The **run VB macro** command returns whatever the called VB macro returns. **Range** objects passed as arguments to the VB macro are converted to values (by applying the *value* property to the **range** object).

Example

This example shows how to call the function macro My_Func_Sum, which is defined on the macro sheet Mycustom.xlm (the macro sheet must be open). The function takes two numeric arguments (1 and 5, in this example).

```
set mySum to run VB Macro "MYCUSTOM.XLM!My_Func_Sum" arg1 1 arg2 5

display dialog "Macro result: " & mySum
```

Command: save as

Saves changes to the sheet in a different file.

Syntax

save as   sheet   Required. An expression that returns a **sheet** object.

  filename   Unicode text   Required. A string that indicates the name of the file to be saved. You can include a full path; if you don't, Excel saves the file in the current folder.

  [**file format**   enumeration]   Optional. The file format to use when you save the file.

  The following formats are available only in the Japanese version of Excel: **WJ2WD1 file format**, **Excel 2 east asian file format**, and **works 2 east asian file format**.

  Can be one of the following:

add in file format	**template file format**
CSV file format	**current platform text file format**
CSV Mac file format	**text Mac file format**
CSV MSDos file format	**text MSDos file format**
CSV Windows file format	**text printer file format**
DBF2 file format	**text windows file format**
DBF3 file format	**WJ2WD1 file format**
DBF4 file format	**Works1 file format**
DIF file format	**Works 1 all file format**
Excel2 file format	**Works 1 fmt file format**
Excel 2 east asian file format	**Works3 file format**
Excel3 file format	**Works 3 fm 3 file format**
Excel4 file format	**Works4 file format**
Excel 4 workbook file format	**works file format**
Excel7 file format	**works 2 east asian file format**
Excel 9795 file format	**WQ1 file format**
international add in file format	**WJ3 file format**
international macro file format	**WJ3FJ3 file format**
workbook normal file format	**HTML file format**
SYLK file format	**XML spreadsheet file format**

[**password**   Unicode text]   Optional. A case-sensitive string (no more than 15 characters) that indicates the protection password to be given to the file.

[**write reservation password**   Unicode text]   Optional. A string that indicates the write-reservation password for this file. If a file is saved with the password and the password isn't supplied when the file is opened, the file is opened as read-only.

[**read only recommended**   Boolean]   Optional. **True** to display a message when the file is opened, recommending that the file be opened as read-only.

[**create backup**   Boolean]   Optional. **True** to create a backup file.

[**add to most recently used list**   Boolean]   Optional. **True** to add this workbook to the list of recently used files. The default value is **false**.

Example

This example creates a new workbook, prompts the user for a file name, and then saves the workbook.

```
set newBook to make new workbook
set fName to get save as filename
save as (worksheet "Sheet1" of newBook) filename fName
```

Command: save workbook as

Saves changes to the workbook in a different file.

Syntax

save workbook as   workbook   Required. An expression that returns a **workbook** object.

[**filename**   Unicode text]   Optional. A string that indicates the name of the file to be saved. You can include a full path; if you don't, Excel saves the file in the current folder.

[**file format** enumeration] Optional. The file format to use when you save the file.

The following formats are available only in the Japanese version of Excel: **WJ2WD1 file format**, **Excel 2 east asian file format**, and **works 2 east asian file format**.

Can be one of the following:

add in file format	**template file format**
CSV file format	**current platform text file format**
CSV Mac file format	**text Mac file format**
CSV MSDos file format	**text MSDos file format**
CSV Windows file format	**text printer file format**
DBF2 file format	**text windows file format**
DBF3 file format	**WJ2WD1 file format**
DBF4 file format	**Works1 file format**
DIF file format	**Works 1 all file format**
Excel2 file format	**Works 1 fmt file format**
Excel 2 east asian file format	**Works3 file format**
Excel3 file format	**Works 3 fm 3 file format**
Excel4 file format	**Works4 file format**
Excel 4 workbook file format	**works file format**
Excel7 file format	**works 2 east asian file format**
Excel 9795 file format	**WQ1 file format**
international add in file format	**WJ3 file format**
international macro file format	**WJ3FJ3 file format**
workbook normal file format	**HTML file format**
SYLK file format	**XML spreadsheet file format**

[**password** Unicode text] Optional. A case-sensitive string (no more than 15 characters) that indicates the protection password to be given to the file.

[**write reservation password** Unicode text] Optional. A string that indicates the write-reservation password for this file. If a file is saved with the password and the password isn't supplied when the file is opened, the file is opened as read-only.

[**read only recommended** Boolean] Optional. **True** to display a message when the file is opened recommending that the file be opened as read-only.

[**create backup** Boolean] Optional. **True** to create a backup file.

[**access mode** enumeration] Optional. The workbook access mode. Can be one of the following: **shared** (shared list), **exclusive** (exclusive mode), or **no change** (don't change the access mode). If this argument is omitted, the access mode isn't changed. This argument is ignored if you save a shared list without changing the file name. To change the access mode, use the **exclusive access** command.

[**conflict resolution** enumeration] Optional. Specifies the way change conflicts are resolved if the workbook is a shared list. Can be one of the following: **user resolution** (display the conflict-resolution dialog box), **local session changes** (automatically accept the local user's changes), or **other session changes** (accept other changes instead of the local user's changes). If this argument is omitted, the conflict-resolution dialog box is displayed.

[**add to most recently used list** Boolean] Optional. **True** to add this workbook to the list of recently used files. The default value is **false**.

Example

This example creates a new workbook, prompts the user for a file name, and then saves the workbook.

```
set newBook to make new workbook
set fName to get save as filename
save workbook as newBook filename fName
```

Command: save workspace

Saves the current workspace.

Syntax

save workspace

  [**workspace file name** Unicode text] Optional. The saved file name.

Example

This example saves the current workspace as "saved workspace.xlw". Before you run this example the workbook must be saved.

```
save workspace workspace file name "saved workspace.xlw"
```

Command: scroll workbook tabs

Scrolls through the workbook tabs at the bottom of the window. Does not affect the active sheet in the workbook.

Syntax

scroll workbook tabs window Required. An expression that returns a **window** object.

  [**sheets** integer] Optional. The number of sheets to scroll by. To scroll forward, use a positive number; to scroll backward, use a negative number; to not scroll at all, use 0 (zero). You must specify **sheets** if you don't specify **position**.

  [**position** enumeration] Optional. To scroll to the first sheet, use **scroll tab position first**; to scroll to the last sheet, use **scroll tab position last**. You must specify **position** if you don't specify **sheets**.

Example

This example scrolls through the workbook tabs to the last sheet in the workbook.

```
scroll workbook tabs active window position scroll tab position last
```

Command: `send to back`

Sends the object to the back of the z-order.

Syntax

send to back   button/checkbox/option
button/scrollbar/listbox/groupbox/dropdown/spinner/label/textbox   Required. An expression
that returns one of the listed objects.

Example

This example sends button 1 on Sheet1 to the back of the z-order.

```
send to back button 1 of sheet "Sheet1"
```

Command: `set background picture`

Sets the background graphic for a worksheet.

Syntax

set background picture   sheet   Required. An expression that returns a **sheet** object.

  picture file name   Unicode text   Required. The name of the graphic file.

Example

This example sets the background graphic for worksheet one.

```
set background picture sheet 1 picture file name ¬
        "Macintosh HD:Users:Shared:watermark.gif"
```

Command: `set default chart`

Specifies the name of the chart template that Excel will use when creating new charts.

Syntax

set default chart

  [**format name**   enumeration]   Optional. Specifies the name of a custom autoformat. This name
     can be a string naming a custom autoformat, or it can be the special value **built in chart
     template** to specify the built-in chart template.

  [**gallery**   enumeration]   Optional. For a custom chart, specifies from which gallery to choose the chart. Can
     be **built in chart type** (uses the Chart Gallery files) or **custom chart** (uses the Custom User Gallery files
     saved in the Office folder or Preferences folder).

Example

This example sets the default chart template to a built-in chart format.

```
set default chart format name column clustered gallery built in chart type
```

Command: set FileMaker criteria

Sets the criteria for creating an Excel query table against a FileMaker database.

Syntax

set FileMaker criteria   query table   Required. An expression that returns a **query table** object.

criteria index   integer   Required. An index into the number of criteria that have been set.

field name   Unicode text   Required. The name of the field being queried.

operator   enumeration   Required. The operator used between **field name** and **clause text**. Can be one of the following:

criteria equals	**criteria greater than**
criteria less than or equal to	**criteria begins with**
criteria greater than or equal to	**criteria ends with**
criteria less than	**criteria contains**

clause text   Unicode text   Required. The clause against which **field name** is tested.

condition   enumeration   Required. Operator used to add more criteria. Can be one of the following: **no condition**, **and condition**, or **or condition**.

Example

This example performs a query against a FileMaker database, returning cases in the NorthCentral region where sales of particular items have exceeded 5,000. It specifies two sets of criteria and that data from three fields be presented in a new list object on the active worksheet. The example assumes the existence of a FileMaker database named "Regions."

```
set QT to (make new query table with properties ¬
        {connection:"FILEMAKER;HD:Desktop Folder:2000:Regions", ¬
        destination:range "A1"})
set FileMaker fields of QT to ¬
        {"Region", 0, "Item", 0, "Sales", 0}
set FileMaker num criteria to 2
set FileMaker criteria QT criteria index 1 field name ¬
        "Region" operator criteria equals ¬
        clause text "NorthCentral" condition no condition
set FileMaker criteria QT criteria index 2 field name ¬
        "Sales" operator criteria greater than ¬
        clause text "5000" condition and condition
set enable refresh of QT to true
set use list object of QT to true
```

Command: `set list item`

Sets the text entries in the specified list box or a combo box as an array of strings, or sets a single text entry. An error occurs if there are no entries in the list.

Syntax

set list item   listbox/dropdown   Required. An expression that returns a **listbox** or **dropdown** object.

   [**entry index**   integer]   Optional. The index number of a single text entry to be set. If this argument is omitted, the entire list is set as an array of strings.

   rhs   Unicode text   Required. The new text to be set.

Remarks

Using this command clears any range specified by the *list fill range* property of the **listbox** or **dropdown** object.

Example

This example sets entry four in a list box on worksheet one.

```
set list item listbox 1 of sheet 1 entry index 4 rhs "gadgets"
```

Command: `set subtotals`

Sets subtotals displayed with the specified field. Valid only for non-data fields.

Syntax

set subtotals   pivot field   Required. An expression that returns a **pivot field** object.

   [**subtotal index**   enumeration]   Optional. Specifies the subtotal to be set. Can be one of the following:

automatic subtotal	**product subtotal**
sum subtotal	**count numbers subtotal**
count subtotal	**standard deviation**
average subtotal	**standard deviation P**
maximum value	**variance subtotal**
minimum value	**variance P subtotal**

   Subtotals are set as follows:

1	automatic	7	product
2	sum	8	count nums
3	count	9	StdDev
4	average	10	StdDevp
5	max	11	Var
6	min	12	Varp

value   Boolean   Required. Specifies the subtotal to be set as follows:

1	automatic	7	product
2	sum	8	count nums
3	count	9	StdDev
4	average	10	StdDevp
5	max	11	Var
6	min	12	Varp

Example

This example sets subtotals for pivot field 1 to automatic.

```
set subtotals pivot field 1 of pivot table 1 of active sheet value 1
```

Command: show

Displays the built-in dialog box and waits for the user to input data, or shows the scenario by inserting its values on the worksheet. The affected cells are the changing cells of the scenario.

Syntax

show   dialog/scenario   Required. An expression that returns a **dialog** or **scenario** object. For dialogs, can be one of the following:

dialog open	**dialog change link**	**dialog options general**
dialog open links	**dialog app move**	**dialog filter advanced**
dialog save as	**dialog app size**	**dialog mail next letter**
dialog file delete	**dialog main chart type**	**dialog data label**
dialog page setup	**dialog overlay chart type**	**dialog insert title**
dialog print	**dialog open mail**	**dialog font properties**
dialog printer setup	**dialog send mail**	**dialog macro options**
dialog arrange all	**dialog standard font**	**dialog workbook unhide**
dialog window size	**dialog consolidate**	**dialog workbook name**
dialog window move	**dialog sort special**	**dialog gallery custom**
dialog run	**dialog gallery threeD area**	**dialog add chart autoformat**
dialog set print titles	**dialog gallery threeD column**	**dialog chart add data**
dialog font	**dialog gallery threeD line**	**dialog tab order**
dialog display	**dialog gallery threeD pie**	**dialog subtotal create**
dialog protect document	**dialog view threeD**	**dialog workbook tab split**
dialog calculation	**dialog goal seek**	**dialog workbook protect**
dialog extract	**dialog workgroup**	**dialog scrollbar properties**
dialog data delete	**dialog fill group**	**dialog pivot show pages**
dialog sort	**dialog update link**	**dialog text to columns**
dialog data series	**dialog promote**	**dialog format charttype**
dialog table	**dialog demote**	**dialog pivot field group**
dialog format number	**dialog show detail**	**dialog pivot field ungroup**
dialog alignment	**dialog object properties**	**dialog checkbox properties**
dialog style	**dialog save new object**	**dialog label properties**
dialog border	**dialog apply style**	**dialog listbox properties**
dialog cell protection	**dialog assign to object**	**dialog editbox properties**

dialog column width
dialog clear
dialog paste special
dialog edit delete
dialog insert
dialog paste names
dialog define name
dialog create names
dialog formula goto
dialog formula find
dialog gallery area
dialog gallery bar
dialog gallery column
dialog gallery line
dialog gallery pie
dialog gallery scatter
dialog combination
dialog gridlines
dialog axes
dialog attach text
dialog patterns
dialog main chart
dialog overlay
dialog scale
dialog format legend
dialog format text
dialog parse
dialog unhide
dialog workspace
dialog activate
dialog copy picture
dialog delete name
dialog delete format
dialog new
dialog row height
dialog format move
dialog format size
dialog formula replace
dialog select special
dialog apply names
dialog replace font
dialog split
dialog outline
dialog save workbook
dialog copy chart
dialog format font
dialog note
dialog set update status
dialog color palette

dialog object protection
dialog show toolbar
dialog print preview
dialog edit color
dialog format main
dialog format overlay
dialog edit series
dialog define style
dialog gallery radar
dialog zoom
dialog insert object
dialog size
dialog move
dialog format auto
dialog gallery threeD bar
dialog gallery threeD surface
dialog customize toolbar
dialog workbook add
dialog workbook move
dialog workbook copy
dialog workbook options
dialog save workspace
dialog chart wizard
dialog assign to tool
dialog placement
dialog fill workgroup
dialog workbook new
dialog scenario cells
dialog scenario add
dialog scenario edit
dialog scenario summary
dialog pivot table wizard
dialog pivot field properties
dialog options calculation
dialog options edit
dialog options view
dialog add in manager
dialog menu editor
dialog attach toolbars
dialog options chart
dialog vba insert file
dialog vba procedure definition
dialog routing slip
dialog mail logon
dialog insert picture
dialog gallery doughnut
dialog chart trend
dialog workbook insert
dialog options transition

dialog open text
dialog pushbutton properties
dialog filter
dialog function wizard
dialog save copy as
dialog options lists add
dialog series axes
dialog series x
dialog series y
dialog errorbar x
dialog errorbar y
dialog format chart
dialog series order
dialog mail edit mailer
dialog standard width
dialog scenario merge
dialog summary info
dialog find file
dialog active cell font
dialog vba make add in
dialog file sharing
dialog autocorrect
dialog custom views
dialog insert name label
dialog series shape
dialog chart options data labels
dialog chart options data table
dialog set background picture
dialog data validation
dialog chart type
dialog chart location
dialog chart source data
dialog series options
dialog pivot table options
dialog pivot solve order
dialog pivot calculated field
dialog pivot calculated item
dialog conditional formatting
dialog insert hyperlink
dialog protect sharing
dialog phonetic
dialog import text file
dialog calculator
dialog web options general
dialog web options pictures
dialog web options files
dialog web options fonts
dialog web options encoding

Remarks

For built in dialog boxes, this command returns **true** if the user clicks **OK**, or it returns **false** if the user clicks **Cancel**.

You can use a single dialog box to change many properties at the same time. For example, you can use the **Format Cells** dialog box to change all the properties of the **font** object.

Example

This example displays the **Open** dialog box.

```
show (get dialog dialog open)
```

Command: show all data

Makes all rows of the currently filtered list visible. If AutoFilter is in use, this command changes the arrows to "All."

Syntax

show all data   sheet   Required. An expression that returns a **sheet** object.

Example

This example makes all data on Sheet1 visible. The example should be run on a worksheet that contains a list you filtered using the **autofilter** command.

```
show all data sheet "Sheet1"
```

Command: show custom view

Displays the custom view.

Syntax

show custom view   custom view   Required. An expression that returns a **custom view** object.

Example

This example displays the custom view named "My View."

```
show custom view custom view "My View" of active window
```

Command: show data form

Displays the data form associated with the worksheet.

Syntax

show data form   sheet   Required. An expression that returns a **sheet** object.

Remarks

The script pauses while you're using the data form. When you close the data form, the script resumes at the line following the **show data form** command.

This command runs the custom data form, if one exists.

Example

This example displays the data form for Sheet1.

```
show data form sheet 1
```

Command: show levels

Displays the specified number of row and/or column levels of an outline.

Syntax

show levels outline   Required. An expression that returns an **outline** object.

[**row levels** integer]   Optional. Specifies the number of row levels of an outline to display. If the outline has fewer levels than the number specified, Excel displays all the levels. If this argument is 0 (zero) or is omitted, no action is taken on rows.

[**column levels** integer]   Optional. Specifies the number of column levels of an outline to display. If the outline has fewer levels than the number specified, Excel displays all the levels. If this argument is 0 (zero) or is omitted, no action is taken on columns.

Remarks

You must specify at least one argument.

Example

This example displays row levels one through three and column level one of the outline on Sheet1.

```
show levels outline object of sheet "Sheet1" row levels 3 column levels 1
```

Command: show pages

Creates a new PivotTable report for each item in the page field. Each new PivotTable report is created on a new worksheet.

Syntax

show pages pivot table   Required. An expression that returns a **pivot table** object.

[**page field** Unicode text]   Optional. A string that names a single page field in the PivotTable report.

Example

This example creates a new PivotTable report for each item in the page field, which is the field named "Country."

```
set pvtTable to pivot table of range "A3" of worksheet "Sheet1"
show pages pvtTable page field "Country"
```

Command: `small scroll`

Scrolls the contents of the window by rows or columns.

Syntax

small scroll   window/pane   Required. An expression that returns a **window** object.

  [**down**   integer]   Optional. The number of rows to scroll the contents down.

  [**up**   integer]   Optional. The number of rows to scroll the contents up.

  [**to right**   integer]   Optional. The number of columns to scroll the contents to the right.

  [**to left**   integer]   Optional. The number of columns to scroll the contents to the left.

Remarks

If **down** and **up** are both specified, the contents of the window are scrolled by the difference of the arguments. For example, if **down** is 3 and **up** is 6, the the contents are scrolled up three rows.

If **to left** and **to right** are both specified, the contents of the window are scrolled by the difference of the arguments. For example, if **to left** is 3 and **to right** is 6, the contents are scrolled to the right three columns.

Any of these arguments can be a negative number.

Example

This example scrolls the contents of the active window of Sheet1 down three rows.

```
small scroll active window down 3
```

Command: `undo`

Cancels the last user-interface action.

Syntax

undo

Remarks

This command undoes only the last action taken by the user before running the script or Visual Basic macro, and it must be the first line in the script or macro.

Example

This example cancels the last user-interface action. The example must be the first line in a script.

```
undo
```

Command: `union`

Returns the union of two or more ranges.

Syntax

union

  range1 range Required. One of the ranges that will be included in the union range.

  range2 range Required. One of the ranges that will be included in the union range.

  [range3, range4, ... range30 range] Optional. More ranges that will be included in the union range.

Example

This example fills the union of two named ranges, Range1 and Range2, with the formula =RAND()

```
set bigRange to (union range1 reference range of named item "Range1" ¬
        range2 reference range of named item "Range2")
set formula of bigRange to "=RAND()"
```

Command: `unprotect`

Removes protection from a sheet or workbook. This command has no effect if the sheet or workbook isn't protected.

Syntax

unprotect sheet/workbook Required. An expression that returns a **workbook** or **sheet** object.

  [**password** Unicode text] Optional. A string that denotes the case-sensitive password to use to unprotect the sheet or workbook. If the sheet or workbook isn't protected with a password, this argument is ignored. If you omit this argument for a sheet that's protected with a password, you'll be prompted for the password. If you omit this argument for a workbook that's protected with a password, the command fails.

Remarks

If you forget the password, you cannot unprotect the sheet or workbook. It's a good idea to keep a list of your passwords and their corresponding document names in a safe place.

Example

This example removes protection from the active workbook.

```
unprotect active workbook
```

Command: `unprotect sharing`

Turns off protection for sharing and saves the workbook.

Syntax

unprotect sharing   workbook   Required. An expression that returns a **workbook** object.

  [**sharing password**   Unicode text]   Optional. The workbook password.

Example

This example turns off protection for sharing and saves the active workbook.

```
unprotect sharing active workbook sharing password "drowssap"
```

Command: `update`

Updates the PivotTable.

Syntax

update   pivot table   Required. An expression that returns a **pivot table** object.

Example

This example updates PivotTable one on Sheet1.

```
update pivot table 1 of sheet "Sheet1"
```

Command: `update from file`

Updates a read-only workbook from the saved disk version of the workbook if the disk version is more recent than the copy of the workbook that is loaded in memory. If the disk copy hasn't changed since the workbook was loaded, the in-memory copy of the workbook isn't reloaded.

Syntax

update from file   workbook   Required. An expression that returns a **workbook** object.

Remarks

This command is useful when a workbook is opened as read-only by user A and opened as read/write by user B. If user B saves a newer version of the workbook to disk while user A still has the workbook open, user A cannot get the updated copy without closing and reopening the workbook and losing view settings. The **update from file** command updates the in-memory copy of the workbook from the disk file.

Example

This example updates the active workbook from the disk version of the file.

```
update from file active workbook
```

Command: `update link`

Updates an Excel or OLE link (or links).

Syntax

update link   workbook   Required. An expression that returns a **workbook** object.

[**name**   Unicode text]   Optional. The name of the Excel or OLE link to be updated, as returned from the **link sources** command.

[**type**   enumeration]   Optional. The link type. Can be **link type Excel links** or **link type OLE links**. The default value is **link type Excel links**.

Example

This example updates all links in the active workbook.

```
update link active workbook name (link sources active workbook)
```

Command: `use default folder suffix`

This command is not currently supported.

Command: `wait`

Pauses a running script until a specified time. Returns **true** if the specified time has arrived.

Important   The **wait** command suspends all Excel activity and may prevent you from performing other operations on your computer while **wait** is in effect. However, background processes such as printing and recalculation continue.

Syntax

wait

time to wait   Unicode text   Required. The time at which you want the script to resume, in Excel date format.

Example

This example pauses a running script or Visual Basic macro until 6:23 P.M. today.

```
wait time to wait "18:23:00"
```

Command: `web page preview`

Displays a preview of the specified workbook as it would look if saved as a Web page.

Syntax

web page preview   workbook   Required. An expression that returns a **workbook** object.

Example

This example displays a preview of the first workbook as a Web page.

```
web page preview workbook 1
```

Drawing Suite

Drawing Suite Class

Class: arc

Plural

arcs

Elements

character

Represents an arc graphic.

Use **arc** *index*, where *index* is the arc name or the index number, to return an **arc** object that represents an arc. The following example positions arc 1 fifty points to the right of the left side of the worksheet.

```
set left position of arc 1 of sheet 1 to 50
```

Properties

add indent

> **True** if text is automatically indented when the text alignment in a cell is set to equal distribution, either horizontally or vertically. Read/write.

> This property is not used in U.S./English versions of Excel.

auto scale font

> **True** if the text in the object changes font size when the object size changes. The default value is **true**. Read/write.

auto size

> **True** if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the specified object. Read-only.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

height

> Returns or sets the height (in points) of the object. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the axis title. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a VBA macro or a string of AppleScript commands that's run when the specified object is clicked. Strings of AppleScript commands are not saved with the document. Read/write.

orientation

Returns or sets the object's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

reading order

This property is not currently supported.

string value

Returns or sets the text of the specified object. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical alignment

Returns or sets the vertical alignment of the object. Read/write.

Can be one of the following:

- **vertical alignment top**

- **vertical alignment center**

- **vertical alignment bottom**

- **vertical alignment justify**

- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

visible

True if the object is visible. Read/write.

width

Returns or sets an object's width, in points. Read/write.

wrap auto text

True if Excel wraps the text in the object. Read/write.

z order position

Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: callout

Plural
callouts

Represents a callout shape.

Use **callout** *index*, where *index* is the callout name or the index number, to return a **callout** object. The following example creates a new callout.

```
make new callout at the beginning of worksheet 1 of workbook 1
```

Properties

<*Inheritance*> **shape**

Inherits the properties and elements of the **shape** class.

callout format

Returns a **callout format** object that contains callout formatting properties. Read-only.

callout type

Returns the type of callout. Read-only.

Can be one of the following:

- **callout unset**

- **callout one**

- **callout two**

- **callout three**

- **callout four**

Class: callout format

Plural

callout formats

Represents the formatting options for a callout.

Use the *callout* property to return a **callout format** object. The following example specifies several attributes of callout 3 in the active worksheet:

- The callout will have a vertical accent bar that separates the text from the callout line.

- The angle between the callout line and the side of the callout text box will be 30 degrees.

- There will be no border around the callout text.

- The callout line will be attached to the top of the callout text box.

- The callout line will contain two segments.

For this example to work, shape three must be a callout.

```
set accent of callout format of callout 3 of active sheet to true
set angle of callout format of callout 3 of active sheet to angle30
set border of callout format of callout 3 of active sheet to ¬
        false
set callout format type of callout format of callout 3 of active sheet to ¬
        callout three
preset drop callout 3 of active sheet drop type drop top
```

Properties

accent

> **True** if a vertical accent bar separates the callout text from the callout line. Read/write.

angle

> Returns or sets the angle of the callout line. If the callout line contains more than one line segment, this property returns or sets the angle of the segment that is farthest from the callout text box. Read/write.
>
> Can be one of the following:

- **angle30**
- **angle45**
- **angle60**
- **angle90**
- **angle automatic**
- **angle unset**

> If you set the value of this property to anything other than **angle automatic**, the callout line maintains a fixed angle as you drag the callout.

auto attach

> **True** if the place where the callout line attaches to the callout text box changes depending on whether the origin of the callout line (where the callout points to) is to the left or right of the callout text box. Read/write.
>
> When the value of this property is **true**, the drop value (the vertical distance from the edge of the callout text box to the place where the callout line attaches) is measured from the top of the text box when the text box is to the right of the origin, and it's measured from the bottom of the text box when the text box is to the left of the origin. When the value of this property is **false**, the drop value is always measured from the top of the text box, regardless of the relative positions of the text box and the origin. To set the drop value, use the **custom drop** command, and use the *drop* property to return the drop value.
>
> Setting this property affects a callout only if it has an explicitly set drop value, that is, if the value of the *drop type* property is **drop custom**. By default, callouts have explicitly set drop values when they're created.

auto length

> **True** if the first segment of the callout line (the segment attached to the text callout box) is scaled automatically whenever the callout is moved. **False** if the first segment of the callout retains the fixed length specified by the *callout format length* property whenever the callout is moved. Applies only to callouts whose lines consist of more than one segment (types **callout three** and **callout four**). Read-only.
>
> This property is read-only. To set this property to **true**, use the **automatic length** command. To set this property to **false**, use the **custom length** command.

border

> **True** if the text in the specified callout is surrounded by a border. Read/write.

callout format length

When the *auto length* property of the specified callout is set to **false,** the *callout format length* property returns the length (in points) of the first segment of the callout line (the segment attached to the text callout box). Applies only to callouts whose lines consist of more than one segment (types **callout three** and **callout four**). Read-only.

This property is read-only. To set the value of this property, use the **custom length** command.

callout format type

Returns or sets the callout type. Read/write.

Can be one of the following:

- **callout unset**

- **callout one**

- **callout two**

- **callout three**

- **callout four**

drop

For callouts with an explicitly set drop value, this property returns the vertical distance (in points) from the edge of the text bounding box to the place where the callout line attaches to the text box. This distance is measured from the top of the text box unless the *auto attach* property is set to **true** and the text box is to the left of the origin of the callout line (the place that the callout points to), in which case the drop distance is measured from the bottom of the text box. Read-only.

To set the value of this property, use the **custom drop** command.

The value of this property accurately reflects the position of the callout line attachment to the text box only if the callout has an explicitly set drop value, that is, if the value of the *drop type* property is **drop custom**. To set the *drop type* property to **drop custom**, use the **preset drop** command.

drop type

Returns a value that indicates where the callout line attaches to the callout text box. Read-only.

Can be one of the following:

- **drop bottom**

- **drop center**

- **drop custom**

- **drop unset**

- **drop top**

If the callout drop type is **drop custom**, the values of the *drop* and *auto attach* properties and the relative positions of the callout text box and callout line origin (the place that the callout points to) are used to determine where the callout line attaches to the text box.

This property is read-only. To set the value of this property, use the **preset drop** command.

gap

> Returns or sets the horizontal distance (in points) between the end of the callout line and the text bounding box. Read/write.

Class: connector format

Plural

connector formats

Represents the formatting options for a shape connector. A connector is a line that attaches two other shapes at points called connection sites. If you rearrange shapes that are connected, the geometry of the connector will be automatically adjusted so that the shapes remain connected.

Use the *connector format* property to return a **connector format** object. Use the **begin connect** and **end connect** commands to attach the ends of the connector to other shapes in the document. Use the **reroute connections** command to automatically find the shortest path between the two shapes connected by the connector. Use the *connector* property to see whether a shape is a connector.

Note that you assign a size and a position when you create a connector, but the size and position are automatically adjusted when you attach the beginning and end of the connector to other shapes. Therefore, if you intend to attach a connector to other shapes, the initial size and position you specify are irrelevant. Likewise, you specify which connection sites on a shape to attach the connector to when you attach the connector, but using the **reroute connections** command after the connector is attached may change which connection sites the connector attaches to, making your original choice of connection sites irrelevant.

The following example adds two rectangles to myDocument and connects them with a curved connector.

```
set myDocument to sheet 1
set firstRect to make new shape at end of myDocument with properties ¬
        {auto shape type: autoshape rectangle, top:100, ¬
        left position:50, height:200, width:100}
set secondRect to make new shape at end of myDocument with properties ¬
        {auto shape type: autoshape rectangle, top:300, ¬
        left position:300, height:200, width:100}
set c to make new shape connector at end of myDocument with properties ¬
        {connector type:curve, top:0, left position: 0, height:0, width:0}
begin connect c connected shape firstRect connection site 1
end connect c connected shape secondRect connection site 1
reroute connections c
```

Connection sites are generally numbered according to the rules presented in the following table.

Shape type	Connection site numbering scheme
AutoShapes, WordArt, pictures, and OLE objects	The connection sites are numbered starting at the top and proceeding counterclockwise.
Freeforms	The connection sites are the vertices, and they correspond to the vertex numbers.

To figure out which number corresponds to which connection site on a complex shape, you can create a shape, select it, and then run the following example. The following code example numbers each connection site and attaches a connector to it.

```
set myShape to shape 1 of active sheet
set offx to (left position of myShape + width of myShape + 50)
set offy to (top of myshape + height of myShape + 50)
set shapecount to count of shapes in active sheet
repeat with j from 1 to connection site count of myShape
    set thisconnect to make new shape connector at end of active sheet ¬
        with properties {connector type: elbow, top: offy, ¬
        left position: offx, height: offy+50, width: offx+50}
    end connect thisconnect connected shape myShape connection site j
    set fore color of line format of thisconnect to {255, 0, 0}
    set l to left position of thisconnect
    set t to top of thisconnect
    make new textbox at end of active sheet with properties ¬
        {left position: l, top: t, width: 14, height: 36}
    set thistextbox to shape textbox (shapecount + (2 * j)) of active sheet
    set visible of fill format of thistextbox to false
    set visible of line format of thistextbox to false
    set content of characters of textbox j of active sheet to (j as string)
end repeat
```

Properties

begin connected

> **True** if the beginning of the specified connector is connected to a shape. Read-only.

begin connected shape

> Returns a **shape** object that represents the shape that the beginning of the specified connector is attached to. Read-only.

> If the beginning of the specified connector isn't attached to a shape, this property generates an error.

begin connection site

> Returns an integer that specifies the connection site that the beginning of a connector is connected to. Read-only.

> If the beginning of the specified connector isn't attached to a shape, this property generates an error.

connector format type

> Returns or sets the connector type. Read/write.

> Can be one of the following:

> - **connector type unset**
>
> - **straight**
>
> - **elbow**, **curve**

end connected

> **True** if the end of the specified connector is connected to a shape. Read-only.

end connected shape

> Returns a **shape** object that represents the shape that the end of the specified connector is attached to. Read-only.

> If the end of the specified connector isn't attached to a shape, this property generates an error.

end connection site

> Returns an integer that specifies the connection site that the end of a connector is connected to. Read-only.

> If the end of the specified connector isn't attached to a shape, this property generates an error.

Class: fill format

Plural

fill formats

Represents fill formatting for a shape. A shape can have a solid, gradient, texture, pattern, picture, or semi-transparent fill.

Use the *fill* property to return a **fill format** object. The following example adds a rectangle to the active worksheet and then sets the gradient and color for the rectangle's fill.

```
set newRect to make new shape at active sheet with properties ¬
        {auto shape type:autoshape rectangle, left position:90, top:90, ¬
        width:90, height:80}
set fore color of fill format of newRect to ({0, 128, 128} as RGB color)
one color gradient newRect gradient style horizontal gradient ¬
        variant 1 degree 1.0
```

Many of the properties of the **fill format** object are read-only. To set one of these properties, you must apply the corresponding command.

Properties

back color

> Returns or sets an RGB color that represents the background color for the specified fill format. Read/write.

fill format type

> Returns the shape fill format type. Read-only.
>
> Can be one of the following

- **fill unset**
- **fill solid**
- **fill patterned**
- **fill gradient**
- **fill textured**
- **fill background**
- **fill picture**

fore color

> Returns or sets an RGB color that represents the foreground color for the fill format. Read-only.

gradient color type

> Returns the gradient color type for the specified fill. Read-only.
>
> Can be one of the following:

- **gradient type unset**
- **single shade gradient type**
- **two colors gradient type**
- **preset colors gradient type**

> To set the gradient type for the fill format, use the **one color gradient**, **preset gradient**, or **two color gradient** command.

gradient degree

Returns a value that indicates how dark or light a one-color gradient **fill format** is. A value of 0 (zero) means that black is mixed in with the shape's foreground color to form the gradient; a value of 1 means that white is mixed in; and values between 0 and 1 mean that a darker or lighter shade of the foreground color is mixed in. Read-only.

To set the gradient degree for the fill format, use the **one color gradient** command.

gradient style

Returns the gradient style for the specified fill. Read-only.

Can be one of the following:

- **gradient unset**
- **horizontal gradient**
- **vertical gradient**
- **diagonal up gradient**
- **diagonal down gradient**
- **from corner gradient**
- **from center gradient**
- **from title gradient** (used only in PowerPoint)

To set the gradient style for the fill, use the **one color gradient** or **two color gradient** command.

Note   Attempting to return this property for a fill that doesn't have a gradient generates an error. To determine whether the fill has a gradient, use the *fill type* property.

gradient variant

Returns the gradient variant for the specified fill format as an integer value from 1 to 4 for most gradient fills. If the gradient style is **from center gradient**, this property returns either 1 or 2. The values for this property correspond to the gradient variants (numbered from left to right and from top to bottom) on the **Gradient** tab in the **Fill Effects** dialog box. Read-only.

To set the gradient variant for the fill format, use the **one color gradient** or **two color gradient** command.

pattern

Returns a value that represents the pattern applied to the specified fill format. Read-only.

Can be one of the following:

five percent pattern	**large checker board pattern**
ten percent pattern	**large confetti pattern**
twenty percent pattern	**large grid pattern**
twenty five percent pattern	**light downward diagonal pattern**
thirty percent pattern	**light horizontal pattern**
forty percent pattern	**light upward diagonal pattern**
fifty percent pattern	**light vertical pattern**
sixty percent pattern	**unset pattern**
seventy percent pattern	**narrow horizontal pattern**
seventy five percent pattern	**narrow vertical pattern**
eighty percent pattern	**outlined diamond pattern**
ninety percent pattern	**pattern unset**
dark downward diagonal pattern	**plaid pattern**
dark horizontal pattern	**shingle pattern**
dark upward diagonal pattern	**small checker board pattern**
dark vertical pattern	**small confetti pattern**
dashed downward diagonal pattern	**small grid pattern**
dashed horizontal pattern	**solid diamond pattern**
dashed upward diagonal pattern	**sphere pattern**
dashed vertical pattern	**trellis pattern**
diagonal brick pattern	**wave pattern**
divot pattern	**weave pattern**
dotted diamond pattern	**wide downward diagonal pattern**
dotted grid pattern	**wide upward diagonal pattern**
horizontal brick pattern	**zig zag pattern**

To set the pattern for the fill format, use the **patterned** command.

To set the colors used in the pattern, use the *back color* and *fore color* properties.

preset gradient type

Returns the preset gradient type for the specified fill format. Read-only.

Can be one of the following:

gradient brass	**gradient mahogany**
gradient calm water	**gradient moss**
gradient chrome	**gradient nightfall**
gradient chrome2	**gradient ocean**
gradient daybreak	**gradient parchment**
gradient desert	**gradient peacock**
gradient early sunset	**gradient rainbow**
gradient fire	**gradient rainbow2**
gradient fog	**gradient sapphire**
gradient gold	**gradient silver**
gradient gold2	**gradient wheat**
gradient horizon	**preset gradient unset**
gradient late sunset	

To set the preset gradient type for the fill format, use the **preset gradient** command.

preset texture

Returns the preset texture for the specified fill format. Read-only.

Can be one of the following:

preset texture unset	**texture paper bag**
texture blue tissue paper	**texture papyrus**
texture bouquet	**texture parchment**
texture brown marble	**texture pink tissue paper**
texture canvas	**texture purple mesh**
texture cork	**texture recycled paper**
texture denim	**texture sand**
texture fish fossil	**texture stationery**
texture granite	**texture walnut**
texture green marble	**texture water droplets**
texture medium wood	**texture white marble**
texture newsprint	**texture woven mat**
texture oak	

To set the preset texture for the fill format, use the **preset textured** command.

texture name

Returns the name of the custom texture file for the specified fill format. Read-only.

To set the texture file for the fill format, use the **user textured** command.

texture type

Returns the texture type for the specified fill format. Read-only.

Can be one of the following:

- **texture type texture type unset**

- **texture type preset texture**

- **texture type user defined texture**

To set the texture type for the fill format, use the **preset textured**, **user picture**, or **user textured** command.

transparency

Returns or sets the degree of transparency of the specified fill format as a value between 0.0 (opaque) and 1.0 (clear). Read/write.

The value of this property affects the appearance of solid-colored fills and lines only; it has no effect on the appearance of patterned lines or patterned, gradient, picture, or textured fills.

visible

True if the specified object, or the formatting applied to it, is visible. Read/write.

Class: line

Plural

lines

Represents a line graphic object.

Use **line** *index*, where *index* is the line name or the index number, to return a **line** object that represents a line. The following example adds an arrowhead to a line.

```
set arrowhead length of line 1 of sheet 1 to arrowhead length long
set arrowhead style of line 1 of sheet 1 to arrowhead style closed
```

Properties

arrowhead length

Returns or sets the length of an arrowhead. Read/write.

Can be one of the following:

- **arrowhead length long**
- **arrowhead length medium**
- **arrowhead length short**

arrowhead style

Returns or sets the style of an arrowhead. Read/write.

Can be one of the following:

- **arrowhead style closed**
- **arrowhead style double closed**
- **arrowhead style double open**
- **arrowhead style none**
- **arrowhead style open**

arrowhead width

Returns or sets the width of an arrowhead. Read/write.

Can be one of the following:

- **arrowhead width medium**
- **arrowhead width narrow**
- **arrowhead width wide**

border

Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

enabled

True if the object is enabled. Read/write.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

height

Returns or sets the height (in points) of the object. Read/write.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a VBA macro or a string of AppleScript commands that's run when the specified object is clicked. Strings of AppleScript commands are not saved with the document. Read/write.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**

- **placement move**

- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: line format

Plural

line formats

Represents line and arrowhead formatting. For a line, the **line format** object contains formatting information for the line itself; for a **shape** with a border, this object contains formatting information for the shape's border.

To return a **line format** object, use the *line format* property of a shape or inline shape. The following example adds a a blue dashed line to the active document. There's a short narrow oval at the line's starting point and a long wide triangle at its end point.

```
make new shape line at active sheet with properties {begin line X:100, ¬
        begin line Y:100, end line X:200, end line Y:300}
set dash style of line format of shape line 1 of active sheet to ¬
        line dash style dash dot dot
set fore color of line format of shape line 1 of active sheet to ¬
        ({50, 0, 128} as RGB color)
set begin arrowhead length of line format of shape line 1 of active sheet ¬
        to short arrowhead
set begin arrowhead style of line format of shape line 1 of active sheet ¬
        to oval arrowhead
set begin arrowhead width of line format of shape line 1 of active sheet ¬
        to narrow width arrowhead
set end arrowhead length of line format of shape line 1 of active sheet ¬
        to long arrowhead
set end arrowhead style of line format of shape line 1 of active sheet ¬
        to triangle arrowhead
set end arrowhead width of line format of shape line 1 of active sheet ¬
        to wide arrowhead
```

Properties

back color

> Returns or sets an RGB color that represents the background color for the specified line format. Read/write.

begin arrowhead length

> Returns or sets the length of the arrowhead at the beginning of the specified line. Read/write.
>
> Can be one of the following:

- **arrowhead length unset**
- **short arrowhead**
- **medium arrowhead**
- **long arrowhead**

begin arrowhead style

> Returns or sets the style of the arrowhead at the beginning of the specified line. Read/write.
>
> Can be one of the following:

- **arrowhead style unset**
- **no arrowhead**
- **triangle arrowhead**
- **open_arrowhead**
- **stealth arrowhead**
- **diamond arrowhead**
- **oval arrowhead**

begin arrowhead width

> Returns or sets the width of the arrowhead at the beginning of the specified line. Read/write.
>
> Can be one of the following:

- **arrowhead width unset**
- **narrow width arrowhead**
- **medium width arrowhead**
- **wide arrowhead**

dash style

Returns or sets the dash style for the specified line. Read/write.

Can be one of the following:

- **line dash style unset**
- **line dash style solid**
- **line dash style square dot**
- **line dash style round dot**
- **line dash style dash**
- **line dash style dash dot dot**
- **line dash style long dash**
- **line dash style dash dot**
- **line dash style long dash dot**

end arrowhead length

Returns or sets the length of the arrowhead at the end of the specified line. Read/write.

Can be one of the following:

- **arrowhead length unset**
- **short arrowhead**
- **medium arrowhead**
- **long arrowhead**

end arrowhead style

Returns or sets the style of the arrowhead at the end of the specified line. Read/write.

Can be one of the following:

- **arrowhead style unset**
- **no arrowhead**
- **triangle arrowhead**
- **open_arrowhead**
- **stealth arrowhead**
- **diamond arrowhead**
- **oval arrowhead**

end arrowhead width

> Returns or sets the width of the arrowhead at the end of the specified line. Read/write.
>
> Can be one of the following:

- **arrowhead width unset**
- **narrow width arrowhead**
- **medium width arrowhead**
- **wide arrowhead**

fore color

> Returns or sets an RGB color that represents the foreground color for the line format. Read-only.

line style

> Returns or sets the line style for the fill format object. Read/write.
>
> Can be one of the following:

- **line style unset**
- **single line**
- **thin thin line**
- **thin thick line**
- **thick thin line**
- **thick between thin line**

pattern

> Returns or sets a value that represents the pattern applied to the specified line format. Read/write.
>
> Can be one of the following:

five percent pattern	**large checker board pattern**
ten percent pattern	**large confetti pattern**
twenty percent pattern	**large grid pattern**
twenty five percent pattern	**light downward diagonal pattern**
thirty percent pattern	**light horizontal pattern**
forty percent pattern	**light upward diagonal pattern**
fifty percent pattern	**light vertical pattern**
sixty percent pattern	**unset pattern**
seventy percent pattern	**narrow horizontal pattern**
seventy five percent pattern	**narrow vertical pattern**
eighty percent pattern	**outlined diamond pattern**
ninety percent pattern	**plaid pattern**
dark downward diagonal pattern	**shingle pattern**
dark horizontal pattern	**small checker board pattern**
dark upward diagonal pattern	**small confetti pattern**
dark vertical pattern	**small grid pattern**

dashed downward diagonal pattern	**solid diamond pattern**
dashed horizontal pattern	**sphere pattern**
dashed upward diagonal pattern	**trellis pattern**
dashed vertical pattern	**wave pattern**
diagonal brick pattern	**weave pattern**
divot pattern	**wide downward diagonal pattern**
dotted diamond pattern	**wide upward diagonal pattern**
dotted grid pattern	**zig zag pattern**
horizontal brick pattern	

transparency

> Returns or sets the degree of transparency of the specified line as a value between 0.0 (opaque) and 1.0 (clear). Read/write.

> The value of this property affects the appearance of solid-colored lines only; it has no effect on the appearance of patterned lines.

visible

> **True** if the specified object, or the formatting applied to it, is visible. Read/write.

weight

> Returns or sets the thickness (in points) of the specified line. Read/write.

Class: oval

Plural

ovals

Elements

character

Represents an oval graphic.

Use **oval** *index*, where *index* is the oval name or the index number, to return an **oval** object that represents an oval. The following example positions oval 1 fifty points to the right of the left side of sheet 1.

```
set left position of oval 1 of sheet 1 to 50
```

Properties

add indent

> **True** if text is automatically indented when the text alignment in a cell is set to equal distribution, either horizontally or vertically. Read/write.

> This property is not used in U.S./English versions of Excel.

auto scale font

> **True** if the text in the object changes font size when the object size changes. The default value is **true**. Read/write.

auto size

> **True** if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the specified object. Read-only.

formula

> Returns or sets the object's formula in A1-style notation. Read/write.

height

> Returns or sets the height (in points) of the object. Read/write.

horizontal alignment

> Returns or sets the horizontal alignment for the object. Read/write.
>
> Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

> The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

> Returns an **interior** object that represents the interior of the axis title. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a VBA macro or a string of AppleScript commands that's run when the specified object is clicked. Strings of AppleScript commands are not saved with the document. Read/write.

orientation

Returns or sets the object's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

reading order

This property is not currently supported.

shadow

> **True** if the font is a shadow font or if the object has a shadow. Read/write.

string value

> Returns or sets the text of the specified object. Read/write.

top

> Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical alignment

> Returns or sets the vertical alignment of the object. Read/write.
>
> Can be one of the following:

- **vertical alignment top**
- **vertical alignment center**
- **vertical alignment bottom**
- **vertical alignment justify**
- **vertical alignment distributed**

> The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

visible

> **True** if the object is visible. Read/write.

width

> Returns or sets an object's width, in points. Read/write.

wrap auto text

> **True** if Excel wraps the text in the object. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.
>
> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: picture

Plural

pictures

Represents a picture shape.

Use **picture** *index*, where *index* is the picture name or the index number, to return a **picture** object. The following example creates a new picture on worksheet 1 from the file "picture.jpg."

```
make new picture at the beginning of worksheet 1 of workbook 1 ¬
    with properties {file name:"picture.jpg."}
```

Properties

<Inheritance> **shape**

    Inherits the properties and elements of the **shape** class.

file name

    Returns or sets the URL (on the intranet or the Web) or path (local or network) to the location where the specified source object was saved. Read/write.

    The *file name* property generates an error if a folder in the specified path doesn't exist.

link to file

    True if the picture is linked to the file. Read-only.

picture format

    Returns a **picture format** object that contains picture formatting properties. Read-only.

save with document

    True if the picture should be saved with the document. Read-only.

Class: picture format

Plural

picture formats

Contains properties that apply to pictures.

Use the *picture format* property to return a **picture format** object. The following example sets the brightness and contrast for picture 1 of the active worksheet and crops 18 points off the bottom of the picture. This example works only on a picture object.

```
set brightness of picture format of picture 1 of active sheet to 0.3

set contrast of picture format of picture 1 of active sheet to 0.7

set crop bottom of picture format of picture 1 of active sheet to 18
```

Note   Cropping is calculated relative to the original size of the picture. For example, if you insert a picture that is originally 100 points high, rescale it so that it's 200 points high, and then set the *crop bottom* property to 50, 100 points (not 50) will be cropped off the bottom of your picture. However, while cropping measurements are calculated relative to the object's original scale, those measurements reflect absolute distances from the edge of the object. You cannot set any of the cropping properties to a negative number.

Properties

brightness

> Returns or sets the brightness of the specified picture. The value for this property must be a number from 0.0 (dimmest) to 1.0 (brightest). Read/write.

color type

> Returns or sets the type of color transformations applied to the specified picture. Read/write.
>
> Can be one of the following:

- **picture color type unset**
- **picture color automatic**
- **picture color gray scale**
- **picture color black and white**
- **picture color watermark**

contrast

> Returns or sets the contrast for the specified picture. The value for this property must be a number from 0.0 (the least contrast) to 1.0 (the greatest contrast). Read/write.

crop bottom

> Returns or sets the number of points that are cropped off the bottom of the specified picture. Read/write.

crop left

> Returns or sets the number of points that are cropped off the left side of the specified picture. Read/write.

crop right

> Returns or sets the number of points that are cropped off the right side of the specified picture. Read/write.

crop top

> Returns or sets the number of points that are cropped off the top of the specified picture. Read/write.

transparency color

> Returns or sets the transparent color for the specified picture as an RGB value. For this property to take effect, the *transparent background* property must be set to **true**. Read/write.

transparent background

> **True** if the parts of the picture that are the color defined as the transparent color appear transparent. To set the transparent color, use the *transparency color* property. Read/write.

Class: rectangle

Plural
rectangles

Elements
character

Represents a rectangle graphic object.

Use **rectangle** *index*, where *index* is the rectangle name or the index number, to return a **rectangle** object that represents a rectangle. The following example positions rectangle 1 fifty points to the right of the left side of sheet 1.

```
set left position of rectangle 1 of sheet 1 to 50
```

Properties
add indent

> **True** if text is automatically indented when the text alignment in a cell is set to equal distribution, either horizontally or vertically. Read/write.

> This property is not used in U.S./English versions of Excel.

auto scale font

> **True** if the text in the object changes font size when the object size changes. The default value is **true**. Read/write.

auto size

> **True** if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

bottom right cell

> Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

caption

> Returns or sets the caption for this object. Read/write.

enabled

> **True** if the object is enabled. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the specified object. Read-only.

formula

Returns or sets the object's formula in A1-style notation. Read/write.

height

Returns or sets the height (in points) of the object. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**

- **horizontal align center across selection**

- **horizontal align distributed**

- **horizontal align fill**

- **horizontal align general**

- **horizontal align justify**

- **horizontal align left**

- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the axis title. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

locked

True if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

locked text

True if the text in the specified object will be locked to prevent changes when the workbook is protected. Read/write.

name

Returns or sets the name of the object. Read/write.

on action

Returns or sets either the name of a VBA macro or a string of AppleScript commands that's run when the specified object is clicked. Strings of AppleScript commands are not saved with the document. Read/write.

orientation

Returns or sets the object's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

placement

Returns or sets the way the object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

True if the object will be printed when the document is printed. Read/write.

reading order

Returns or sets the reading order for the axis title. Read/write.

This property is not currently supported.

rounded corners

True if the embedded chart has rounded corners. Read/write.

shadow

True if the font is a shadow font or if the object has a shadow. Read/write.

string value

Returns or sets the text of the specified object. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

top left cell

Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical alignment

Returns or sets the vertical alignment of the object. Read/write.

Can be one of the following:

- **vertical alignment top**
- **vertical alignment center**
- **vertical alignment bottom**
- **vertical alignment justify**
- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

visible

True if the object is visible. Read/write.

width

Returns or sets an object's width, in points. Read/write.

wrap auto text

True if Excel wraps the text in the object. Read/write.

z order position

Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: shadow format

Plural

shadow formats

Represents shadow formatting for a shape.

Use the *shadow* property to return a **shadow format** object. The following example adds a shadowed rectangle to the active worksheet. The semitransparent blue shadow is offset 5 points to the right of the rectangle and 3 points above it.

```
set newShape to make new shape at active sheet with properties ¬
        {auto shape type:autoshape rectangle, left position:50, top:50, ¬
        width:100, height:200}
set fore color of shadow of newShape to ({0, 0, 128} as RGB color)
set offset x of shadow of newShape to 5
set offset y of shadow of newShape to -3
set transparency of shadow of newShape to 0.5
set visible of shadow of newShape to true
```

Properties

fore color

> Returns or sets an RGB color that represents the foreground color for the line format. Read-only.

obscured

> **True** if the shadow of the specified shape appears filled in and is obscured by the shape, even if the shape has no fill. **False** if the shadow has no fill and the outline of the shadow is visible through the shape if the shape has no fill. Read/write.

offset x

> Returns or sets the horizontal offset (in points) of the shadow from the specified shape. A positive value offsets the shadow to the right of the shape; a negative value offsets it to the left. Read/write.

offset y

> Returns or sets the vertical offset (in points) of the shadow from the specified shape. A positive value offsets the shadow below the shape; a negative value offsets it above the shape. Read/write.

shadow format type

> Returns or sets the shape shadow type. Read/write.
>
> Can be one of the following:

shadow unset	**shadow11**
shadow1	**shadow12**
shadow2	**shadow13**
shadow3	**shadow14**
shadow4	**shadow15**
shadow5	**shadow16**
shadow6	**shadow17**
shadow7	**shadow18**
shadow8	**shadow19**
shadow9	**shadow20**
shadow10	

transparency

> Returns or sets the degree of transparency of the specified shadow as a value between 0.0 (opaque) and 1.0 (clear). Read/write.

visible

> **True** if the **shadow format** object, or the formatting applied to it, is visible. Read/write.

Class: shape

Plural

shapes

Represents a single shape on a worksheet, such as an AutoShape, freeform, OLE object, or picture.

Use **shape** *index*, where *index* is the shape name or the index number, to return a **shape** object. The following example horizontally flips shape 1 and the shape named "Rectangle 1" on myDocument.

```
set myDocument to sheet 1

flip shape 1 of myDocument flip cmd flip horizontal

flip shape named "Rectangle 1" of myDocument flip cmd flip horizontal
```

Each shape is assigned a default name when you add it to the **shapes** list. To give the shape a more meaningful name, use the *name* property. The following example adds a rectangle to myDocument, gives it the name "Red Square," and then sets its foreground color and line style.

```
set myDocument to sheet 1

set myRect to make new shape at end of myDocument ¬
        with properties {auto shape type: autoshape rectangle, ¬
        top: 144, left position: 144, height:72, width: 72}

set name of myRect to "Red Square"

set fore color of fill format of myRect to (255, 0, 0)

set dash style of line format of myRect to line dash style dash dot
```

To return a **shape** object that represents one of the shapes attached by a connector, use the *begin connected shape* or *end connected shape* property.

Properties

auto shape type

Returns or sets the type of AutoShape. Read/write.

Can be one of the following:

autoshape shape type unset	**autoshape balloon**
autoshape rectangle	**autoshape parallelogram**
autoshape trapezoid	**autoshape diamond**
autoshape rounded rectangle	**autoshape octagon**
autoshape isosceles triangle	**autoshape right triangle**
autoshape oval	**autoshape hexagon**
autoshape cross	**autoshape regular pentagon**
autoshape can	**autoshape cube**
autoshape bevel	**autoshape folded corner**
autoshape smiley face	**autoshape donut**
autoshape no symbol	**autoshape block arc**
autoshape heart	**autoshape lightning bolt**
autoshape sun	**autoshape moon**
autoshape arc	**autoshape double bracket**
autoshape double brace	**autoshape plaque**
autoshape left bracket	**autoshape right bracket**
autoshape left brace	**autoshape right brace**
autoshape right arrow	**autoshape left arrow**
autoshape up arrow	**autoshape down arrow**
autoshape left right arrow	**autoshape up down arrow**
autoshape quad arrow	**autoshape left right up arrow**
autoshape bent arrow	**autoshape U turn arrow**
autoshape left up arrow	**autoshape dent up arrow**
autoshape curved right arrow	**autoshape curved left arrow**
autoshape curved up arrow	**autoshape curved down arrow**
autoshape striped right arrow	**autoshape notched right arrow**
autoshape pentagon	**autoshape chevron**

autoshape right arrow callout	**autoshape left arrow callout**
autoshape up arrow callout	**autoshape down arrow callout**
autoshape left right arrow callout	**autoshape up down arrow callout**
autoshape quad arrow callout	**autoshape circular arrow**
autoshape flowchart process	**autoshape flowchart alternate process**
autoshape flowchart decision	**autoshape flowchart data**
autoshape flowchart predefined process	**autoshape flowchart internal storage**
autoshape flowchart document	**autoshape flowchart multi document**
autoshape flowchart terminator	**autoshape flowchart preparation**
autoshape flowchart manual input	**autoshape flowchart manual operation**
autoshape flowchart connector	**autoshape flowchart offpage connector**
autoshape flowchart card	**autoshape flowchart punched tape**
autoshape flowchart summing junction	**autoshape flowchart or**
autoshape flowchart collate	**autoshape flowchart sort**
autoshape flowchart extract	**autoshape flowchart merge**
autoshape flowchart stored data	**autoshape flowchart delay**
autoshape flowchart sequential access storage	**autoshape flowchart magnetic disk**
autoshape flowchart direct access storage	**autoshape flowchart display**
autoshape explosion one	**autoshape explosion two**
autoshape four point star	**autoshape five point star**
autoshape eight point star	**autoshape sixteen point star**
autoshape twenty four point star	**autoshape thirty two point star**
autoshape up ribbon	**autoshape down ribbon**
autoshape curved up ribbon	**autoshape curved down ribbon**
autoshape vertical scroll	**autoshape horizontal scroll**
autoshape wave	**autoshape double wave**
autoshape rectangular callout	**autoshape rounded rectangular callout**
autoshape oval callout	**autoshape cloud callout**
autoshape line callout one	**autoshape line callout two**
autoshape line callout three	**autoshape line callout four**
autoshape line callout one accent bar	**autoshape line callout two accent bar**
autoshape line callout three accent bar	**autoshape line callout four accent bar**
autoshape line callout one no border	**autoshape line callout two no border**
autoshape line callout three no border	**autoshape line callout four no border**
autoshape callout one border and accent bar	**autoshape callout two border and accent bar**
autoshape callout three border and accent bar	**autoshape callout four border and accent bar**
autoshape action button custom	**autoshape action button home**
autoshape action button help	**autoshape action button information**
autoshape action button back or previous	**autoshape action button forward or next**
autoshape action button beginning	**autoshape action button end**
autoshape action button return	**autoshape action button document**
autoshape action button sound	**autoshape action button movie**

black white mode

This property is not used in Excel. It is provided only for compatibility with the drawing object models in other Microsoft Office applications.

bottom right cell

Returns a **range** object that represents the cell that lies under the the lower-right corner of the object. Read-only.

connection site count

Returns the number of connection sites on the specified shape. Read-only.

connector

True if the specified shape is a connector. Read-only.

connector format

Returns a **connector format** object that contains connector formatting properties. Applies to **shape** objects that represent connectors. Read-only.

connector type

Returns the type of the connector. Read-only.

Can be one of the following:

- **connector type unset**

- **straight**

- **elbow**

- **curve**

fill format

Returns a **fill format** object that contains fill formatting properties for the specified shape. Read-only.

height

Returns or sets the height of the specified shape. Read/write.

horizontal flip

True if the specified shape is flipped around the horizontal axis. Read-only.

hyperlink

Returns a **hyperlink** object that represents the hyperlink associated with the specified **shape** object. Read-only.

Note   If there's no hyperlink associated with the specified shape, an error occurs.

left position

Returns or sets the horizontal position (in points) of the specified shape or shape range. Read/write.

line format

Returns a **line format** object that contains line formatting properties for the specified shape. (For a line, the **line format** object represents the line itself; for a shape with a border, the **line format** object represents the border.) Read-only.

lock aspect ratio

True if the specified shape retains its original proportions when you resize it. **False** if you can change the height and width of the shape independently of one another when you resize it. Read/write.

locked

> **True** if the object is locked; **false** if the object can be modified when the sheet is protected. Read/write.

name

> Returns or sets the shape name. Read/write.

placement

> Returns or sets the way the object is attached to the cells below it. Read/write.

> Can be one of the following:

> - **placement free floating**
> - **placement move**
> - **placement move and size**

rotation

> Returns or sets the number of degrees the specified shape is rotated around the z-axis. A positive value indicates clockwise rotation; a negative value indicates counterclockwise rotation. Read/write.

> To set the rotation of a three-dimensional shape around the x-axis or the y-axis, use the *rotation x* property or the *rotation y* property of the **threeD format** object.

shadow

> Returns a **shadow format** object that represents the shadow formatting for the specified shape. Read-only.

shape on action

> Returns or sets either the name of a VBA macro or a string of AppleScript commands that's run when the specified object is clicked. Strings of AppleScript commands are not saved with the document. Read/write.

shape type

> Returns the shape type. Read-only.

> Can be one of the following:

shape type auto	**shape type linked OLE object**
shape type callout	**shape type linked picture**
shape type chart	**shape type media**
shape type comment	**shape type embedded OLE control**
shape type embedded OLE object	**shape type picture**
shape type form control	**shape type placeholder**
shape type free form	**shape type unset**
shape type group	**shape type text box**
shape type line	**shape type text effect**

text frame

> Returns a **text frame** object that contains the text for the specified shape. Read-only.

threeD format

> Returns a **threeD format** object that contains 3-D-effect formatting properties for the specified shape. Read-only.

top

> Returns or sets the vertical position (in points) of the specified shape or shape range. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

vertical flip

> **True** if the specified shape is flipped around the vertical axis. Read-only.

visible

> **True** if the specified object, or the formatting applied to it, is visible. Read/write.

width

> Returns or sets the width (in points) of the specified object. Read/write.

z order position

> Returns the position of the object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: shape connector

Plural

shape connectors

Represents a shape connector.

Use **shape connectors** *index*, where *index* is the shape connector name or the index number, to return a **shape connector** object. The following example creates a new elbow **shape connector**.

```
make new shape connector at the beginning of worksheet 1 of workbook 1 ¬
    with properties {left position:100, width:100, top:100, height:100, ¬
    connector type:elbow}
```

Properties

<*Inheritance*> **shape**

> Inherits the properties and elements of the **shape** class.

connector format

> Returns a **connector format** object that contains connector formatting properties. Read-only.

connector type

> Returns the type of the connector. Read-only.
>
> Can be one of the following:

- **connector type unset**
- **straight**
- **elbow**
- **curve**

Class: shape line

Plural

shape lines

Represents a shape line.

Use **shape line** *index*, where *index* is the shape line name or the index number, to return a **shape line** object. The following example creates a new **shape line**.

```
make new shape line at the beginning of worksheet 1 of workbook 1 ¬
    with properties {left position:100, width:100, top:100, height:100}
```

Properties

<*Inheritance*> **shape**

> Inherits the properties and elements of the **shape** class.

begin line X

> Returns or sets the beginning X position of the line. Read/write.

begin line Y

> Returns or sets the beginning Y position of the line. Read/write.

end line X

> Returns or sets the ending X position of the line. Read/write.

end line Y

> Returns or sets the ending Y position of the line. Read/write.

Class: shape textbox

Plural

shape textboxes

Represents a shape textbox.

Use **shape textbox** *index*, where *index* is the shape textbox name or the index number, to return a **shape textbox** object. The following example creates a new **shape textbox**.

```
make new shape textbox at the beginning of worksheet 1 of workbook 1 ¬
     with properties {left position:100.0, top:100.0}
set content of characters of textbox 1 of worksheet 1 of workbook 1 ¬
     to "shape textbox content"
```

Properties

<Inheritance> **shape**

Inherits the properties and elements of the **shape** class.

text orientation

Returns the text orientation of the object. Read-only.

Can be one of the following:

- **text orientation unset**

- **horizontal**

- **upward**

- **downward**

- **vertical east asian**

- **vertical**

- **horizontal rotated east asian**

Class: text frame

Plural

text frames

Represents the **text frame** in a **shape** object. Contains the text in the text frame as well as the properties that control the margins and orientation of the text frame.

Use the *text frame* property to return the **text frame** object for a shape. The following example adds a rectangle to myDocument and then sets the margins for the text frame.

```
set myDocument to sheet 1
set myShape to make new shape at end of myDocument ¬
        with properties {auto shape type: autoshape rectangle, ¬
        top:0, left position: 0, height: 250, width: 140}
set margin bottom of text frame of myShape to 10
set margin left of text frame of myShape to 10
set margin right of text frame of myShape to 10
set margin top of text frame of myShape to 10
```

Note   Currently, you cannot set the content of characters of a text frame. Also, some shapes don't support attached text (lines, freeforms, pictures, and OLE objects, for example). If you attempt to return or set properties that control text in a text frame for those objects, an error occurs.

Properties

auto margins

True if Excel automatically calculates text frame margins. Read/write.

When this property is **true**, the *margin left*, *margin right*, *margin top*, and *margin bottom* properties are ignored.

auto size

True if the size of the specified object is changed automatically to fit text within its boundaries. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

margin bottom

Returns or sets the distance (in points) between the bottom of the text frame and the bottom of the inscribed rectangle of the shape that contains the text. Read/write.

This property is ignored when the *auto margins* property is set to **true**.

margin left

Returns or sets the distance (in points) between the left edge of the text frame and the left edge of the inscribed rectangle of the shape that contains the text. Read/write.

This property is ignored when the *auto margins* property is set to **true**.

margin right

Returns or sets the distance (in points) between the right edge of the text frame and the right edge of the inscribed rectangle of the shape that contains the text. Read/write.

This property is ignored when the *auto margins* property is set to **true**.

margin top

Returns or sets the distance (in points) between the top of the text frame and the top of the inscribed rectangle of the shape that contains the text. Read/write.

This property is ignored when the *auto margins* property is set to **true**.

orientation

Returns or sets the orientation of the text inside the frame. Read/write.

Can be one of the following:

- **downward**
- **horizontal**
- **text orientation unset**
- **upward**
- **vertical east asian**
- **vertical**
- **horizontal rotated east asian**

reading order

This property is not currently supported.

vertical alignment

Returns or sets the vertical alignment of the object. Read/write.

Can be any of the following:

- **valign top**
- **valign center**
- **valign bottom**
- **valign justify**
- **valign distributed**

The **valign distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

wrap auto text

True if Excel wraps the text in the object. Read/write.

Class: threeD format

Plural

threeD formats

Represents a shape's three-dimensional formatting.

Use the *threeD format* property to return a **threeD format** object. The following example adds an oval to the active document and then specifies that the oval be extruded to a depth of 50 points and that the extrusion be purple.

```
set myShape to make new shape at active sheet with properties ¬
        {auto shape type:autoshape oval, left position:90, top:90, ¬
        width:90, height:90}
set visible of threeD format of myShape to true
set depth of threeD format of myShape to 50
set extrusion color of threeD format of myShape ¬
        to ({255, 100, 255} as RGB color)
```

You cannot apply three-dimensional formatting to some kinds of shapes, such as beveled shapes or multiple-disjoint paths. Most of the properties and commands of the **threeD format** object for such a shape will fail.

Properties

depth

> Returns or sets the depth of the shape's extrusion. Can be a value from -600 through 9600 (positive values produce an extrusion whose front face is the original shape; negative values produce an extrusion whose back face is the original shape). Read/write.

extrusion color

> Returns or sets an RGB color that represents the color of the shape's extrusion. Read/write.

extrusion color type

> Returns or sets a value that indicates what will determine the extrusion color. Read/write.

> Can be one of the following:

> - **extrusion color type unset**
> - **automatic**
> - **custom**

perspective

> **True** if the extrusion appears in perspective — that is, if the walls of the extrusion narrow toward a vanishing point. **False** if the extrusion is a parallel, or orthographic, projection — that is, if the walls don't narrow toward a vanishing point. Read/write.

preset extrusion direction

> Returns the direction that the extrusion's sweep path takes away from the extruded shape (the front face of the extrusion). Read-only.
>
> Can be one of the following:

- **extrude bottom**
- **extrude bottom left**
- **extrude bottom right**
- **extrude left**
- **extrude none**
- **extrude right**
- **extrude top**
- **extrude top left**
- **extrude top right**
- **preset extrusion direction unset**

> To set the value of this property, use the **set extrusion direction** command.

preset lighting direction

> Returns or sets the position of the light source relative to the extrusion. Read/write.
>
> Can be one of the following:

- **light from bottom**
- **light from bottom left**
- **light from bottom right**
- **light from left**
- **light from none**
- **light from right**
- **light from top**
- **light from top left**
- **light from top right**
- **preset lighting direction unset**

> **Note** You won't see the lighting effects you set if the extrusion has a wireframe surface.

preset lighting softness

Returns or sets the intensity of the extrusion lighting. Read/write.

Can be one of the following:

- **lighting bright**
- **lighting dim**
- **lighting normal**
- **lighting softness unset**

preset material

Returns or sets the extrusion surface material. Read/write.

Can be one of the following:

- **matte**
- **metal**
- **plastic**
- **wireframe**
- **preset material unset**

preset threeD format

Returns the preset extrusion format. Each preset extrusion format contains a set of preset values for the various properties of the extrusion. If the extrusion has a custom format rather than a preset format, this property returns **preset threeD format unset**. Read-only.

Can be one of the following:

preset threeD format unset	**format11**
format1	**format12**
format2	**format13**
format3	**format14**
format4	**format15**
format5	**format16**
format6	**format17**
format7	**format18**
format8	**format19**
format9	**format20**
format10	

The values for this property correspond to the options (numbered from left to right, top to bottom) displayed when you click the **3-D** button on the **Drawing** toolbar.

To set the preset extrusion format, use the **set threeD format** command.

rotation x

Returns or sets the rotation of the extruded shape around the x-axis, in degrees. Can be a value from -90 through 90. A positive value indicates upward rotation; a negative value indicates downward rotation. Read/write.

To set the rotation of the extruded shape around the y-axis, use the *rotation y* property. To set the rotation of the extruded shape around the z-axis, use the *rotation* property of the **shape** object. To change the direction of the extrusion's sweep path without rotating the front face of the extrusion, use the **set extrusion direction** command.

rotation y

Returns or sets the rotation (in degrees) of the extruded shape around the y-axis. Can be a value from -90 through 90. A positive value indicates rotation to the left; a negative value indicates rotation to the right. Read/write.

To set the rotation of the extruded shape around the x-axis, use the *rotation x* property. To set the rotation of the extruded shape around the z-axis, use the *rotation* property of the **shape** object. To change the direction of the extrusion's sweep path without rotating the front face of the extrusion, use the **set extrusion direction** command.

visible

True if the specified object, or the formatting applied to it, is visible. Read/write.

Class: word art

Plural

word arts

Represents a word art object.

Use **word art** *index*, where *index* is the name or the index number, to return a single **word art** object. This example adds WordArt that contains the text "Test text" at the beginning of the active document.

```
make new word art at beginning of active sheet of active workbook ¬
        with properties {word art text:"Test text", ¬
        left position:(inches to points inches 1), ¬
        top:(inches to points inches 1)}
set preset word art effect of word art format of word art 1 ¬
        of active sheet of active workbook to text effect11
set font name of word art format of word art 1 of active sheet ¬
        of active workbook to "Arial Black"
```

Properties

<*Inheritance*> **shape**

Inherits the properties and elements of the **shape** class.

bold

True to set the font used in the WordArt to bold. Read-only.

font name

The name of the font used in the WordArt. Read-only.

font size

The size (in points) of the font used in the WordArt. Read-only.

italic

True to set the font used in the WordArt to italic. Read-only.

preset word art effect

Returns the style of the specified WordArt. The values for this property correspond to the formats in the **WordArt Gallery** dialog box (numbered from left to right, top to bottom). Read-only.

Can be one of the following.:

text effect unset	**text effect16**
text effect1	**text effect17**
text effect2	**text effect18**
text effect3	**text effect19**
text effect4	**text effect20**
text effect5	**text effect21**
text effect6	**text effect22**
text effect7	**text effect23**
text effect8	**text effect24**
text effect9	**text effect25**
text effect10	**text effect26**
text effect11	**text effect27**
text effect12	**text effect28**
text effect13	**text effect29**
text effect14	**text effect30**
text effect15	

word art format

Returns the **word art format** object associated with the WordArt shape object. Read-only.

word art text

The text in the WordArt. Read-only

Class: word art format

Plural

word art formats

Represents formatting options for WordArt objects.

Use the *word art format* property to return a **word art format** object. The following example sets the font name and formatting for word art 1 on the active document.

```
set font name of word art format of word art 1 of active sheet ¬
        of active workbook to "Courier New"
set bold of word art format of word art 1 of active sheet ¬
        of active workbook to true
set italic of word art format of word art 1 of active sheet ¬
        of active workbook to true
```

Properties

alignment

> Returns or sets the alignment for the specified text effect. Read/write.
>
> Can be one of the following:

- **text effect alignment unset**
- **left text effect alignment**
- **centered text effect alignment**
- **right text effect alignment**
- **justify text effect alignment**
- **word justify text effect alignment**
- **stretch justify text effect alignment**

bold

> **True** if the text of the WordArt shape is formatted as bold. Read/write.

font name

> Returns or sets the name of the font used by the WordArt shape. Read/write.

font size

> Returns or sets the font size (in points) for the specified WordArt. Read/write.

italic

> **True** if the text of the WordArt shape is formatted as italic. Read/write.

kerned pairs

> **True** if character pairs in the specified WordArt are kerned. Read/write.

normalized height

> **True** if all characters (both uppercase and lowercase) in the specified WordArt are the same height. Read/write.

preset shape

> Returns or sets the shape of the specified WordArt. Read/write.
>
> Can be one of the following:

arch down curve	**double wave1**
arch down pour	**double wave2**
arch up curve	**fade down**
arch up pour	**fade left**
button curve	**fade right**
button pour	**fade up**
can down	**inflate**
can up	**inflate bottom**
cascade down	**inflate top**
cascade up	**text effect unset**
chevron down	**plain text**
chevron up	**ring inside**
circle curve	**ring outside**
circle pour	**slant down**
curve down	**slant up**
curve up	**stop**
deflate	**triangle down**
deflate bottom	**triangle up**
deflate inflate	**wave1**
deflate inflate deflate	**wave2**
deflate top	

> Setting the *preset word art effect* property automatically sets the *preset shape* property.

preset word art effect

Returns or sets the style of the specified WordArt. The values for this property correspond to the formats in the **WordArt Gallery** dialog box (numbered from left to right, top to bottom). Read/write.

Can be one of the following:

text effect unset	**text effect16**
text effect1	**text effect17**
text effect2	**text effect18**
text effect3	**text effect19**
text effect4	**text effect20**
text effect5	**text effect21**
text effect6	**text effect22**
text effect7	**text effect23**
text effect8	**text effect24**
text effect9	**text effect25**
text effect10	**text effect26**
text effect11	**text effect27**
text effect12	**text effect28**
text effect13	**text effect29**
text effect14	**text effect30**
text effect15	

Setting the *preset word art effect* property automatically sets many other formatting properties of the specified shape.

rotated chars

True if characters in the specified WordArt are rotated 90 degrees relative to the WordArt's bounding shape. **False** if characters in the specified WordArt retain their original orientation relative to the bounding shape. Read/write.

If the WordArt has horizontal text, setting the *rotated chars* property to **true** rotates the characters 90 degrees counterclockwise. If the WordArt has vertical text, setting the *rotated chars* property to **false** rotates the characters 90 degrees clockwise. To switch between horizontal and vertical text flow, use the **toggle vertical text** command.

The **flip** command and *rotation* property of the **shape** object and the *rotated chars* property and **toggle vertical text** command all affect the character orientation and direction of text flow in a **word art** object. You may have to experiment to find out how to combine the effects of these properties and commands to get the result you want.

tracking

Returns or sets the ratio of the horizontal space allotted to each character in the specified WordArt to the width of the character. Can be a value from 0 (zero) through 5. (Large values for this property specify ample space between characters; values less than 1 can produce character overlap.) Read/write.

The following table gives the values of the *tracking* property that correspond to the settings available in the user interface.

User interface setting	Equivalent tracking property value
Very Tight	0.8
Tight	0.9
Normal	1.0
Loose	1.2
Very Loose	1.5

word art text

Returns or sets the text associated with the WordArt. Read/write.

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Drawing Suite Commands

Command: apply

Applies to the specified shape formatting that's been copied by using the **pick up** command.

Syntax

apply shape Required. An expression that returns a **shape** object.

Example

This example copies the formatting of shape 1 on `myDocument` and then applies the copied formatting to shape 2.

```
set myDocument to worksheet 1

pick up shape 1 of myDocument

apply shape 2 of myDocument
```

Command: `automatic length`

Specifies that the first segment of the callout line (the segment attached to the text callout box) be scaled automatically when the callout is moved. To specify that the first segment of the callout line retain the fixed length returned by the *callout format length* property of the **callout format** object whenever the callout is moved, use the **custom length** command. Applies only to callouts whose lines consist of more than one segment (types **callout three** and **callout four**).

Syntax

automatic length   callout format   Required. An expression that returns a **callout format** object.

Remarks

Applying this command sets the *auto length* property of the **callout format** object to **true**.

Example

This example toggles between an automatically scaling first segment and one with a fixed length for the callout line for the first shape on `myDocument`. For the example to work, the first shape must be a callout.

```
set myDocument to worksheet 1
if auto length of callout format of callout 1 of myDocument is true then
    custom length callout format of callout 1 of myDocument length 50
else
    automatic length callout format of callout 1 of myDocument
end if
```

Command: `begin connect`

Attaches the beginning of the specified connector to a specified shape. If there's already a connection between the beginning of the connector and another shape, that connection is broken. If the beginning of the connector isn't already positioned at the specified connecting site, this command moves the beginning of the connector to the connecting site and adjusts the size and position of the connector. Use the **end connect** command to attach the end of the connector to a shape.

Syntax

begin connect   connector format   Required. An expression that returns a **connector format** object.

  connected shape   shape   Required. The shape to attach the beginning of the connector to.

  connection site   integer   Required. A connection site on the shape specified by **connected shape**. Must be an integer between 1 and the integer returned by the *connection site count* property of the specified shape. If you want the connector to automatically find the shortest path between the two shapes it connects, specify any valid integer for this argument and then use the **reroute connections** command after the connector is attached to shapes at both ends.

Remarks

When you attach a connector to an object, the size and position of the connector are automatically adjusted, if necessary.

Example

This example adds two rectangles to myDocument and connects them with a curved connector. Notice that the **reroute connections** command makes it irrelevant what values you supply for the **connection site** arguments used with the **begin connect** and **end connect** commands.

```
set myDocument to worksheet 1

set firstRect to make new shape at end of myDocument ¬
        with properties  {auto shape type:autoshape rectangle, ¬
        left position:100, top:50, width:200, height:100}

set secondRect to make new shape at end of myDocument ¬
        with properties {auto shape type:autoshape rectangle, ¬
        left position:300, top:300, width:200, height:100}

set c to make new shape connector at end of myDocument ¬
        with properties  {left position:0, top:0, width:100, ¬
        height:100}

set connector format type of connector format of c to curve

begin connect connector format of c connected shape firstRect ¬
        connection site 1

end connect connector format of c connected shape secondRect ¬
        connection site 1

reroute connections c
```

Command: begin disconnect

This command is not currently supported.

Command: bring to front (drawing)

Brings the line, rectangle, oval, or arc object to the front of the z-order.

Syntax

bring to front line/rectangle/oval/arc   Required. An expression that returns a **line**, **rectangle**, **oval**, or **arc** object.

Example

This example brings rectangle one on Sheet1 to the front of the z-order.

```
bring to front rectangle 1 of worksheet 1
```

Command: check spelling (drawing)

Checks the spelling of an object. This form has no return value; Excel displays the **Spelling** dialog box.

Syntax

check spelling   rectangle/oval/arc   Required. An expression that returns a **rectangle**, **oval**, or **arc** object.

   [**custom dictionary**   Unicode text]   Optional. A string that indicates the file name of the custom dictionary to examine if the word isn't found in the main dictionary. If this argument is omitted, the currently specified dictionary is used.

   [**ignore uppercase**   Boolean]   Optional. **True** to have Excel ignore words that are all uppercase. **False** to have Excel check words that are all uppercase. If this argument is omitted, the current setting will be used.

   [**always suggest**   Boolean]   Optional. **True** to have Excel display a list of suggested alternate spellings when an incorrect spelling is found. **False** to have Excel wait for you to input the correct spelling. If this argument is omitted, the current setting will be used.

Example

This example checks the spelling of text in Rectangle 1 on Sheet1.

```
check spelling rectangle 1 of worksheet "Sheet1"
```

Command: copy object (drawing)

Copies the object to the Clipboard.

Syntax

copy object   line/rectangle/oval/arc/shape   Required. An expression that returns one of the listed objects.

Example

This example copies a rectangle on Sheet1 and then pastes it to a new worksheet.

```
copy object rectangle 1 of worksheet 1
set newSheet to make new worksheet at end of active workbook
paste newSheet
```

Command: copy picture (drawing)

Copies the line, rectangle, oval, arc, or shape object to the Clipboard as a picture.

Syntax

copy picture   line/rectangle/oval/arc/shape   Required. An expression that returns one of the listed objects.

[**appearance**   enumeration]   Optional. Specifies how the picture should be copied. Can be one of the following: **screen** or **printer**. If **screen** is used, the picture is copied to resemble its display on the screen as closely as possible. If **printer** is used, the picture is copied as it will look when it's printed. The default value is **screen**.

[**format**   enumeration]   Optional. The format of the picture. Can be one of the following: **picture** or **bitmap**. The default value is **picture**.

Example

This example copies a screen image of cells A1:D4 on Sheet1 to the Clipboard, and then it pastes the bitmap to another location on Sheet1.

```
set thisRange to range "A1:D4" of sheet 1
copy picture thisRange appearance screen format bitmap
paste worksheet sheet 1 destination range "A7"
```

Command: custom drop

Sets the vertical distance (in points) from the edge of the text bounding box to the place where the callout line attaches to the text box. This distance is measured from the top of the text box unless the *auto attach* property of the **callout format** object is set to **true** and the text box is to the left of the origin of the callout line (the place that the callout points to), in which case the drop distance is measured from the bottom of the text box.

Syntax

custom drop   callout format/callout   Required. An expression that returns a **callout** or **callout format** object.

drop   small real   Required. The drop distance, in points.

Example

This example sets the custom drop distance to 14 points from the top of the text box.

```
set myDocument to worksheet 1
custom drop callout 1 of myDocument drop 14
```

Command: `custom length`

Specifies that the first segment of the callout line (the segment attached to the text callout box) retain a fixed length whenever the callout is moved. To specify that the first segment of the callout line be scaled automatically whenever the callout is moved, use the **automatic length** command. Applies only to callouts whose lines consist of more than one segment (types **callout three** and **callout four**).

Syntax

custom length   callout format/callout   Required. An expression that returns a **callout** or **callout format** object.

   length   small real   Required. The length (in points) of the first segment of the callout.

Remarks

For the **callout format** object, applying this command sets the *auto length* property to **false** and sets the *callout format length* property to the value specified for the **length** argument.

Example

This example toggles between an automatically scaling first segment and one with a fixed length for the callout line for the first shape on `myDocument`. For the example to work, the first shape must be a callout.

```
set myDocument to worksheet 1

if auto length of callout format of callout 1 of myDocument is true then

    custom length callout format of callout 1 of myDocument length 50

else

    automatic length callout format of callout 1 of myDocument

end if
```

Command: `cut (drawing)`

Cuts the line, rectangle, oval, arc, or shape object to the Clipboard or pastes it into a specified destination.

Syntax

cut   line/rectangle/oval/arc/shape   Required. An expression that returns one of the listed objects.

Example

This example cuts the first shape on Sheet1 and places it on the Clipboard.

```
cut shape 1 of worksheet "Sheet1"
```

Command: end connect

Attaches the end of the specified connector to a specified shape. If there's already a connection between the end of the connector and another shape, that connection is broken. If the end of the connector isn't already positioned at the specified connecting site, this command moves the end of the connector to the connecting site and adjusts the size and position of the connector. To attach the beginning of the connector to a shape, use the **begin connect** command.

Syntax

end connect connector format Required. An expression that returns a **connector format** object.

   connected shape shape Required. The shape to attach the end of the connector to.

   connection site integer Required. A connection site on the shape specified by **connected shape**. Must be an integer between 1 and the integer returned by the *connection site count* property of the specified shape. If you want the connector to automatically find the shortest path between the two shapes it connects, specify any valid integer for this argument and then use the **reroute connections** command after the connector is attached to shapes at both ends.

Remarks

When you attach a connector to an object, the size and position of the connector are automatically adjusted, if necessary.

Example

This example adds two rectangles to `myDocument` and connects them with a curved connector. Notice that the **reroute connections** command makes it irrelevant what values you supply for the **connection site** arguments used with the **begin connect** and **end connect** commands.

```
set myDocument to worksheet 1
set firstRect to make new shape at end of myDocument ¬
        with properties  {auto shape type:autoshape rectangle, ¬
        left position:100, top:50, width:200, height:100}
set secondRect to make new shape at end of myDocument ¬
        with properties {auto shape type:autoshape rectangle, ¬
        left position:300, top:300, width:200, height:100}
set c to make new shape connector at end of myDocument ¬
        with properties  {left position:0, top:0, width:100, ¬
        height:100}
set connector format type of connector format of c to curve
begin connect connector format of c connected shape firstRect ¬
        connection site 1
end connect connector format of c connected shape secondRect ¬
        connection site 1
reroute connections c
```

Command: `end disconnect`

This command is not currently supported.

Command: `flip`

Flips the specified shape around its horizontal or vertical axis.

Syntax

flip shape Required. An expression that returns a **shape** object.

flip cmd enumeration Required. Specifies whether the shape is to be flipped horizontally or vertically. Can be either **flip horizontal** or **flip vertical**.

Example

This example adds a triangle to myDocument, duplicates the triangle, and then flips the duplicate triangle vertically and makes it red.

```
set myDocument to sheet 1
set Triangle1 to make new shape at end of myDocument ¬
        with properties {auto shape type:autoshape right triangle, ¬
        left position:10, top:10, height:50, width:50}
set Triangle2 to make new shape at end of myDocument ¬
        with properties {auto shape type:autoshape right triangle, ¬
        left position:10, top:10, height:50, width:50}
set fore color of fill format of Triangle2 to {255,0,0}
flip Triangle2 flip cmd flip vertical
```

Command: `one color gradient`

Sets the specified fill to a one-color gradient.

Syntax

one color gradient fill format Required. An expression that returns a **fill format** object.

gradient style enumeration Required. The gradient style. Can be one of the following:

- **gradient unset**
- **horizontal gradient**
- **vertical gradient**
- **diagonal up gradient**
- **diagonal down gradient**
- **from corner gradient**
- **from title gradient** (PowerPoint only)
- **from center gradient**

variant   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is **from center gradient**, the **variant** argument can only be 1 or 2.

degree   small real   Required. The gradient degree. Can be a value from 0.0 (dark) through 1.0 (light).

Example

This example sets the fill format for shape 2 to the same style used for shape 1.

```
set cIf to fill format of shape 1 of sheet 1
if fill format type of cIf is fill gradient and gradient color type ¬
        of cIf is single shade gradient type then
  one color gradient fill format of shape 2 of sheet 1 ¬
        gradient style (gradient style of cIf) variant gradient variant ¬
        of cIf degree gradient degree of cIf
end if
```

Command: patterned

Sets the specified fill to a pattern.

Syntax

patterned   fill format   Required. An expression that returns a **fill format** object.

pattern   enumeration   Required. The pattern type. Can be one of the following:

pattern unset	**wide downward diagonal**
five percent pattern	**wide upward diagonal pattern**
ten percent pattern	**dashed upward diagonal pattern**
twenty percent pattern	**dashed downward diagonal pattern**
twenty five percent pattern	**narrow vertical pattern**
thirty percent pattern	**narrow horizontal pattern**
forty percent pattern	**dashed vertical pattern**
fifty percent pattern	**dashed horizontal pattern**
sixty percent pattern	**large confetti pattern**
seventy percent pattern	**large grid pattern**
seventy five percent pattern	**horizontal brick pattern**
eighty percent pattern	**large checker board pattern**
ninety percent pattern	**small confetti pattern**
dark horizontal pattern	**zig zag pattern**
dark vertical pattern	**solid diamond pattern**
dark downward diagonal pattern	**diagonal brick pattern**
dark upward diagonal pattern	**outlined diamond pattern**
small checker board pattern	**plaid pattern**
trellis pattern	**sphere pattern**
light horizontal pattern	**weave pattern**
light vertical pattern	**dotted grid pattern**
light downward diagonal pattern	**divot pattern**
light upward diagonal pattern	**shingle pattern**
small grid pattern	**wave pattern**
dotted diamond pattern	

Example

This example sets the fill pattern for the first shape on sheet 1.

```
patterned fill format of shape 1 of sheet 1 pattern diagonal brick pattern
```

Command: pick up

Copies the formatting of the specified shape. To apply the copied formatting to another shape, use the **apply** command.

Syntax

pick up shape Required. An expression that returns a **shape** object.

Example

This example copies the formatting of shape 1 on myDocument and then applies the copied formatting to shape 2.

```
set myDocument to worksheet 1

pick up shape 1 of myDocument

apply shape 2 of myDocument
```

Command: preset drop

Specifies whether the callout line attaches to the top, bottom, or center of the callout text box or whether it attaches at a point that's a specified distance from the top or bottom of the text box.

Syntax

preset drop callout format/callout Required. An expression that returns a **callout** or **callout format** object.

  drop type enumeration Required. The starting position of the callout line relative to the text bounding box. Can be one of the following: **drop unset**, **drop custom**, **drop top**, **drop center**, or **drop bottom**. Specifying **drop custom** for this argument will cause your code to fail.

Example

This example specifies that the callout line should attach to the top of the text bounding box for the first shape on myDocument. For the example to work, the first shape must be a callout.

```
set myDocument to worksheet 1

preset drop callout 1 of myDocument drop type drop top
```

This example toggles between two preset drops for shape one on myDocument. For the example to work, shape one must be a callout.

```
set myDocument to worksheet 1

if drop type of callout format of callout 1 of myDocument is drop top then

    preset drop callout 1 of myDocument drop type drop bottom

else if drop type of callout format of callout 1 of myDocument is drop bottom
then

    preset drop callout 1 of myDocument drop type drop top

end if
```

Command: `preset gradient`

Sets the specified fill to a preset gradient.

Syntax

preset gradient   fill format   Required. An expression that returns a **fill format** object.

   gradient style   enumeration   Required. The gradient style. Can be one of the following:

- **gradient unset**
- **horizontal gradient**
- **vertical gradient**
- **diagonal up gradient**
- **diagonal down gradient**
- **from corner gradient**
- **from title gradient** (PowerPoint only)
- **from center gradient**

variant   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is **from center gradient**, the **variant** argument can only be 1 or 2.

preset gradient type   enumeration   Required. The gradient type. Can be one of the following:

preset gradient unset	gradient wheat
gradient early sunset	gradient parchment
gradient late sunset	gradient mahogany
gradient nightfall	gradient rainbow
gradient daybreak	gradient rainbow2
gradient horizon	gradient gold
gradient desert	gradient gold2
gradient ocean	gradient brass
gradient calm water	gradient chrome
gradient fire	gradient chrome2
gradient fog	gradient silver
gradient moss	gradient sapphire
gradient peacock	

Example

This example sets the fill format for shape 2 to the same style used for shape 1.

```
set cIf to fill format of shape 1 of sheet 1
if fill format type of cIf is fill gradient and ¬
        gradient color type of cIf is preset colors gradient type then
   preset gradient fill format of shape 2 of sheet 1 ¬
        gradient style (gradient style of cIf) variant gradient variant ¬
        of cIf preset gradient type (preset gradient type of cIf)
end if
```

Command: `preset textured`

Sets the specified fill format to a preset texture.

Syntax

preset textured   fill format   Required. An expression that returns a **fill format** object.

  preset texture   enumeration   Required. The preset texture. Can be one of the following:

preset texture unset	**texture newsprint**
texture papyrus	**texture recycled paper**
texture canvas	**texture parchment**
texture denim	**texture stationery**
texture woven mat	**texture blue tissue paper**
texture water droplets	**texture pink tissue paper**
texture paper bag	**texture purple mesh**
texture fish fossil	**texture bouquet**
texture sand	**texture cork**
texture green marble	**texture walnut**
texture white marble	**texture oak**
texture brown marble	**texture medium wood**
texture granite	

Example

This example sets the fill format for shape 2 to the same style used for shape 1.

```
set cIf to fill format of shape 1 of sheet 1
if fill format type of cIf is fill textured then
   if texture type of cIf is texture type preset texture then
      preset textured fill format of shape 2 of sheet 1 ¬
         preset texture (preset texture of cIf)
   end if
end if
```

Command: `reroute connections`

Reroutes connectors so that they take the shortest possible path between the shapes they connect. To do this, the **reroute connections** command may detach the ends of a connector and reattach them to different connecting sites on the connected shapes.

This command reroutes all connectors attached to the specified shape; if the specified shape is a connector, it's rerouted.

Syntax

reroute connections   shape   Required. An expression that returns a **shape** object.

Remarks

If this command is applied to a connector, only that connector will be rerouted. If this command is applied to a connected shape, all connectors to that shape will be rerouted.

Example

This example adds two rectangles to myDocument, connects them with a curved connector, and then reroutes the connector so that it takes the shortest possible path between the two rectangles. Note that the **reroute connections** command adjusts the size and position of the connector and determines which connecting sites it attaches to, so the values you initially specify for the **connection site** arguments used with the **begin connect** and **end connect** commands are irrelevant.

```
set myDocument to worksheet 1
set firstRect to make new shape at end of myDocument ¬
        with properties  {auto shape type:autoshape rectangle, ¬
        left position:100, top:50, width:200, height:100}
set secondRect to make new shape at end of myDocument ¬
        with properties {auto shape type:autoshape rectangle, ¬
        left position:300, top:300, width:200, height:100}
set c to make new shape connector at end of myDocument ¬
        with properties  {left position:0, top:0, width:100, ¬
        height:100}
set connector format type of connector format of c to curve
begin connect connector format of c connected shape firstRect ¬
        connection site 1
end connect connector format of c connected shape secondRect ¬
        connection site 1
reroute connections c
```

Command: reset rotation

Resets the extrusion rotation around the x-axis and the y-axis to 0 (zero) so that the front of the extrusion faces forward. This command doesn't reset the rotation around the z-axis.

Syntax

reset rotation   threeD format   Required. An expression that returns a **threeD format** object.

Remarks

To set the extrusion rotation around the x-axis and the y-axis to anything other than 0 (zero), use the *rotation x* and *rotation y* properties of the **threeD format** object. To set the extrusion rotation around the z-axis, use the *rotation* property of the **shape** object that represents the extruded shape.

Example

This example resets the rotation around the x-axis and the y-axis to 0 (zero) for the extrusion of shape 1 on myDocument.

```
set myDocument to worksheet 1
reset rotation threeD format of shape 1 of myDocument
```

Command: `scale height`

Scales the height of the shape by a specified factor. For pictures and OLE objects, you can indicate whether you want to scale the shape relative to the original size or relative to the current size. Shapes other than pictures and OLE objects are always scaled relative to their current height.

Syntax

scale height picture   Required. An expression that returns a **shape** object.

> **factor** small real   Required. Specifies the ratio between the height of the shape after you resize it and the current or original height. For example, to make a rectangle 50 percent larger, specify 1.5 for this argument.

> **relative to original size** Boolean   Required. **True** to scale the shape relative to its original size. **False** to scale it relative to its current size. You can specify **true** for this argument only if the specified shape is a picture or an OLE object.

> [**scale**   enumeration]   Optional. Specifies which part of the shape retains its position when the shape is scaled. Can be one of the following: **scale from bottom right**, **scale from middle**, or **scale from top left**. The default value is **scale from top left**.

Example

This example scales all pictures and OLE objects on `myDocument` to 175 percent of their original height, and it scales all other shapes to 175 percent of their current height.

```
set myDocument to worksheet 1
repeat with s in (get every shape in myDocument)
   if shape type is shape type OLE control or ¬
        shape type is shape type linked ole object or ¬
        shape type is shape type embedded OLE control or ¬
        shape type is shape type linked picture or ¬
        shape type is shape type picture then
      scale height s factor 1.75 relative to original size ¬
        true scale scale from middle
   else
      scale height s factor 1.75 relative to original size ¬
        false scale scale from middle
   end if
end repeat
```

Command: `scale width`

Scales the width of the shape by a specified factor. For pictures and OLE objects, you can indicate whether you want to scale the shape relative to the original size or relative to the current size. Shapes other than pictures and OLE objects are always scaled relative to their current width.

Syntax

scale width   picture   Required. An expression that returns a **shape** object.

> **factor**   small real   Required. Specifies the ratio between the width of the shape after you resize it and the current or original height. For example, to make a rectangle 50 percent larger, specify 1.5 for this argument.

> **relative to original size**   Boolean   Required. **True** to scale the shape relative to its original size. **False** to scale it relative to its current size. You can specify **true** for this argument only if the specified shape is a picture or an OLE object.

> [**scale**   enumeration]   Optional. Specifies which part of the shape retains its position when the shape is scaled. Can be one of the following: **scale from bottom right**, **scale from middle**, or **scale from top left**. The default value is **scale from top left**.

Example

This example scales all pictures and OLE objects on `myDocument` to 175 percent of their original width, and it scales all other shapes to 175 percent of their current width.

```
set myDocument to worksheet 1
repeat with s in (get every shape in myDocument)
   if shape type is shape type OLE control or ¬
        shape type is shape type linked ole object or ¬
        shape type is shape type embedded OLE control or ¬
        shape type is shape type linked picture or ¬
        shape type is shape type picture then
      scale width s factor 1.75 relative to original size ¬
        true scale scale from middle
   else
      scale width s factor 1.75 relative to original size ¬
        false scale scale from middle
   end if
end repeat
```

Command: `send to back (drawing)`

This command is not currently supported.

Command: set extrusion direction

Sets the direction that the extrusion's sweep path takes away from the extruded shape.

Syntax

set extrusion direction   threeD format   Required. An expression that returns a **threeD format** object.

> **preset extrusion direction**   enumeration   Required. Specifies the extrusion direction. Can be one of the following:

- **extrude bottom**
- **extrude bottom left**
- **extrude bottom right**
- **extrude left**
- **extrude none**
- **extrude right**
- **extrude top**
- **extrude top left**
- **extrude top right**
- **preset extrusion direction unset**

Remarks

This command sets the *preset extrusion direction* property of the **threeD format** object to the direction specified by the **preset extrusion direction** argument.

Example

This example specifies that the extrusion for shape 1 on myDocument extend toward the top of the shape and that the lighting for the extrusion come from the left.

```
set myDocument to sheet 1
set extrusion direction threeD format of shape 1 ¬
        of myDocument preset extrusion direction extrude top
set preset lighting direction of threeD format ¬
        of shape 1 of myDocument to light from left
```

Command: `set shapes default properties`

Applies the formatting for the specified shape to the default shape. Shapes created after this command has been used will have this formatting applied by default.

Syntax

set shapes default properties   shape   Required. An expression that returns a **shape** object.

Example

This example adds a rectangle to `myDocument`, formats the rectangle's fill, applies the rectangle's formatting to the default shape, and then adds another smaller rectangle to the document. The second rectangle has the same fill as the first one.

```
set myDocument to sheet 1
set myRect to make new shape at end of myDocument ¬
        with properties {auto shape type: autoshape rectangle, ¬
        top: 5, left position: 5, height:80, width: 60}
set fore color of fill format of myRect to (0,0,255)
set back color of fill format of myRect to (0,204,255)
patterned fill format of myRect pattern diagonal brick pattern
set shapes default properties myRect
make new shape at end of myDocument with properties ¬
        {auto shape type: autoshape rectangle, top: 90, ¬
        left position: 90, height:40, width: 30}
```

Command: `set threed format`

Sets the preset extrusion format. Each preset extrusion format contains a set of preset values for the various properties of the extrusion.

Syntax

set threed format   threeD format   Required. An expression that returns a **threeD format** object.

preset threed format   enumeration   Required. Specifies a preset extrusion format that corresponds to one of the options (numbered from left to right, from top to bottom) displayed when you click the **3-D** button on the **Drawing** toolbar. Can be one of the following:

preset threeD format unset	**format11**
format1	**format12**
format2	**format13**
format3	**format14**
format4	**format15**
format5	**format16**
format6	**format17**
format7	**format18**
format8	**format19**
format9	**format20**
format10	

Remarks

This command sets the *preset threeD format* property of the **threeD format** object to the format specified by the **preset threed format** argument.

Example

This example adds an oval to myDocument and sets its extrusion format to 3D Style 12.

```
set myDocument to sheet 1
set myOval to make new shape at end of myDocument ¬
        with properties {auto shape type: autoshape oval, ¬
        top:30, left position:30, height:50, width:25}
set threed format threeD format of myOval ¬
        preset threed format format12
```

Command: `solid`

Sets the specified fill to a uniform color. Use this command to convert a gradient, textured, patterned, or background fill back to a solid fill.

Syntax

solid   fill format   Required. An expression that returns a **fill format** object.

Example

This example converts all fills on myDocument to uniform red fills.

```
set myDocument to worksheet 1
repeat with s in (get every shape in myDocument)
   solid fill format of s
   set fore color of fill format of s to {255, 0, 0}
end repeat
```

Command: `toggle vertical text`

Switches the text flow in the specified WordArt from horizontal to vertical, or vice versa.

Syntax

toggle vertical text   word art format   Required. An expression that returns a **word art format** object.

Remarks

Using the **toggle vertical text** command swaps the values of the *width* and *height* properties of the **shape** object that represents the WordArt and leaves the *left position* and *top* properties unchanged.

The **flip** command and *rotation* property of the **shape** object and the *rotated chars* property and **toggle vertical text** command of the **word art format** object all affect the character orientation and the direction of text flow in a **shape** object that represents WordArt. You may have to experiment to find out how to combine the effects of these properties and commands to get the result you want.

Example

This example adds WordArt that contains the text "Test" to myDocument and switches from
horizontal text flow (the default for the specified WordArt style, **text effect 1**) to vertical text flow.

```
set myDocument to sheet 1
set myWordArt to make new word art at end of myDocument ¬
        with properties {preset word art effect: text effect1, ¬
        word art text:"Test", font name: "Arial Black", ¬
        font size: 36, bold: false, italic: false, ¬
        left position: 100, top: 100}
toggle vertical text word art format of myWordArt
```

Command: two color gradient

Sets the specified fill to a two-color gradient.

Syntax

two color gradient   fill format   Required. An expression that returns a **fill format** object.

   gradient style   enumeration   Required. The gradient style. Can be one of the following:

- **gradient unset**
- **horizontal gradient**
- **vertical gradient**
- **diagonal up gradient**
- **diagonal down gradient**
- **from corner gradient**
- **from title gradient** (PowerPoint only)
- **from center gradient**

   variant   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding
      to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is
      from center gradient, the **variant** argument can only be 1 or 2.

Example

This example sets the foreground color, background color, and gradient for the fill format on
shape 1.

```
set myDocument to sheet 1
set fore color of fill format of shape 1 ¬
        of myDocument to (0,0,255)
set back color of fill format of shape 1 ¬
        of myDocument to (0,204,255)
two color gradient fill format of shape 1 of myDocument ¬
        gradient style horizontal gradient variant 1
```

Command: `user picture`

This command is not currently supported.

Command: `user textured`

Fills the specified shape with small tiles of an image. To fill the shape with one large image, use the **user picture** command.

Syntax

user textured fill format Required. An expression that returns a **fill format** object.

  [**texture file** Unicode text] Required. The name of the picture file.

Example

This example sets the fill format for shape 1 of sheet 1 to use the picture file "brick.gif" as the texture.

```
user textured fill format of shape 1 of sheet 1 texture file "brick.gif"
```

Command: `z order`

Moves the specified shape in front of or behind other shapes on the worksheet (that is, changes the shape's position in the z-order).

Syntax

z order shape Required. An expression that returns a **shape** object.

  z order command enumeration Required. Specifies where to move the specified shape relative to the other shapes. Can be one of the following: **bring shape to front, send shape to back, bring shape forward**, or **send shape backward**. The constants **bring shape in front of text** and **send shape behind text** are used only in Microsoft Word.

Remarks

To determine a shape's current position in the z-order, use the *z order position* property of the **shape** object.

Example

This example adds an oval to myDocument and then places the oval second from the back in the z-order if there is at least one other shape on the document.

```
set myDocument to sheet 1
set myOval to make new shape at end of myDocument ¬
        with properties {auto shape type: autoshape oval, ¬
        top:100, left position:100, height:100, width:300}
if z order position of myOval > 2 then
   z order myOval z order command send shape backward
end if
```

Text Suite

Text Suite Classes

Class: character

Plural

characters

Represents characters in an object that contains text. The **character** object lets you modify any sequence of characters contained in the full text string.

Use **character** *index*, where *index* is the character number, to return a **character** object. Use **characters** *start* thru *end*, where *start* is the start character number and *end* is the end character, to return a list of **character** objects. The following example adds text to cell B1 and then makes the second word bold.

```
set value of range "B1" to "New Title"
set bold of font object of (characters 5 thru 9 of range "B1") to true
```

Properties

content

Returns or sets the text for the specified character. Read/write.

font object

Returns a **font** object that represents the font of the specified character. Read-only.

phonetic characters

Returns or sets the phonetic text in the specified **character** object. Read/write.

This property is available only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

Class: font

Plural

fonts

Contains the font attributes (font name, font size, color, and so on) for an object.

Use the *font object* property to return the **font** object. The following example formats cells A1:C5 as bold.

```
set bold of font object of range "A1:C5" of worksheet "sheet1" to true
```

If you don't want to format all the text in a cell or graphic the same way, use the **character** class to return a subset of the text.

Properties

bold

> **True** if the font is bold. Read/write.

color

> Returns or sets the primary color of the font as an RGB value. Read/write.

font background

> Returns or sets the text background type. Read/write.

> Can be one of the following:

> - **background automatic**
> - **background opaque**
> - **background transparent**

font color index

> Returns or sets the color of the font. The color is specified as an index value into the current color palette. You can also use **color index none** to specify that you don't want a color, or use **color index automatic** to specify the automatic color (for text).

> This property specifies a color as an index into the workbook color palette. The following illustration shows the color-index values in the default color palette.

font size

>Returns or sets the font size, in points. Read/write.

font style

>Returns or sets the font style. Read/write.

>Changing this property may affect other **font** properties (such as *bold* and *italic*).

italic

>**True** if the font style is italic. Read/write.

name

>Returns or sets the name associated with the **font** object. Read/write.

outline font

>**True** if the font is an outline font. Read/write.

shadow

>**True** if the font is a shadow font or is formatted with a shadow effect. Read/write.

strikethrough

>**True** if the font is struck through with a horizontal line. Read/write.

subscript

>**True** if the font is formatted as subscript. **False** by default. Read/write.

superscript

>**True** if the font is formatted as superscript. **False** by default. Read/write.

underline

>Returns or sets the type of underline applied to the font. Read/write.

>Can be one of the following:

>- **underline style double**
>- **underline style double accounting**
>- **underline style none**
>- **underline style single**
>- **underline style single accounting**

Class: style

Plural

styles

Represents a style description for a range. The **style** object contains all style attributes (font, number format, alignment, and so on) as properties. There are several built-in styles, including Normal, Currency, and Percent. Using the **style** object is a fast and efficient way to change several cell-formatting properties on multiple cells at the same time.

Use the *style object* property to return the **style** object used with a **range** object. The following example applies the Percent style to cells A1:A10 on Sheet1.

```
set style object of range "A1:A10" of worksheet "Sheet1" to ¬

style "Percent" of active workbook
```

You can change the appearance of a cell by changing properties of the style applied to that cell. Keep in mind, however, that changing a style property will affect all cells already formatted with that style.

Use **style** *index*, where *index* is the style index number or name, to return a single **style** object from the workbook's list of **styles**. The following example changes the Normal style for the active workbook by setting the style's *bold* property.

```
set bold of font object of style "Normal" of active workbook to true
```

Styles are sorted alphabetically by style name. The style index number denotes the position of the specified style in the sorted list of style names. `Style 1` is the first style in the alphabetical list, and `style (get count of styles)` is the last one in the list.

Properties

add indent

This property is not used in U.S./English versions of Excel.

built in

True if the style is a built-in style. Read-only.

font object

Returns a **font** object that represents the font of the specified style. Read-only.

formula hidden

True if the formula will be hidden when the workbook or worksheet is protected. Read/write.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

include alignment

True if the style includes the *add indent*, *horizontal alignment*, *vertical alignment*, *wrap text*, and *orientation* properties. Read/write.

include border

True if the style includes the *color*, *color index*, *line style*, and *weight* border properties. Read/write.

include font

True if the style includes the *font background*, *bold*, *color*, *color index*, *font style*, *italic*, *name*, *outline font*, *shadow*, *font size*, *strikethrough*, *subscript*, *superscript*, and *underline* font properties. Read/write.

include number

True if the style includes the *number format* property. Read/write

include patterns

True if the style includes the *color*, *color index*, *invert if negative*, *pattern*, *pattern color*, and *pattern color index* interior properties. Read/write

include protection

True if the style includes the *formula hidden* and *locked* protection properties. Read/write.

indent level

Returns or sets the indent level for the style. Can be an integer from 0 to 15. Read/write.

Using this property to set the indent level to a number less than 0 (zero) or greater than 15 causes an error.

interior object

Returns an **interior** object that represents the interior of the style. Read-only.

locked

True if the style is locked; **false** if the style can be modified when the sheet is protected. Returns **missing value** if the specified range contains both locked and unlocked cells. Read/write.

merged cells

True if the style contains merged cells. Read/write.

name

Returns the name associated with the style object. Read-only.

name local

Returns the name of the style, in the language of the user. Read-only.

If the style is a built-in style, this property returns the name of the style in the language of the current locale.

number format

Returns or sets the format code for the style. Returns **missing value** if all cells in the specified range don't have the same number format. Read/write.

The format code is the same string as the **Format Codes** option in the **Format Cells** dialog box. The **Format** function uses different format code strings than do the *number format* and *number format local* properties.

number format local

Returns or sets the format code for the style as a string in the language of the user. Read/write.

The format code is the same string as the **Format Codes** option in the **Format Cells** dialog box. The **Format** function uses different format code strings than do the *number format* and *number format local* properties.

orientation

Returns or sets the style's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

reading order

This property is not currently supported.

shrink to fit

> **True** if text automatically shrinks to fit in the available column width. Returns **missing value** if this property isn't set to the same value for all cells in the specified range. Read/write.

value

> Returns or sets the name of the specified style. Read/write.

vertical alignment

> Returns or sets the vertical alignment of the style. Read/write.
>
> Can be one of the following:

- **valign top**
- **valign center**
- **valign bottom**
- **valign justify**
- **valign distributed**

> The **valign distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

wrap text

> **True** if Excel wraps the text in the style. Returns **missing value** if the specified range contains some cells that wrap text and other cells that don't. Read/write.
>
> Excel will change the row height of the range, if necessary, to accommodate the text in the range.
>
> .

Text Suite Commands

Command: `get border (text)`

This command is not currently supported

Command: `insert into`

Inserts a string preceding the selected characters.

Syntax

insert into   character   Required. An expression that returns a **character** object.

  string   Unicode text   Required. The string to insert.

Example

This example inserts a string after character 5 in cell B1.

```
insert into (character 5 of range "B1") string "and improved"
```

Table Suite

Table Suite Classes

Class: cell

Plural

cells

Represents a cell in a range.

Use **cell** *index*, where *index* is the cell number, to return a single **cell** object. The following example sets the cell B1 to a given formula.

```
set formula of cell "B1" to "=A1+A2"
```

Properties

<*Inheritance*> **range**

> Inherits the properties and elements of the **range** class.

Class: column

Plural

columns

Represents a column in a range.

Use **column** *index*, where *index* is the name or column letter range, to return a single **column** object. The following example sets all of the cells in column B to a given formula.

```
set formula of column "B:B" to "=A1+A2"
```

Properties

<*Inheritance*> **range**

> Inherits the properties and elements of the **range** class.

Class: range

Plural
ranges

Elements
range

cell

row

column

character

format condition

hyperlink

Represents a cell, a row, a column, a selection of cells containing one or more contiguous blocks of cells, or a 3-D range.

Use **range** *index*, where *index* names the range, to return a **range** object that represents a single cell or a range of cells. The following example places the value of cell A1 in cell A5.

```
set value of range "A5" of active sheet to ¬
        (get value of range "A1" of active sheet)
```

The following example fills the range A1:H8 with random numbers by setting the formula for each cell in the range. When it's used without an object qualifier (an object <u>of</u> another object), the **range** object returns a range on the active sheet. If the active sheet isn't a worksheet, the script fails. Use the **activate object** command to activate a worksheet before you use the **range** object without an explicit object qualifier.

```
activate object worksheet "sheet1"
```

```
set formula of range "A1:H8" to "=rand()"
```

The following example clears the contents of the range named "Criteria."

```
clear contents range "Criteria" of worksheet 1
```

If you use a text argument for the range address, you must specify the address in A1-style notation (you cannot use R1C1-style notation). For more information about how to reference cells and ranges, see the topic "How to reference cells and ranges."

Properties

Excel comment

> Returns a **comment** object that represents the comment associated with the cell in the upper-left corner of the range. Read-only.

add indent

> This property is not used in U.S./English versions of Excel.

areas

Returns a list of **range** objects that represent all the ranges in a multiple-area selection. Read-only.

column width

Returns or sets the width of all columns in the specified range. Read/write.

One unit of column width is equal to the width of one character in the Normal style. For proportional fonts, the width of the character 0 (zero) is used. Use the *width* property to return the width of a column in points. If all columns in the range have the same width, the *column width* property returns the width. If columns in the range have different widths, this property returns **missing value**.

current array

If the specified cell is part of an array, returns a **range** object that represents the entire array. Read-only.

current region

Returns a **range** object that represents the current region. The current region is a range bounded by any combination of blank rows and blank columns. Read-only.

This property is useful for many operations that automatically expand the selection to include the entire current region, such as the **autoformat** command.

dependents

Returns a **range** object that represents the range containing all the dependents of a cell. This can be a multiple selection (a list of **range** objects) if there's more than one dependent. Read-only.

direct dependents

Returns a **range** object that represents the range containing all the direct dependents of a cell. This can be a multiple selection (a list of **range** objects) if there's more than one dependent. Read-only.

direct precedents

Returns a **range** object that represents the range containing all the direct precedents of a cell. This can be a multiple selection (a list of **range** objects) if there's more than one precedent. Read-only.

entire column

Returns a **range** object that represents the entire column (or columns) that contains the specified range. Read-only.

entire row

Returns a **range** object that represents the entire row (or rows) that contains the specified range. Read-only.

first column index

Returns the number of the first column in the first area in the specified range. Read-only.

first row index

Returns the number of the first row in the first area in the specified range. Read-only.

font object

Returns a **font** object that represents the font of the specified range. Read-only.

formula

Returns or sets the formula of the **range** object in A1-style notation. Read/write.

If the cell contains a constant, this property returns the constant. If the cell is empty, *formula* returns an empty string. If the cell contains a formula, *formula* returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, Excel changes the number format to the default short date number format.

Setting the formula for a multiple-cell range fills all cells in the range with the formula.

formula array

Returns or sets the array formula of a range. Returns (or can be set to) a single formula or an array. If the specified range doesn't contain an array formula, this property returns **missing value**. Read/write.

If you use this property to enter an array formula, the formula must use the R1C1 reference style, not the A1 reference style.

formula hidden

True if the formula will be hidden when the workbook or worksheet is protected. Read/write.

Don't confuse this property with the *hidden* property.

formula label

Returns or sets the formula label type for the specified range. Can be **no labels** if the range contains no labels, or one of the following: **row labels**, **column labels**, or **mixed labels**. Read/write.

formula local

Returns or sets the formula for the range, using A1-style references in the language of the user. Read/write.

If the cell contains a constant, this property returns that constant. If the cell is empty, the property returns an empty string. If the cell contains a formula, the property returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, the number format is changed to the default short date number format.

Setting the formula of a multiple-cell range fills all cells in the range with the formula.

formula r1c1

Returns or sets the formula for the range, using R1C1-style notation. Read/write.

If the cell contains a constant, this property returns the constant. If the cell is empty, the property returns an empty string. If the cell contains a formula, the property returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, the number format is changed to the default short date number format.

Setting the formula of a multiple-cell range fills all cells in the range with the formula.

formula r1c1 local

Returns or sets the formula for the range, using R1C1-style notation in the language of the user. Read/write.

If the cell contains a constant, this property returns that constant. If the cell is empty, the property returns an empty string. If the cell contains a formula, the property returns the formula as a string, in the same format in which it would be displayed in the formula bar (including the equal sign).

If you set the value or formula of a cell to a date, Excel checks to see whether that cell is already formatted with one of the date or time number formats. If not, the number format is changed to the default short date number format.

Setting the formula of a multiple-cell range fills all cells in the range with the formula.

has array

True if the specified range is part of an array formula. Read-only.

has formula

True if and only if every cell in the specified range contains a formula. Read-only.

height

Returns the height of the range. Read-only.

hidden

True if the rows or columns are hidden. The specified range must span an entire column or row. Read/write.

Don't confuse this property with the *formula hidden* property.

horizontal alignment

Returns or sets the horizontal alignment for the object. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

indent level

Returns or sets the indent level for the range or style. Can be an integer from 0 to 15. Read/write.

interior object

Returns an **interior** object that represents the interior of the range. Read-only.

left position

Returns or sets the position (in points) of the specified range. Read/write.

list header rows

Returns the number of header rows for the specified range. Read-only.

list object

Returns a **list object** object that represents the list containing the upper-left corner of a specified range. Read-only.

location in table

> If there is a PivotTable report on the sheet, returns a constant that describes the part of the PivotTable report that contains the upper-left corner of the specified range. Read-only.
>
> Can be one of the following:

- **column header**
- **column item**
- **data header**
- **data item**
- **page header**
- **page item**
- **row header**
- **row item**
- **table body**

locked

> **True** if and only if every cell in the specified range is locked. Read/write.

merge area

> Returns a **range** object that represents the merged range containing the specified cell. If the specified cell isn't in a merged range, this property returns the specified cell. Read-only.

merge cells

> **True** if the range contains merged cells. Read/write.

name

> Returns or sets the name of the range. Read/write.

named item

> Returns the named item associated with this range. Read-only.

number format

> Returns or sets the number format code for the range. Returns missing value if all cells in the specified range don't use the same number format code. Read/write.
>
> For a list of existing number format codes, click the **Custom** category on the **Number** tab of the **Format Cells** dialog box (**Format** menu, **Cells** command).

number format local

> Returns or sets the number format code for the range as a string in the language of the user. Read/write.
>
> For a list of existing number format codes, click the **Custom** category on the **Number** tab of the **Format Cells** dialog box (**Format** menu, **Cells** command).

outline level

Returns or sets the current outline level of the specified row or column. Read/write.

Level one is the outermost summary level.

page break

Returns or sets the location of a page break. Can be one of the following: **page break automatic**, **page break manual**, or **page break none**.

This property can return the location of either automatic or manual page breaks, but it can only set the location of manual breaks (it can only be set to **page break manual** or **page break none**).

To remove all manual page breaks on a worksheet: `set page break of (every range of active sheet) to page break none`

phonetic object

Returns the **phonetic** object, which contains information about a specific phonetic text string in a specified range.

This property is available only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

pivot field

Returns a **pivot field** object that represents the pivot field containing the upper-left corner of the specified range. Read-only.

pivot item

Returns a **pivot item** object that represents the pivot item containing the upper-left corner of the specified range. Read-only.

pivot table

Returns a **pivot table** object that represents the PivotTable containing the upper-left corner of the specified range. Read-only.

precedents

Returns a **range** object that represents all the precedents of a cell. This can be a multiple selection (a list of **range** objects) if there's more than one precedent. Read-only.

prefix character

Returns the prefix character for the range. Read-only.

query table

Returns a **query table** object that represents the query table that intersects the specified range. Read-only.

reading order

This property is not currently supported.

row height

Returns the height (in points) of all the rows in the range specified. Returns **missing value** if the rows in the specified range aren't all the same height. Read/write.

For a single row, the value of the *height* property is equal to the value of the *row height* property. However, you can also use the *height* property to return the total height of a range of cells.

In addition, the *height* property is read-only, and if you return the *row height* property of several rows, you will get either the row height of each of the rows (if all the rows are the same height) or **missing value** (if they're different heights). If you return the *height* property of several rows, you will get the total height of all the rows.

show detail

True if the outline is expanded for the specified range (so that the detail of the column or row is visible). The specified range must be a single summary column or row in an outline. Read/write. If the **range** object is in a PivotTable report, this property is **true** if the pivot item is showing detail.

If the specified range isn't in a PivotTable report, the following remarks apply:

- The range must be in a single summary row or column.

- This property returns **false** if *any* of the children of the row or column are hidden.

- Setting this property to **true** is equivalent to unhiding all the children of the summary row or column.

- Setting this property to **false** is equivalent to hiding all the children of the summary row or column.

If the specified range is in a PivotTable, it's possible to set this property for more than one cell at a time if the range is contiguous. This property can be returned only if the range is a single cell.

shrink to fit

True if text automatically shrinks to fit in the available column width. Returns **missing value** if this property isn't set to the same value for all cells in the specified range. Read/write.

string value

Returns the text for the range. Read-only.

style object

Returns a **style** object that represents the style of the specified range. Read-only.

summary

True if the range is an outlining summary row or column. The range should be a row or a column. Read-only.

text orientation

Returns or sets the text orientation. Can be a number value from -90 to 90 degrees. Read/write.

top

Returns or sets the top position (in points) of the specified object. Read/write.

use standard height

True if the row height of the **range** object equals the standard height of the sheet. Returns **missing value** if the range contains more than one row and the rows aren't all the same height. Read/write.

use standard width

True if the column width of the **range** object equals the standard width of the sheet. Returns **missing value** if the range contains more than one column and the columns aren't all the same width. Read/write.

validation

Returns the **validation** object that represents data validation for the specified range. Read-only.

value

If the range is a single cell, returns or sets the value of the specified cell. If the cell is empty, *value* returns an empty string. If the **range** object contains more than one cell, returns a list of values. Each internal list within the outer list corresponds to a row of cell values. The value of a single row returns a list containing a single internal list of cell values.

vertical alignment

Returns or sets the vertical alignment of the object. Read/write.

Can be one of the following:

- **vertical alignment top**

- **vertical alignment center**

- **vertical alignment bottom**

- **vertical alignment justify**

- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

width

Returns or sets the width of the specified range, in points. Read/write.

worksheet object

Returns a **worksheet** object that represents the worksheet containing the specified range. Read-only.

wrap text

True if Excel wraps the text in the range. Returns **missing value** if the specified range contains some cells that wrap text and other cells that don't. Read/write.

Excel will change the row height of the range, if necessary, to accommodate the text in the range.

Class: row

Plural

rows

Represents a row in a range.

Use **row** *index*, where *index* is the name or row number range, to return a single **row** object. The following example sets all of the cells in row 3 to a given formula.

```
set formula of row "3:3" to "=A1+A2"
```

Properties

<Inheritance> **range**

Inherits the properties and elements of the **range** class.

.

Table Suite Commands

Command: activate object (table)

Activates a single cell, which must be inside the current selection.

Syntax

activate range Required. An expression that returns a **range** object.

Example

This example changes the active cell within the selected range to cell B4.

```
select range "B3:B5"
activate object range "B4"
```

Command: add comment

Adds a comment to the range.

Syntax

add comment range Required. An expression that returns a **range** object.

  [**comment text** Unicode text] Optional. The comment text.

Example

This example adds a comment to cell E5 on the active worksheet.

```
add comment (range "E5" of active sheet) comment text "Current Sales"
```

Command: `advanced filter`

Filters or copies data from a list based on a criteria range. If the initial selection is a single cell, that cell's current region is used.

Syntax

advanced filter   range   Required. An expression that returns a **range** object.

   action   enumeration   Required. The filter operation. Can be one of the following: **filter copy** or **filter in place**.

   [**criteria range**   range]   Optional. The criteria range. If this argument is omitted, there are no criteria. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

   [**copy to range**   range]   Optional. The destination range for the copied rows if **action** is **filter copy**. Otherwise, this argument is ignored. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

   [**unique**   Boolean]   Optional. **True** to filter unique records only. **False** to filter all records that meet the criteria. The default value is **false**.

Example

This example filters a database (named "Database") based on a criteria range named "Criteria."

```
advanced filter range "Database" action filter in place ¬
      criteria range range "Criteria"
```

Command: `apply names`

Applies names to the cells in the specified range.

Syntax

apply names   range   Required. An expression that returns a **range** object.

   [**names**   list]   Optional. A list of the names to be applied. If this argument is omitted, all names on the sheet are applied to the range.

   [**ignore relative absolute**   Boolean]   Optional. **True** to replace references with names, regardless of the reference types of either the names or references. **False** to replace absolute references only with absolute names, relative references only with relative names, and mixed references only with mixed names. The default value is **true**.

   [**use row column names**   Boolean]   Optional. **True** to use the names of row and column ranges that contain the specified range if names for the range cannot be found. **False** to ignore the **omit column** and **omit row** arguments. The default value is **true**.

   [**omit column**   Boolean]   Optional. **True** to replace the entire reference with the row-oriented name. The column-oriented name can be omitted only if the referenced cell is in the same column as the formula and is within a row-oriented named range. The default value is **true**.

[**omit row** Boolean] Optional. **True** to replace the entire reference with the column-oriented name. The row-oriented name can be omitted only if the referenced cell is in the same row as the formula and is within a column-oriented named range. The default value is **true**.

[**order** enumeration] Optional. Determines which range name is listed first when a cell reference is replaced by a row-oriented and column-oriented range name. Can be one of the following: **row then column** or **column then row**.

[**append last** Boolean] Optional. **True** to replace the definitions of the names in **names** and also replace the definitions of the last names that were defined. **False** to replace the definitions of the names in **names** only. The default value is **false**.

Remarks

You cannot "unapply" names; to delete names, use the **delete** command.

Example

This example applies names to the entire sheet.

```
apply names (cells of active sheet) names {"Sales", "Profits"}
```

Command: apply outline styles

Applies outlining styles to the specified range.

Syntax

apply outline styles range Required. An expression that returns a **range** object.

Example

The following example applies automatic outlining styles to range A1:E6. The range must include the entire outline range on a worksheet.

```
apply outline styles range "A1:E6"
```

Command: autocomplete

Returns an AutoComplete match from the list. If there's no AutoComplete match or if more than one entry in the list matches the string to complete, this command returns an empty string.

Syntax

autocomplete range Required. An expression that returns a **range** object (must be a single cell).

 string Unicode text Required. The string to complete.

Remarks

This command works even if the AutoComplete feature is disabled.

Example

This example returns the AutoComplete match for the string segment "Ap." An AutoComplete match is made if the column containing cell A5 contains a contiguous list and one of the entries in the list contains a match for the string.

```
set suggest to autocomplete range "A2" string "Ap"
if (suggest ≠ "") then
        display dialog "Completes to " & suggest
else
        display dialog "Has no completion"
end if
```

Command: autofill

Performs an AutoFill on the cells in the specified range.

Syntax

autofill range Required. An expression that returns a **range** object.

   destination range Required. The cells to be filled. The destination must include the source range. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

   [**type** enumeration] Optional. Specifies the fill type. Can be one of the following: **fill copy**, **fill days**, **fill default**, **fill formats**, **fill months**, **fill series**, **fill values**, **fill weekdays**, **fill years**, **growth trend**, or **linear trend**. If this argument is **fill default** or omitted, Excel selects the most appropriate fill type based on the source range.

Example

This example performs an AutoFill on cells A1:A20 on Sheet1, based on the source range A1:A2 on Sheet1. Before running this example, type **1** in cell A1 and type **2** in cell A2.

```
autofill range "A1:A2" destination range "A1:A20"
```

Command: autofilter range

Filters a list using the AutoFilter.

Note To return an **autofilter** object, apply the *autofilter object* property to a **sheet** object.

Syntax

autofilter range range Required. An expression that returns a **range** object.

   [**field** integer] Optional. The integer offset of the field on which you want to base the filter (from the left of the list; the leftmost field is field one).

   [**criteria1** Unicode text] Optional. The criterion (a string; for example, "101"). If **operator** is **top 10 items**, **criteria1** specifies the number of items (for example, "10").

[**operator** enumeration] Optional. Can be one of the following: **autofilter and**, **bottom 10 items**, **bottom 10 percent**, **autofilter or**, **top 10 items**, or **top 10 percent**. Use **autofilter and** and **autofilter or** with **criteria1** and **criteria2** to construct compound criteria.

[**criteria2** Unicode text] Optional. The second criterion (a string). Used with **criteria1** and **operator** to construct compound criteria.

[**visible drop down** Boolean] Optional. **True** to display the AutoFilter drop-down arrow for the filtered field. **False** to hide the AutoFilter drop-down arrow for the filtered field. **True** by default.

Remarks

If you omit all the arguments, this command toggles the display of the AutoFilter drop-down arrows in the specified range.

Example

This example filters a list starting in cell A1 on Sheet1 to display only the entries in which field 1 is equal to the string "Otis". The drop-down arrow for field 1 will be hidden.

```
autofilter range (range "A1" of worksheet "Sheet1") field 1 criteria1 "Otis" ¬
        without visible drop down
```

Command: autofit

Changes the width of the columns in the range or the height of the rows in the range to achieve the best fit.

Syntax

autofit range Required. An expression that returns a **range** object. Must be a row or a range of rows, or a column or a range of columns. Otherwise, this command generates an error.

Remarks

One unit of column width is equal to the width of one character in the Normal style.

Example

This example changes the width of columns A through I on Sheet1 to achieve the best fit.

```
autofit every column of range "A:I"
```

This example changes the width of columns A through E on Sheet1 to achieve the best fit, based only on the contents of cells A1:E1.

```
autofit every column of range "A1:E1"
```

Command: `autoformat`

Automatically formats a range of cells, using a predefined format.

Syntax

autoformat   range   Required. An expression that returns a **range** object.

[**format**   enumeration]   Optional. The range format to be used.

Can be one of the following:

range autoformat threeD effects 1	**range autoformat color 3**
range autoformat threeD effects 2	**range autoformat list 1**
range autoformat accounting 1	**range autoformat list 2**
range autoformat accounting 2	**range autoformat list 3**
range autoformat accounting 3	**range autoformat local format 1**
range autoformat accounting 4	**range autoformat local format 2**
range autoformat classic 1	**range autoformat local format 3**
range autoformat classic 2	**range autoformat local format 4**
range autoformat classic 3	**range autoformat none**
range autoformat color 1	**range autoformat simple**
range autoformat color 2	

The default value is **range autoformat classic 1**. The **range autoformat local format 1**, **range autoformat local format 2**, **range autoformat local format 3**, and **range autoformat local format 4** values are not used in the U.S. English version of Excel.

[**number**   Boolean]   Optional. **True** to include number formats in the autoformat. The default value is **true**.

[**font**   Boolean]   Optional. **True** to include font formats in the autoformat. The default value is **true**.

[**alignment**   Boolean]   Optional. **True** to include alignment in the autoformat. The default value is **true**.

[**border**   Boolean]   Optional. **True** to include border formats in the autoformat. The default value is **true**.

[**pattern**   Boolean]   Optional. **True** to include pattern formats in the autoformat. The default value is **true**.

[**width**   Boolean]   Optional. **True** to include column width and row height in the autoformat. The default value is **true**.

Example

This example formats cells A1:D8 on Sheet1, using a predefined format.

```
autoformat range "A1:D8" format range autoformat classic 1
```

Command: `auto outline`

Automatically creates an outline for the specified range. If the range is a single cell, Excel creates an outline for the entire sheet. The new outline replaces any existing outline.

Syntax

auto outline range   Required. An expression that returns a **range** object.

Example

This example creates an outline for the range A1:G37 on Sheet1. The range must contain either a summary row or a summary column.

```
auto outline range "A1:G37" of sheet "Sheet1"
```

Command: `border around`

Adds a border to a range and sets the *color*, *line style*, and *weight* properties for the new border.

Syntax

border around range   Required. An expression that returns a **range** object.

[**line style** enumeration]   Optional. The line style for the border. The default value is **continuous**.

Can be one of the following:

- **continuous**
- **dash**
- **dash dot**
- **dash dot dot**
- **dot**
- **double**
- **slant dash dot**
- **line style none**

[**weight** enumeration]   Optional. The border weight. The default value is **border weight thin**.

Can be one of the following:

- **border weight hairline**
- **border weight medium**
- **border weight thick**
- **border weight thin**

[**color index** enumeration]   Optional. The border color. The color is specified as an index value into the current color palette, or as one of the following:

- **color index automatic**

- **color index none**

The following illustration shows the color-index values in the default color palette.

[**color** RGB color]   Optional. The border color, as an RGB value.

Remarks

You can specify either **color index** or **color**, but not both. If you don't specify either argument, Excel uses the **color index automatic** color index value.

Similarly, you can specify either **line style** or **weight**, but not both. If you don't specify either argument, Excel creates a default border.

This command outlines the entire range without filling it in. To set the borders of all the cells, you must set the *color*, *line style*, and *weight* properties for the list of **border** objects on the worksheet. To clear the border, you must set the *line style* property to **line style none** for all the cells in the range.

Example

This example adds a thick red border around the range A2:D4 on Sheet1.

```
border around range "A2:D4" color index 3 weight border weight thick
```

Command: calculate (table)

Calculates a specified range of cells on a worksheet.

Syntax

calculate range   An expression that returns a **range** object.

Example

This example calculates the formulas in columns A, B, and C in the used range on Sheet1.

```
calculate columns 1 through 3 of used range
```

Command: `check spelling (table)`

Checks the spelling of text in a range. This form has no return value; Excel displays the **Spelling** dialog box.

check spelling   range   Required. An expression that returns a **range** object.

[**custom dictionary**   Unicode text]   Optional. A string that indicates the file name of the custom dictionary to examine if the word isn't found in the main dictionary. If this argument is omitted, the currently specified dictionary is used.

[**ignore uppercase**   Boolean]   Optional. **True** to have Excel ignore words that are all uppercase. **False** to have Excel check words that are all uppercase. If this argument is omitted, the current setting will be used.

[**always suggest**   Boolean]   Optional. **True** to have Excel display a list of suggested alternate spellings when an incorrect spelling is found. **False** to have Excel wait for you to input the correct spelling. If this argument is omitted, the current setting will be used.

Example
This example checks the spelling on Sheet1.

```
check spelling range "A1:G10" of sheet "Sheet1"
```

Command: `clear contents (table)`

Clears the formulas from the range.

Syntax

clear contents   range   Required. An expression that returns a **range** object.

Example
This example clears the formulas from cells A1:G37 on Sheet1 but leaves the formatting intact.

```
clear contents range "A1:G37" of sheet "Sheet1"
```

Command: `clear Excel comments`

Clears all cell comments from the specified range.

Syntax

clear Excel comments   range   Required. An expression that returns a **range** object.

Example
This example clears all comments from cell E5.

```
clear Excel comments range "E5" of sheet 1
```

Command: `clear outline`

Clears the outline for the specified range.

Syntax

clear outline   range   Required. An expression that returns a **range** object.

Example

This example clears the outline for the range A1:G37 on Sheet1.

```
clear outline range "A1:G37" of sheet "Sheet1"
```

Command: `clear range`

Clears the entire **range** object.

Syntax

clear range   range   Required. An expression that returns a **range** object.

Example

This example clears the formulas and formatting in cells A1:G37 on Sheet1.

```
clear range range "A1:G37" of sheet "Sheet1"
```

Command: `clear range formats`

Clears the formatting of the specified range.

Syntax

clear range formats   range   Required. An expression that returns a **range** object.

Example

This example clears all formatting from cells A1:G37 on Sheet1.

```
clear range formats range "A1:G37" of sheet "Sheet1"
```

Command: `column differences`

Returns a **range** object that represents all the cells whose contents are different from the comparison cell in each column.

Syntax

column differences   range   Required. An expression that returns a **range** object containing the cells to compare.

comparison   range   Required. A single cell to compare to the specified range. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

Example

This example selects the cells in column A on Sheet1 whose contents are different from cell A4.

```
set r1 to column differences range "A:A" comparison range "A4"
select r1
```

Command: consolidate

Consolidates data from multiple ranges on multiple worksheets into a single range on a single worksheet.

Syntax

consolidate   range   Required. An expression that returns a **range** object.

[**sources**   list]   Optional. The sources of the consolidation as a list of text reference strings in R1C1-style notation. The references must include the full path of sheets to be consolidated.

[**consolidation function**   enumeration]   Optional. The consolidation function. The default value is **do average**. Can be one of the following:

do average	**do standard deviation**
do count	**do standard deviation p**
do count numbers	**do sum**
do maximum	**do var**
do minimum	**do var p**
do product	

[**top row**   Boolean]   Optional. **True** to consolidate data based on column titles in the top row of the consolidation ranges. **False** to consolidate data by position. The default value is **false**.

[**left column**   Boolean]   Optional. **True** to consolidate data based on row titles in the left column of the consolidation ranges. **False** to consolidate data by position. The default value is **false**.

[**create links**   Boolean]   Optional. **True** to have the consolidation use worksheet links. **False** to have the consolidation copy the data. The default value is **false**.

Example

This example consolidates data from Sheet2 and Sheet3 onto Sheet1 using the SUM function.

```
consolidate (range "A1" of worksheet "Sheet1") sources {"Sheet2!R1C1:R37C6", ¬
        "Sheet3!R1C1:R37C6"} consolidation function do sum
```

Command: `copy picture (table)`

Copies the selected object to the Clipboard as a picture.

Syntax

copy picture range Required. An expression that returns a **range** object.

[**appearance** enumeration] Optional. Specifies how the picture should be copied. Can be **screen** or **printer**. If **screen** is used, the picture is copied to resemble its display on the screen as closely as possible. If **printer** is used, the picture is copied as it will look when it's printed. The default value is **screen**.

[**format** enumeration] Optional. The format of the picture. Can be **picture** or **bitmap**. The default value is **picture**.

Remarks

If you copy a range, it must be made up of adjacent cells.

Example

This example copies a screen image of cells A1:D4 on Sheet1 to the Clipboard, and then it pastes the bitmap to another location on Sheet1.

```
copy picture range "A1:D4" appearance screen format bitmap
```

Command: `copy range`

Copies the **range** to the specified range or to the Clipboard.

Syntax

copy range range Required. An expression that returns a **range** object.

[**destination** range] Optional. Specifies the new range to which the specified range will be copied. If this argument is omitted, Excel copies the range to the Clipboard.

Example

This example copies the formulas in cells A1:D4 on Sheet1 into cells E5:H8 on Sheet2.

```
set sourceRange to range "A1:D4" of sheet 1
set destRange to range "E5" of sheet 2
copy range sourceRange destination destRange
```

Command: `create names`

Creates names in the specified range based on text labels in the sheet.

Syntax

create names range   Required. An expression that returns a **range** object.

[**top** Boolean]   Optional. **True** to create names by using labels in the top row. The default value is **false**.

[**left position** Boolean]   Optional. **True** to create names by using labels in the left column. The default value is **false**.

[**bottom** Boolean]   Optional. **True** to create names by using labels in the bottom row. The default value is **false**.

[**right** Boolean]   Optional. **True** to create names by using labels in the right column. The default value is **false**.

Remarks

If you don't specify either **top**, **left position**, **bottom**, or **right**, Excel guesses the location of the text labels based on the shape of the specified range.

Example

This example creates names for cells B1:B3 based on the text in cells A1:A3. Note that you must include the cells that contain the names in the range, even though the names are created only for cells B1:B3.

```
set rangeToName to range "A1:B3" of worksheet "Sheet1"
```

```
create names rangeToName with left position
```

Command: `cut range`

Cuts the range object to the Clipboard or pastes it into a specified destination.

Syntax

cut range range   Required. An expression that returns a **range** object.

[**destination of cut** range]   Optional. The range where the object should be pasted. Can be a **range** object, an A1-style range reference, a named range, or a list of category names. If this argument is omitted, the object is cut to the Clipboard.

Remarks

The cut range must be made up of adjacent cells.

Example

This example cuts the range A1:G37 on Sheet1 and places it on the Clipboard.

```
cut range range "A1:G37" of sheet "Sheet1"
```

Command: `data series`

Creates a data series in the specified range.

Syntax

data series range Required. An expression that returns a **range** object.

[**rowcol** enumeration] Optional. Can be **by rows** or **by columns** to have the data series entered in rows or columns, respectively. If this argument is omitted, the size and shape of the range is used.

[**data series type** enumeration] Optional. Can be one of the following: **autofill series**, **chronological series**, **growth series**, or **data series linear**.

[**date** enumeration] Optional. If the **data series type** argument is **chronological series**, the **date** argument indicates the step date unit. The default value is **series date day**. Can be one of the following: **series date day**, **series date month**, **series date weekday**, or **series date year**.

[**increment** integer] Optional. The step value for the series. The default value is 1.

[**stop** integer] Optional. The stop value for the series. If this argument is omitted, Excel fills to the end of the range.

[**trend** Boolean] Optional. **True** to create a linear trend or growth trend. **False** to create a standard data series. The default value is **false**.

Example

This example creates a series of 12 dates. The series contains the last day of every month in 1996 and is created in the range A1:A12 on Sheet1.

```
set dateRange to range "A1:A12" of worksheet "Sheet1"
set formula of range "A1" of worksheet "Sheet1" to "31-JAN-1996"
data series dateRange data series type chronological series ¬
        date series date month
```

Command: `data table`

Creates a data table based on input values and formulas that you define on a worksheet.

Syntax

data table range Required. An expression that returns a **range** object.

[**row input** cell] Optional. A single cell to use as the row input for your table.

[**column input** cell] Optional. A single cell to use as the column input for your table.

Remarks

Use data tables to perform a what-if analysis by changing certain constant values on your worksheet to see how values in other cells are affected.

Example

This example creates a formatted multiplication table in cells A1:K11 on Sheet1.

```
set dtRange to range "A1:K11"
set rowInputCell to cell "A12"
set colInputCell to cell "A13"

set formula of range "A1" to "=A12*A13"
set value of range "B1" to 1
autofill range "B1" destination "B1:K1" type fill series
set value of range "A2" to 1
autofill range "A2" destination "A2:A11" type fill series

data table dtRange row input rowInputCell column input colInputCell
```

Command: delete range

Deletes the **range** object.

Syntax

delete range   range   Required. An expression that returns a **range** object.

[**shift** enumeration]   Optional. Used only with **range** objects. Specifies how to shift cells to replace deleted cells. Can be **shift to left** or **shift up**. If this argument is omitted, Excel decides based on the shape of the range.

Example

This example deletes cells A1:D10 on Sheet1 and shifts the remaining cells to the left.

```
delete range range "A1:D10" shift shift to left
```

Command: fill down

Fills down from the top cell or cells in the specified range to the bottom of the range. The contents and formatting of the cell or cells in the top row of a range are copied into the rest of the rows in the range.

Syntax

fill down   range   Required. An expression that returns a **range** object.

Example

This example fills the range A1:A10 on Sheet1, based on the contents of cell A1.

```
fill down range "A1:A10" of sheet "Sheet1"
```

Command: `fill left`

Fills left from the rightmost cell or cells in the specified range. The contents and formatting of the cell or cells in the rightmost column of a range are copied into the rest of the columns in the range.

Syntax

fill left range   Required. An expression that returns a **range** object.

Example

This example fills the range A1:M1 on Sheet1, based on the contents of cell M1.

```
fill left range "A1:M1" of sheet "Sheet1"
```

Command: `fill right`

Fills right from the leftmost cell or cells in the specified range. The contents and formatting of the cell or cells in the leftmost column of a range are copied into the rest of the columns in the range.

Syntax

fill right range   Required. An expression that returns a **range** object.

Example

This example fills the range A1:M1 on Sheet1, based on the contents of cell A1.

```
fill right range "A1:M1" of sheet "Sheet1"
```

Command: `fill up`

Fills up from the bottom cell or cells in the specified range to the top of the range. The contents and formatting of the cell or cells in the bottom row of a range are copied into the rest of the rows in the range.

Syntax

fill up range   Required. An expression that returns a **range** object.

Example

This example fills the range A1:A10 on Sheet1, based on the contents of cell A10.

```
fill up range "A1:A10" of sheet "Sheet1"
```

Command: `find`

Finds specific information in a range, and returns a **range** object that represents the first cell where that information is found. Returns an error if no match is found. Doesn't affect the selection or the active cell.

Syntax

find   range   Required. An expression that returns a **range** object.

   what   Unicode text   Required. The data to search for. Can be a string or any Excel data type.

   [**after**   range]   Optional. The cell after which you want to search. Can be a **range** object, an A1-style range reference, a named range, or a list of category names. This corresponds to the position of the active cell when a search is done from the user interface. Note that **after** must be a single cell in the range. Remember that the search begins *after* this cell; the specified cell isn't searched until the command wraps back around to this cell. If this argument isn't specified, the search starts after the cell in the upper-left corner of the range.

   [**look in**   enumeration]   Optional. Specifies where the **find** command should look. Can be **formulas**, **values**, or **comments**.

   [**look at**   enumeration]   Optional. Specifies the part that should be looked at. Can be **whole** or **part**.

   [**search order**   enumeration]   Optional. Specifies whether the search should be done by rows or by columns. Can be **by rows** or **by columns**.

   [**search direction**   enumeration]   Optional. Specifies the search direction, either next or previous. Can be **search next** or **search previous**. The default value is **search next**.

   [**match case**   Boolean]   Optional. **True** to make the search case sensitive.

   [**match byte**   Boolean]   Optional. Used only in the Japanese version of Excel. **True** to have double-byte characters match only double-byte characters. **False** to have double-byte characters match their single-byte equivalents.

Remarks

The settings for **look in**, **look at**, **search order**, **match case**, and **match byte** are saved each time you use this command. If you don't specify values for these arguments the next time you call the command, the saved values are used. Setting these arguments changes the settings in the **Find** dialog box, and changing the settings in the **Find** dialog box changes the saved values that are used if you omit the arguments. To avoid problems, set these arguments explicitly each time you use this command.

The **find next** and **find previous** commands can be used to repeat the search.

When the search reaches the end of the specified search range, it wraps around to the beginning of the range. To stop a search when this wraparound occurs, save the address of the first found cell, and then test each successive found-cell address against this saved address.

To find cells that match more complicated patterns, use a nested loop. For example, the following code searches for all cells in the range A1:E5 that use a font whose name starts with the letters "Cour". When Excel finds a match, it changes the font to Times New Roman.

```
repeat with theRow from 1 to 5
        repeat with theCol in {"A", "B", "C", "D", "E"}
        if name of font object of cell (theCol & theRow) contains "Cour" then
        set name of font object of cell (theCol & theRow) to "Times New Roman"
        end if
        end repeat
end repeat
```

Example

This example shows how the **find** command is used with the **find next** and **find previous** commands. Before running this example, make sure that Sheet1 contains at least two occurrences of the word "Phoenix" in column B.

```
set fc to (find (range "B:B" of worksheet "Sheet1") what "Phoenix")
display dialog "The first occurrence is in cell " & (get address fc)
set fc to (find next (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The next occurrence is in cell " & (get address fc)
set fc to (find previous (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The previous occurrence is in cell " & (get address fc)
```

Command: find next

Continues a search that was begun with the **find** command. Finds the next cell that matches those same conditions and returns a **range** object that represents that cell. Doesn't affect the selection or the active cell.

Syntax

find next   range   Required. An expression that returns a **range** object.

[**after**   range]   Optional. The cell after which you want to search. Can be a **range** object, an A1-style range reference, a named range, or a list of category names. This corresponds to the position of the active cell when a search is done from the user interface. Note that **after** must be a single cell in the range. Remember that the search begins *after* this cell; the specified cell isn't searched until the command wraps back around to this cell. If this argument isn't specified, the search starts after the cell in the upper-left corner of the range.

Remarks

When the search reaches the end of the specified search range, it wraps around to the beginning of the range. To stop a search when this wraparound occurs, save the address of the first found cell, and then test each successive found-cell address against this saved address.

Example

This example shows how the **find next** command is used with the **find** and **find previous** commands. Before running this example, make sure that Sheet1 contains at least two occurrences of the word "Phoenix" in column B.

```
set fc to (find (range "B:B" of worksheet "Sheet1") what "Phoenix")
display dialog "The first occurrence is in cell " & (get address fc)
set fc to (find next (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The next occurrence is in cell " & (get address fc)
set fc to (find previous (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The previous occurrence is in cell " & (get address fc)
```

Command: find previous

Continues a search that was begun with the **find** command. Finds the previous cell that matches those same conditions and returns a **range** object that represents that cell. Doesn't affect the selection or the active cell.

Syntax

find previous   range   Required. An expression that returns a **range** object.

[**after**   range]   Optional. The cell after which you want to search. Can be a **range** object, an A1-style range reference, a named range, or a list of category names. This corresponds to the position of the active cell when a search is done from the user interface. Note that **after** must be a single cell in the range. Remember that the search begins *after* this cell; the specified cell isn't searched until the command wraps back around to this cell. If this argument isn't specified, the search starts after the cell in the upper-left corner of the range.

Remarks

When the search reaches the beginning of the specified search range, it wraps around to the end of the range. To stop a search when this wraparound occurs, save the address of the first found cell, and then test each successive found-cell address against this saved address.

Example

This example shows how the **find previous** command is used with the **find** and **find next** commands. Before running this example, make sure that Sheet1 contains at least two occurrences of the word "Phoenix" in column B.

```
set fc to (find (range "B:B" of worksheet "Sheet1") what "Phoenix")
display dialog "The first occurrence is in cell " & (get address fc)
set fc to (find next (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The next occurrence is in cell " & (get address fc)
set fc to (find previous (range "B:B" of worksheet "Sheet1") after fc)
display dialog "The previous occurrence is in cell " & (get address fc)
```

Command: `function wizard`

Starts the Function Wizard for the upper-left cell of the range.

Syntax

function wizard range   Required. An expression that returns a **range** object.

Example

This example starts the Function Wizard for the cell A1 on Sheet1.

```
function wizard cell "A1" of sheet "Sheet1"
```

Command: `get address`

Returns the range reference.

Syntax

get address   range   Required. An expression that returns a **range** object.

[**row absolute** Boolean]   Optional. Set to **true** to return the row part of the reference as an absolute reference. The default value is **true**.

[**column absolute** Boolean]   Optional. Set to **true** to return the column part of the reference as an absolute reference. The default value is **true**.

[**reference style** enumeration]   Optional. Specifies what reference style should be returned. Can be **A1** or **R1C1**. The default value is **A1**.

[**external** Boolean]   Optional. Set to **true** to return an external reference, **false** to return a local reference. The default value is **false**.

[**relative to** range]   Optional. If **row absolute** and **column absolute** are **false**, and **reference style** is **R1C1**, you must include a starting point for the relative reference. This argument is a **range** object that defines the starting point. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

Example

This example looks for the string "bananas" and if found, returns the range reference. Before running this example, make sure that Sheet1 contains at least one occurrence of the word "bananas" in the range A1:A4.

```
set fdRange to find range "A1:A4" what "bananas"
display dialog "Found bananas in cell " & (get address fdRange)
```

Command: `get address local`

Returns the range reference in the language of the user.

Syntax

get address local   range   Required. An expression that returns a **range** object.

  [**row absolute**   Boolean]   Optional. Set to **true** to return the row part of the reference as an absolute reference. The default value is **true**.

  [**column absolute**   Boolean]   Optional. Set to **true** to return the column part of the reference as an absolute reference. The default value is **true**.

  [**reference style**   enumeration]   Optional. Specifies what reference style should be returned. Can be **A1** or **R1C1**. The default value is **A1**.

  [**external**   Boolean]   Optional. Set to **true** to return an external reference, **false** to return a local reference. The default value is **false**.

  [**relative to**   range]   Optional. If **row absolute** and **column absolute** are **false**, and **reference style** is **R1C1**, you must include a starting point for the relative reference. This argument is a **range** object that defines the starting point. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

Example

This example looks for the string "bananas" and if found, returns the range reference. Before running this example, make sure that Sheet1 contains at least one occurrence of the word "bananas" in the range A1:A4.

```
set fdRange to find range "A1:A4" what "bananas"
display dialog "Found bananas in cell " & (get address local fdRange)
```

Command: `get border (table)`

Returns the specified **border** object.

get border   range   Required. An expression that returns a **border** object.

  which border   enumeration   Required. The border to be retrieved. Can be one of the following:

inside horizontal	**edge right**
inside vertical	**edge top**
diagonal down	**border bottom**
diagonal up	**border left**
edge bottom	**border right**
edge left	**border top**

Example

This example adds a solid border around the range A1:B5.

```
set line style of (get border range "A1:B5" which border border top) ¬
        to continuous
set line style of (get border range "A1:B5" which border border bottom) ¬
        to continuous
set line style of (get border range "A1:B5" which border border left) ¬
        to continuous
set line style of (get border range "A1:B5" which border border right) ¬
        to continuous
```

Command: get end

Returns a **range** object that represents the cell at the end of the region that contains the source range.

Syntax

get end range Required. An expression that returns a **range** object.

   direction enumeration Required. The direction in which to move. Can be one of the following: **toward the bottom**, **toward the left**, **toward the right**, or **toward the top**.

Example

This example finds the cell furthest to the right of the cell C2 in the range containing C2. Before running this example, make sure that Sheet1 contains data in every cell in the range A1:E5. The example should return E2.

```
set theEnd to get end range "C2" direction toward the right
```

Command: get offset

Returns a **range** object that represents a range that's offset from the specified range.

Syntax

get offset range Required. An expression that returns a **range** object.

  [**row offset** integer] Optional. The number of rows — positive, negative, or zero — by which the range is to be offset. The default value is 0.

  [**column offset** integer] Optional. The number of columns — positive, negative, or zero — by which the range is to be offset. The default value is 0.

Example

This example gets the **range** object for a range that is offset of range A3:E5 by 3 rows and 4 columns. The example should return a reference for range E6:I8.

```
get offset range "A3:E5" row offset 3 column offset 4
```

Command: `get resize`

Resizes the specified range. Returns a **range** object that represents the resized range.

Syntax

get resize   range   Required. An expression that returns a **range** object.

[**row size** integer]   Optional. The number of rows in the new range. If this argument is omitted, the number of rows in the range remains the same.

[**column size** integer]   Optional. The number of columns in the new range. If this argument is omitted, the number of columns in the range remains the same.

Example

This example changes the size of the range A3:E5 to a range 7 rows down by 4 columns across, with A3 as the top left cell. The example should return a reference for the range A3:D9.

```
get resize range "A3:E5" row size 7 column size 4
```

Command: `get XML value`

Returns the value of the specified range as XML.

Syntax

get XML value   range   Required. An expression that returns a **range** object.

Example

This example gets the value of the range A1:C3 as XML.

```
get XML value range "A1:C3"
```

Command: `goal seek`

Calculates the values necessary to achieve a specific goal. If the goal is an amount returned by a formula, this calculates a value that, when supplied to your formula, causes the formula to return the number you want. Returns **true** if the goal seek is successful.

Syntax

goal seek   range   Required. An expression that returns a **range** object. Must be a single cell.

goal   real   Required. The value you want returned in this cell.

changing cell   range   Required. Specifies which cell should be changed to achieve the target value.

Example

This example assumes that Sheet1 has a cell named "Polynomial" that contains the formula =(X^3)+(3*X^2)+6 and another cell named "X" that's empty. The example finds a value for X so that Polynomial contains the value 15.

```
goal seek (range "Polynomial" of worksheet "Sheet1") goal 15 ¬
        changing cell (range "X" of worksheet "Sheet1")
```

Command: group

When the **range** object represents a single cell in the pivot field's data range, the **group** command performs numeric or date-based grouping in a pivot field.

Syntax

group range Required. An expression that returns a **range** object. The **range** object must be a single cell in the pivot field's data range. If you attempt to apply this command to more than one cell, it will fail (without displaying an error message).

[**start** integer] Optional. The first value to be grouped. If this argument is omitted or **true**, the first value in the field is used.

[**end** integer] Optional. The last value to be grouped. If this argument is omitted or **true**, the last value in the field is used.

[**by** integer] Optional. If the field is numeric, this argument specifies the size of each group.

If the field is a date, this argument specifies the number of days in each group if element 4 in the **periods** list is **true** and all the other elements are **false**. Otherwise, this argument is ignored.

If this argument is omitted, Excel automatically chooses a default group size.

[**periods** list] Optional. A list of Boolean values that specify the period for the group, as shown in the following table.

Element	Period
1	Seconds
2	Minutes
3	Hours
4	Days
5	Months
6	Quarters
7	Years

If an element in the list is **true**, a group is created for the corresponding time; if the element is **false**, no group is created. If the field isn't a date field, this argument is ignored.

Example

This example groups the field named "ORDER_DATE" by 10-day periods.

```
set pvtTable to pivot table of range "A3" of worksheet "Sheet1"
set groupRange to data range of pivot field "ORDER_DATE" of pvtTable
group (cell 1 of groupRange) by 10 periods {false, false, false, true, false, ¬
        false, false}
```

Command: `insert indent`

Adds an indent to the specified range.

Syntax

insert indent   range   Required. An expression that returns a **range** object.

  insert amount   integer   Required. The amount to be added to the current indent.

Remarks

Using this command to set the indent level to a number less than 0 (zero) or greater than 15 causes an error.

To return the indent level for a range, use the *indent level* property of the **range** object.

Example

This example decreases the indent level in cell A10.

```
insert indent range "A10" insert amount -1
```

Command: `insert into range`

Inserts a cell or a range of cells into the worksheet or macro sheet and shifts other cells away to make space.

Syntax

insert into range   range   Required. An expression that returns a **range** object.

  [**shift**   enumeration]   Optional. Specifies which way to shift the cells. Can be one of the following: **shift down** or **shift to right**. If this argument is omitted, Excel decides based on the shape of the range.

Example

This example inserts a new row before row four on Sheet1.

```
insert into range row 4 of sheet "Sheet1"
```

This example inserts new cells at the range A1:C5 on Sheet1 and shifts cells downward.

```
insert into range range "A1:C5" of sheet "Sheet1" shift shift down
```

Command: `justify`

Rearranges the text in a range so that it fills the range evenly.

Syntax

justify   range   Required. An expression that returns a **range** object.

Remarks

If the range isn't large enough, Excel displays a message telling you that text will extend below the range. If you click the **OK** button, justified text will replace the contents in cells that extend beyond the selected range. To prevent this message from appearing, set the *display alerts* property of the **application** object to **false**. After you set this property, text will always replace the contents in cells below the range.

Example

This example justifies the text in cell A1 on Sheet1. Before you run this example, make sure you have text in cell A1.

```
justify range "A1" of sheet "Sheet1"
```

Command: `list names`

Pastes a list of all non-hidden names onto the worksheet, beginning with the first cell in the range.

Syntax

list names   range   Required. An expression that returns a **range** object.

Example

This example pastes a list of defined names into cell A1 on Sheet1. The example pastes both workbook-level names and sheet-level names defined on Sheet1.

```
list names range "A1" of sheet "Sheet1"
```

Command: `merge`

Creates a merged cell from the specified **range** object.

Syntax

merge   range   Required. An expression that returns a **range** object.

  [**across**   Boolean]   Optional. **True** to merge cells in each row in the specified range as separate merged cells. The default value is **false**.

Remarks

The value of a merged range is the value specified for the cell in the upper-left corner of the merged range.

Example

This example merges all of the cells in range A1:C10 into cell A1.

```
merge range "A1:C10"
```

Command: `navigate arrow`

Navigates a tracer arrow for the specified range to the precedent, dependent, or error-causing cell or cells. Selects the precedent, dependent, or error cells and returns a **range** object that represents the new selection. This command causes an error if it's applied to a cell without visible tracer arrows.

Syntax

navigate arrow　range　Required. An expression that returns a **range** object.

[**toward precedent**　Boolean]　Optional. Specifies the direction to navigate: **true** to navigate toward precedents, **false** to navigate toward dependents.

[**arrow number**　integer]　Optional. Specifies the arrow number to navigate; corresponds to the numbered reference in the cell's formula.

[**link number**　integer]　Optional. If the arrow is an external reference arrow, this argument indicates which external reference to follow. If this argument is omitted, the first external reference is followed.

Example

This example navigates along the first tracer arrow from cell A1 on Sheet1 toward the precedent cell. The example should be run on a worksheet containing a formula in cell A1 that includes references to cells D1, D2, and D3 (for example, the formula =D1*D2*D3). Before running the example, display the **Auditing** toolbar, select cell A1, and click the **Trace Precedents** button.

```
activate object worksheet "Sheet1"
select range "A1"
navigate arrow active cell arrow number 1 with toward precedent
```

Command: `parse`

Parses a range of data and breaks it into multiple cells. Distributes the contents of the range to fill several adjacent columns; the range can be no more than one column wide.

Syntax

parse　range　Required. An expression that returns a **range** object.

[**parse line**　Unicode text]　Optional. A string that contains left and right brackets to indicate where the cells should be split. For example, "[xxx][xxx]" would insert the first three characters into the first column of the destination range, and it would insert the next three characters into the second column. If this argument is omitted, Excel guesses where to split the columns based on the spacing of the top left cell in the range. If you want to use a different range to guess the parse line, use a **range** object as the **parse line** argument. That range must be one of the cells that's being parsed. The **parse line** argument cannot be longer than 255 characters, including the brackets and spaces.

[**destination** range]   Optional. A **range** object that represents the upper-left corner of the destination range for the parsed data. If this argument is omitted, Excel parses in place. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

Example

This example divides telephone numbers of the form 206-555-1212 into two columns. The first column contains only the area code, and the second column contains the seven-digit telephone number with the embedded hyphen.

```
parse (range "A:A" of worksheet "Sheet1") parse line "[XXX] [XXXXXXX]" ¬
        destination (range "B1" of worksheet "Sheet1")
```

Command: paste special

Pastes a **range** from the Clipboard into the specified range.

Syntax

paste special range   Required. An expression that returns a **range** object.

[**what** enumeration]   Optional. The part of the range to be pasted. The default value is **paste all**. Can be one of the following:

paste all	**paste values**
paste all except borders	**paste column widths**
paste formats	**paste validation**
paste formulas	**paste formulas and number formats**
paste comments	**paste values and number formats**

[**operation** enumeration]   Optional. The paste operation. Can be one of the following:

- **paste special operation add**

- **paste special operation subtract**

- **paste special operation multiply**

- **paste special operation divide**

- **paste special operation none**

[**skip blanks** Boolean]   Optional. **True** to have blank cells in the range on the Clipboard not be pasted into the destination range.

[**transpose** Boolean]   Optional. **True** to transpose rows and columns when the range is pasted. The default value is **false**.

Example

This example replaces the data in cells D1:D5 on Sheet1 with the sum of the existing contents and cells C1:C5 on Sheet1.

```
copy range range "C1:C5"
```

```
paste special range "D1:D5" operation paste special operation add
```

Command: `print out (table)`

Prints the object.

Syntax

print out range   Required. An expression that returns a **range** object.

[**from** integer]   Optional. The number of the page at which to start printing. If this argument is omitted, printing starts at the beginning.

[**to** integer]   Optional. The number of the last page to print. If this argument is omitted, printing ends with the last page.

[**copies** integer]   Optional. The number of copies to print. If this argument is omitted, one copy is printed.

[**preview** Boolean]   Optional. **True** to have Excel invoke print preview before printing the object. **False** (or omitted) to print the object immediately.

[**active printer** Unicode text]   Optional. This argument is not currently supported.

[**print to file** Boolean]   Optional. This argument is not currently supported.

[**collate** Boolean]   Optional. **True** to collate multiple copies.

Remarks

"Pages" in the descriptions of **from** and **to** refers to printed pages, not overall pages in the sheet or workbook.

This command applies to the **window** object only when it's the Info window.

Example

This example prints the active sheet.

```
print out active sheet
```

Command: `print preview (table)`

Shows a preview of the object as it would look when printed.

Syntax

print preview range   Required. An expression that returns a **range** object.

[**enable changes** Boolean]   Optional. Controls access to the **Page Setup** dialog box and the ability to change margins from the **Preview** window by enabling or disabling the **Setup** and **Margins** buttons, respectively.

Example

This example displays Sheet1 in print preview.

```
print preview sheet "Sheet1"
```

Command: remove subtotal

Removes subtotals from a list.

Syntax

remove subtotal range   Required. An expression that returns a **range** object.

Example

This example removes subtotals from the range A1:G37 on Sheet1. The example should be run on a list that has subtotals.

```
remove subtotal range "A1:G37" of sheet "Sheet1"
```

Command: replace

Finds and replaces characters in cells within a range. Doesn't change the selection or the active cell.

Syntax

replace range   Required. An expression that returns a **range** object.

  what Unicode text   Required. The string to search for.

  replacement Unicode text   Required. The replacement string.

  [**look at** enumeration]   Optional. Specifies the part that should be looked at. Can be **whole** or **part**.

  [**search order** enumeration]   Optional. Specifies whether the search should be rows or columns. Can be **by rows** or **by columns**.

  [**match case** Boolean]   Optional. **True** to make the search case sensitive.

  [**match byte** Boolean]   Optional. Used only in the Japanese versions of Excel. **True** to have double-byte characters match only double-byte characters. **False** to have double-byte characters match their single-byte equivalents.

  [**match control characters** Boolean]   Optional. Used only in the Japanese version of Excel. **True** to have double-byte characters match only double-byte characters. **False** to have double-byte characters match their single -byte equivalents.

  [**match diacritics** Boolean]   Optional. Used only in the Japanese version of Excel. **True** to have double-byte characters match only double-byte characters. **False** to have double-byte characters match their single-byte equivalents.

Remarks

The settings for **look at**, **search order**, **match case**, and **match byte** are saved each time you use this command. If you don't specify values for these arguments the next time you call the command, the saved values are used. Setting these arguments changes the settings in the **Find** dialog box, and changing the settings in the **Find** dialog box changes the saved values that are used if you omit the arguments. To avoid problems, set these arguments explicitly each time you use this command.

If the contents of the **what** argument are found in at least one cell on the sheet, this command returns **true**.

Example

This example replaces every occurrence of the function SIN with the function COS. The replacement range is column A on Sheet1.

```
replace (range "A:A" of worksheet "Sheet1") what "SIN" replacement "COS" ¬
        search order by columns with match case
```

Command: row differences

Returns a **range** object that represents all the cells whose contents are different from those of the comparison cell in each row.

Syntax

row differences   range   Required. An expression that returns a range containing the cells to be compared.

  comparison   cell   Required. A single cell to compare with the specified range.

Example

This example selects the cells in row one on Sheet1 whose contents are different from those of cell D1.

```
set c1 to row differences range "1:1" comparison range "D1"
```

```
select c1
```

Command: run VB macro (table)

Runs the Excel 4.0 (XLM) macro at this location. The range must be on a macro sheet.

Syntax

run VB macro   range   Required. An expression that returns a range on a macro sheet that contains an Excel 4.0 (XLM) macro.

  [**arg1, arg2, ...**   anything]   Optional. The arguments that should be passed to the function.

Remarks

You cannot use named arguments with this command. Arguments must be passed by position.

The **run VB macro** command returns whatever the called macro returns. Objects passed as arguments to the macro are converted to values (by applying the *value* property to the **range** object). This means that you cannot pass objects to macros by using the **run VB macro** command.

Example

This example shows how to call the function macro My_Func_Sum, which is defined on the macro sheet Mycustom.xlm (the macro sheet must be open). The function takes two numeric arguments (1 and 5, in this example).

```
set mySum to (run VB macro (range "MYCUSTOM.XLM!My_Func_Sum") arg1 1 arg2 5)
```

```
display dialog "Macro result: " & mySum
```

Command: `set XML value`

Sets the value of the specified range as XML.

Syntax

set XML value   range   Required. An expression that returns a **range** object.

   range value   anything   Required. The value of the range.

Example

This example sets the value of the range A1:C3 as XML.

```
set XML value range "A1:C3" range value "test"
```

Command: `show (table)`

Scrolls through the contents of the active window to move the range into view.

Syntax

show   range   Required. An expression that returns a **range** object.

Example

This example scrolls through the contents of the active window to show cell M1.

```
show range "M1"
```

Command: `show dependents`

Draws tracer arrows to the direct dependents of the range.

Syntax

show dependents   range   Required. An expression that returns a **range** object. Must be a single cell.

   [**remove**   Boolean]   Optional. **True** to remove one level of tracer arrows to direct dependents.
      False to expand one level of tracer arrows. The default value is **false**.

Example

This example draws tracer arrows to dependents of cell D7 on Sheet1.

```
show dependents range "D7"
```

This example removes the tracer arrow for one level of dependents of cell D7 on Sheet1.

```
show dependents range "D7" remove true
```

Command: `show errors`

Draws tracer arrows through the precedents tree to the cell that's the source of the error, and returns the range that contains that cell.

Syntax

show errors range   Required. An expression that returns a **range** object.

Example

This example displays a red tracer arrow if there's an error in the active cell on Sheet1.

```
activate object worksheet "Sheet1"
show errors active cell
```

Command: `show precedents`

Draws tracer arrows to the direct precedents of the range.

Syntax

show precedents   range   Required. An expression that returns a **range** object. Must be a single cell.

[**remove**   Boolean]   Optional. **True** to remove one level of tracer arrows to direct precedents. **False** to expand one level of tracer arrows. The default value is **false**.

Example

This example draws tracer arrows to the precedents of cell D7 on Sheet1.

```
show precedents range "D7"
```

This example removes the tracer arrow for one level of precedents of the active cell on Sheet1.

```
show precedents active cell remove true
```

Command: `sort`

Sorts a PivotTable report, a range, or the current region (if the specified range contains only one cell).

Syntax

sort   range   Required. An expression that returns a **range** object.

[**key1**   range]   Optional. The first sort field, as either text (a pivot field or range name) or a **range** object ("Dept" or cells "1,1", for example).

[**order1**   enumeration]   Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key1** in ascending order. Use **sort descending** to sort **key1** in descending order. The default value is **sort ascending**.

[**key2** range] Optional. The second sort field, as either text (a pivot field or range name) or a **range** object. If this argument is omitted, there's no second sort field. Not used when sorting PivotTable reports.

[**order2** enumeration] Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key2** in ascending order. Use **sort descending** to sort **key2** in descending order. The default value is **sort ascending**. Not used when sorting PivotTable reports.

[**key3** range] Optional. The third sort field, as either text (a range name) or a **range** object. If this argument is omitted, there's no third sort field. Not used when sorting PivotTable reports.

[**order3** enumeration] Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key3** in ascending order. Use **sort descending** to sort **key3** in descending order. The default value is **sort ascending**. Not used when sorting PivotTable reports.

[**header** enumeration] Optional. Specifies whether the first row contains headers. Can be one of the following: **header yes**, **header no**, or **header guess**. Use **header yes** if the first row contains headers (it shouldn't be sorted). Use **header no** if there are no headers (the entire range should be sorted). Use **header guess** to let Excel determine whether there's a header, and to determine where it is, if there is one. The default value is **header no**. Not used when sorting PivotTable reports.

[**order custom** integer] Optional. A 1-based integer offset into the list of custom sort orders. If this argument is omitted, 1 (Normal) is used.

[**match case** Boolean] Optional. **True** to do a case-sensitive sort; **false** to do a sort that's not case sensitive. Not used when sorting PivotTable reports.

[**orientation** enumeration] Optional. Specifies whether the sort is done top to bottom or bottom to top. Can be **sort rows** or **sort columns**. If **sort rows** is used, the sort is done from top to bottom (by row). If **sort columns** is used, the sort is done from left to right (by column).

[**sort method** enumeration] Optional. The type of sort. Can be **stroke** (to sort phonetically) or **pin yin** (to sort by code page). The default value is **stroke**. This argument works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

[**ignore control characters** Boolean] Optional. This argument is currently not supported.

[**ignore diacritics** Boolean] Optional. This argument is currently not supported.

Example

This example sorts the range A1:C20 on Sheet1, using cell A1 as the first sort key and cell B1 as the second sort key. The sort is done in ascending order by row, and there are no headers.

```
sort range "A1:C20" of worksheet "Sheet1" key1 (range "A1" of ¬
        worksheet "Sheet1") key2 (range "B1"of worksheet "Sheet1")
```

This example sorts the current region that contains cell A1 on Sheet1, sorting by the data in the first column and automatically using a header row if one exists. The **sort** command determines the current region automatically.

```
sort range "A1" of worksheet "Sheet1" key1 (range "A:A" of worksheet "Sheet1") ¬
        header header guess
```

Command: `sort special`

Uses Japanese sorting techniques to sort the range, or uses the current region if the range contains only one cell.

Syntax

sort special   range   Required. An expression that returns a **range** object.

[**sort method**   enumeration]   Optional. Specifies how to sort. Can be **stroke** (to sort phonetically) or **pin yin** (to sort by code page). The default value is **stroke**. This argument works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

[**key1**   range]   Optional. The first sort field, as either text (a pivot field or range name) or a **range** object ("Dept" or `cells "1,1"`, for example).

[**order1**   enumeration]   Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key1** in ascending order. Use **sort descending** to sort **key1** in descending order. The default value is **sort ascending**.

[**type**   enumeration]   Optional. Specifies which elements are sorted. Can be **sort values** or **sort labels**. Used only when sorting PivotTable reports.

[**key2**   range]   Optional. The second sort field, as either text (a pivot field or range name) or a **range** object. If this argument is omitted, there's no second sort field. Not used when sorting PivotTable reports.

[**order2**   enumeration]   Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key2** in ascending order. Use **sort descending** to sort **key2** in descending order. The default value is **sort ascending**. Not used when sorting PivotTable reports.

[**key3**   range]   Optional. The third sort field, as either text (a range name) or a **range** object. If this argument is omitted, there's no third sort field. Not used when sorting PivotTable reports.

[**order3**   enumeration]   Optional. Can be **sort ascending**, **sort descending**, or **sort manual**. Use **sort ascending** to sort **key3** in ascending order. Use **sort descending** to sort **key3** in descending order. The default value is **sort ascending**. Not used when sorting PivotTable reports.

[**header**   enumeration]   Optional. Specifies whether the first row contains headers. Can be one of the following: **header yes**, **header no**, or **header guess**. Use **header yes** if the first row contains headers (it shouldn't be sorted). Use **header no** if there are no headers (the entire range should be sorted). Use **header guess** to let Excel determine whether there's a header, and to determine where it is, if there is one. The default value is **header no**. Not used when sorting PivotTable reports.

[**order custom**   integer]   Optional. A 1-based integer offset into the list of custom sort orders. If this argument is omitted, 1 (Normal) is used.

[**match case**   Boolean]   Optional. **True** to do a case-sensitive sort; **false** to do a sort that's not case sensitive. Not used when sorting PivotTable reports.

[**orientation**   enumeration]   Optional. Specifies whether the sort is done top to bottom or bottom to top. Can be **sort rows** or **sort columns**. If **sort rows** is used, the sort is done from top to bottom (by row). If **sort columns** is used, the sort is done from left to right (by column).

Example

This example sorts the range A1:G37 on Sheet1, using cell A1 as the first sort key and cell C1 as the second sort key. The sort is done in ascending order by row, and there are no headers.

```
sort special range "A1:G37" of worksheet "Sheet1" key1 (range "A1" of ¬
        worksheet "Sheet1") order1 sort ascending key2 (range "C1" of ¬
        worksheet "Sheet1") order2 sort ascending
```

Command: special cells

Returns a **range** object that represents all the cells that match the specified type and value.

Syntax

special cells range Required. An expression that returns a **range** object.

  type enumeration Required. The cells to include. Can be one of the following:

Value	Description
cell type all format conditions	All cells containing a format condition
cell type all validation	All cells containing data validation
cell type blanks	Empty cells
cell type comments	Cells containing comments
cell type constants	Cells containing constants
cell type formulas	Cells containing formulas
cell type last cell	The last cell in the used range
cell type same format conditions	Cells containing the same format conditions
cell type same validation	Cells containing the same data validation
cell type visible	All visible cells

  [**value** enumeration] Optional. If **type** is either **cell type constants** or **cell type formulas**, this argument is used to determine which types of cells to include in the result. These values can be added together to return more than one type. The default is to select all constants or formulas, no matter what the type. Can be one of the following: **errors**, **logical**, **numbers**, or **text values**.

Example

This example selects the last cell in the used range of Sheet1.

```
activate object worksheet "Sheet1"
activate object (special cells (cells of active sheet) ¬
        type cell type last cell)
```

Command: `subtotal`

Creates subtotals for the range (or the current region, if the range is a single cell).

Syntax

subtotal   range   Required. An expression that returns a **range** object.

  group by   integer   Required. The field to group by, as a 1-based integer offset. For more information, see the example.

  function   enumeration   Required. The subtotal function. Can be one of the following:

do average	**do standard deviation**
do count	**do standard deviation p**
do count numbers	**do sum**
do maximum	**do var**
do minimum	**do var p**
do product	

  total list   list   Required. A list of 1-based field offsets, indicating the fields to which the subtotals are added. For more information, see the example.

  [**replace**   Boolean]   Optional. **True** to replace existing subtotals. The default value is **false**.

  [**page breaks**   Boolean]   Optional. **True** to add page breaks after each group. The default value is **false**.

  [**summary below data**   enumeration]   Optional. Can be **summary above** or **summary below**. The default value is **summary below**.

Example

This example creates subtotals for the selection on Sheet1. The subtotals are sums grouped by each change in field one, with the subtotals added to fields two and three.

```
activate object worksheet "Sheet1"
subtotal selection group by 1 function do sum total list {2, 3}
```

Command: `text to columns`

Parses a column of cells that contain text into several columns.

Syntax

text to columns   range   Required. An expression that returns a **range** object.

  [**destination**   range]   Optional. A **range** object that specifies where Excel will place the results. If the range is larger than a single cell, the top left cell is used. Can be a **range** object, an A1-style range reference, a named range, or a list of category names.

  [**data type**   enumeration]   Optional. The format of the text to be split into columns. Can be **delimited** or **fixed width**. The default value is **delimited**.

[**text qualifier**   enumeration]   Optional. The text qualifier. Can be one of the following: **text qualifier double quote**, **text qualifier single quote**, or **text qualifier none**. The default value is **text qualifier double quote**.

[**consecutive delimiter**   Boolean]   Optional. **True** to have Excel consider consecutive delimiters as one delimiter. The default value is **false**.

[**tab**   Boolean]   Optional. **True** to have **data type** be **delimited** and to have the tab character be a delimiter. The default value is **false**.

[**semicolon**   Boolean]   Optional. **True** to have **data type** be **delimited** and to have the semicolon be a delimiter. The default value is **false**.

[**comma**   Boolean]   Optional. **True** to have **data type** be **delimited** and to have the comma be a delimiter. The default value is **false**.

[**space**   Boolean]   Optional. **True** to have **data type** be **delimited** and to have the space character be a delimiter. The default value is **false**.

[**use other**   Boolean]   Optional. **True** to have **data type** be **delimited** and to have the character be specified by the **other char** argument be a delimiter. The default value is **false**.

[**other char**   Unicode text]   Optional. (required if **use other** is **true**). The delimiter character when **use other** is **true**. If more than one character is specified, only the first character of the string is used; the remaining characters are ignored.

[**field info**   list]   Optional. A list containing parse information for the individual columns of data. The interpretation depends on the value of **data type**.

When the data is delimited, this argument is a list of two-element column specifiers, each specifying the conversion options for a particular column. The first element is the column number (1-based), and the second element is one of the following numbers, specifying how the column is parsed:

1   General

2   Text

3   MDY date

4   DMY date

5   YMD date

6   MYD date

7   DYM date

8   YDM date

9   Skip the column

The column specifiers can be in any order. If a given column specifier is not present for a particular column in the input data, the column is parsed with the **General** setting. This example causes the third column to be skipped, the first column to be parsed as text, and the remaining columns in the source data to be parsed with the **General** setting.

```
{{3, 9}, {1, 2}}
```

If the source data has fixed-width columns, the first element of each column specifier indicates the starting character position in the column (as an integer; 0 (zero) is the first character). The second element specifies the parse option for the column as a number from 1 through 9, as listed above.

The following example parses two columns from a fixed-width file, with the first column starting at the beginning of the line and extending for 10 characters. The second column starts at position 15 and goes to the end of the line. To avoid including the characters between position 10 and position 15, Excel adds a skipped column entry.

```
{{0, 1}, {10, 9}, {15, 1}}
```

[**decimal separator** Unicode text] Optional. A string specifying whether a comma or period is used in the text file as the separator for decimal numbers.

[**thousands separator** Unicode text] Optional. A string specifying whether a comma, period, or apostrophe is used in the text file as the separator for thousands.

Example

This example converts the contents of the Clipboard, which contains a space-delimited text table, into separate columns on Sheet1. You can create a simple space-delimited table in a text editor, copy the text table to the Clipboard, switch to Excel, and then run this example.

```
activate object worksheet "Sheet1"

paste sheet active sheet

text to columns selection data type delimited ¬
        with consecutive delimiter and tab
```

Command: ungroup

Promotes a range in an outline (that is, decreases its outline level). The specified range must be a row or column, or a range of rows or columns. If the range is in a PivotTable report, this command ungroups the items contained in the range.

Syntax

ungroup range Required. An expression that returns a **range** object.

Remarks

If the active cell is in a field header of a parent field, all the groups in that field are ungrouped and the field is removed from the PivotTable report. When the last group in a parent field is ungrouped, the entire field is removed from the PivotTable report.

Example

This example ungroups the ORDER_DATE field.

```
set pvtTable to pivot table of range "A3" of worksheet "Sheet1"

set groupRange to data range of pivot field "ORDER_DATE" of pvtTable

ungroup (cell 1 of groupRange)
```

Command: `unmerge`

Separates a merged area into individual cells.

Syntax

unmerge range   Required. An expression that returns a **range** object.

Example

This example separates the merged range that contains cell A3.

```
unmerge range "A3"
```

Proofing Suite

Proofing Suite Classes

Class: autocorrect

Contains Excel AutoCorrect attributes (capitalization of names of days, correction of two initial capital letters, automatic correction list, and so on).

Use the **autocorrect** class to set the attributes of the **autocorrect** object. The following example sets Excel to correct words that begin with two initial capital letters.

```
set two initial capitals of autocorrect object to true

set replace text of autocorrect object to true
```

Properties

capitalize names of days

> **True** if the first letter of day names is capitalized automatically. Read/write.

correct caps lock

> **True** if Excel automatically corrects accidental use of the CAPS LOCK key. Read/write.

correct sentence cap

> **True** if Excel automatically corrects sentence (first word) capitalization. Read/write.

replace text

> **True** if text in the list of AutoCorrect replacements is replaced automatically. Read/write.

two initial capitals

> **True** if words that begin with two capital letters are corrected automatically. Read/write..

Proofing Suite Commands

Command: `add replacement`

Adds an entry to the list of AutoCorrect replacements.

Syntax

add replacement   autocorrect   Required. An expression that returns an **autocorrect** object.

  text to replace   Unicode text   Required. The text to be replaced. If this string already exists in the list of AutoCorrect replacements, the existing substitute text is replaced by the new text.

  replacement text   Unicode text   Required. The replacement text.

Example

This example substitutes the word "Temp." for the word "Temperature" in the list of AutoCorrect replacements.

```
add replacement autocorrect object text to replace "Temp." ¬
        replacement text "Temperature"
```

Command: `delete replacement`

Deletes an entry from the list of AutoCorrect replacements.

Syntax

delete replacement   autocorrect   Required. An expression that returns an **autocorrect** object.

  what   Unicode text   Required. The text to be replaced, as it appears in the row to be deleted from the list of AutoCorrect replacements. If this string doesn't exist in the list of AutoCorrect replacements, this command fails.

Example

This example removes the word "Temp" from the list of AutoCorrect replacements.

```
delete replacement autocorrect object what "Temp"
```

Command: `get replacement list`

Returns a list of AutoCorrect replacements.

Syntax

get replacement list   autocorrect   Required. An expression that returns a **list** object.

Example

```
set myList to get replacement list autocorrect object
```

Chart Suite

Chart Suite Classes

Class: `area group`

Plural

area groups

Represents one or more series plotted in an area chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and an area chart group, containing all the series plotted with the area chart format.

Use **area group** *index*, where *index* is the chart-group index number, to return a single **area group** object. The following example adds drop lines to area group 1 on the active chart.

```
set has drop lines of area group 1 of active chart to true
```

Properties

<*Inheritance*> **chart group**

> Inherits the properties and elements of the **chart group** class.

Class: `axis`

Plural

axes

Represents a single axis in a chart.

Use **axis** *type*, *group* to return a single **axis** object. *Type* can be one of the following: **category axis**, **series axis**, or **value axis**. *Group* can be **primary axis** or **secondary axis**.

The following example sets the category axis title text on the active chart.

```
set axis1 to (get axis active chart axis type category axis)
set has title of axis1 to true
set axis title text of axis title of axis1 to "1994"
```

Properties

axis between categories

> **True** if the value axis crosses the category axis between categories. Read/write.

> This property applies only to category axes, and it does not apply to 3-D charts.

axis group

> Returns the group for the specified axis, chart group, or series. Read-only.

> Can be one of the following:

> - **primary axis**
> - **secondary axis**

> For 3-D charts, only **primary axis** is valid.

axis title

Returns an **axis title** object that represents the title of the specified axis. Read-only.

axis type

Returns or sets the axis type. Read/write.

Can be one of the following:

- **category axis**

- **series axis**

- **value axis**

base unit

Returns or sets the base unit for the specified category axis. Read/write.

Can be one of the following:

- **days**

- **months**

- **years**

Setting this property has no visible effect if the *category type* property for the specified axis is set to **category scale**. The set value is retained, however, and takes effect when the *category type* property is set to **time scale**.

You cannot set this property for a value axis.

base unit is auto

True if Excel chooses appropriate base units for the specified category axis. The default value is **True**. Read/write.

You cannot set this property for a value axis.

border

Returns a **border** object that represents the border of the object. Read-only.

category names

Returns or sets all the category names for the specified axis, as a list. You can set this property to either a list or a **range** object that contains the category names. Read/write.

Category names are really a property of the "special" series in an axis grouping. Deleting or modifying that special series changes the category names for all series using the axis.

category type

Returns or sets the category axis type. Read/write.

Can be one of the following:

- **category scale**

- **time scale**

- **automatic scale**

You cannot set this property for a value axis.

crosses

Returns or sets the point on the specified axis where the other axis crosses. Read/write.

Can be one of the following:

Constant	Meaning
axis crosses automatic	Excel sets the axis crossing point.
axis crosses minimum	The axis crosses at the minimum value.
axis crosses maximum	The axis crosses at the maximum value.
axis crosses custom	The *crosses at* property specifies the axis crossing point.

This property is not available for 3-D charts or radar charts.

This property can be used for both category and value axes. On the category axis, **axis crosses minimum** sets the value axis to cross at the first category, and **axis crosses maximum** sets the value axis to cross at the last category.

Note that **axis crosses minimum** and **axis crosses maximum** can have different meanings, depending on the axis.

crosses at

Returns or sets the point on the value axis where the category axis crosses it. Applies only to the value axis. Read/write.

Setting this property causes the *crosses* property to change to **axis crosses custom**.

This property cannot be used on 3-D charts or radar charts.

display unit

Returns or sets the unit label for the specified axis. Read/write.

Can be one of the following:

hundreds	**ten millions**
thousands	**hundred millions**
ten thousands	**thousand millions**
hundred thousands	**million millions**
millions	**custom display unit**

If the value is **custom display unit**, the *display unit custom* property returns or sets the value of the displayed units.

Using unit labels when charting large values makes your tick mark labels easier to read. For example, if you label your value axis in units of hundreds, thousands, or millions, you can use smaller numeric values at the tick marks on the axis.

display unit custom

If the value of the *display unit* property is **custom display unit**, the *display unit custom* property returns or sets the value of the displayed units. The value must be from 0 through 10E307. Read/write.

Using unit labels when charting large values makes your tick mark labels easier to read. For example, if you label your value axis in units of hundreds, thousands, or millions, you can use smaller numeric values at the tick marks on the axis.

display unit label

Returns the **display unit label** object for the specified axis. Returns **missing value** if the *has display unit label* property is set to **false**. Read-only.

has display unit label

True if the label specified by the *display unit* or *display unit custom* property is displayed on the specified axis. The default value is **true**. Read/write.

has major gridlines

True if the axis has major gridlines. Only axes in the primary axis group can have gridlines. Read/write.

has minor gridlines

True if the axis has minor gridlines. Only axes in the primary axis group can have gridlines. Read/write.

has title

True if the axis has a visible title. An axis title is represented by an **axis title** object. Read/write.

height

Returns the height (in points) of the axis. Read-only.

left position

Returns the distance (in points) from the left edge of the axis to the left edge of the chart area. Read-only.

major gridlines

Returns a **gridlines** object that represents the major gridlines for the specified axis. Only axes in the primary axis group can have gridlines. Read-only.

major tick mark

Returns or sets the type of major tick mark for the specified axis. Read/write.

Can be one of the following:

- **tick mark cross**
- **tick mark inside**
- **tick mark none**
- **tick mark outside**

major unit

Returns or sets the major units for the axis. Read/write.

Setting this property sets the *major unit is auto* property to **false**.

To set tick mark spacing on the category axis, use the *tick mark spacing* property.

major unit is auto

True if Excel calculates the major units for the axis. Read/write.

Setting the *major unit* property sets this property to **false**.

major unit scale

> Returns or sets the major unit scale value for the category axis when the *category type* property is set to **time scale**. Read/write.
>
> Can be one of the following:
>
> - **days**
> - **months**
> - **years**

maximum scale

> Returns or sets the maximum value on the axis. Read/write.
>
> Setting this property sets the *maximum scale is auto* property to **false**.

maximum scale is auto

> **True** if Excel calculates the maximum value for the axis. Read/write.
>
> Setting the *maximum scale* property sets this property to **false**.

minimum scale

> Returns or sets the minimum value on the axis. Read/write.
>
> Setting this property sets the *minimum scale is auto* property to **false**.

minimum scale is auto

> **True** if Excel calculates the minimum value for the axis. Read/write.
>
> Setting the *minimum scale* property sets this property to **false**.

minor gridlines

> Returns a **gridlines** object that represents the minor gridlines for the specified axis. Only axes in the primary axis group can have gridlines. Read-only.

minor tick mark

> Returns or sets the type of minor tick mark for the specified axis. Read/write.
>
> Can be one of the following:
>
> - **tick mark cross**
> - **tick mark inside**
> - **tick mark none**
> - **tick mark outside**

minor unit

> Returns or sets the minor units on the axis. Read/write.
>
> Setting this property sets the *minor unit is auto* property to **false**.
>
> To set tick mark spacing on the category axis, use the *tick mark spacing* property.

minor unit is auto

> **True** if Excel calculates minor units for the axis. Read/write.
>
> Setting the *minor unit* property sets this property to **false**.

minor unit scale

> Returns or sets the minor unit scale value for the category axis when the *category type* property is set to **time scale**. Read/write.
>
> Can be one of the following:
>
> - **days**
> - **months**
> - **years**

reverse plot order

> **True** if Excel plots data points from last to first. Read/write.
>
> This property cannot be used on radar charts.

scale type

> Returns or sets the value axis scale type. Can be **scale linear** or **scale logarithmic**. Applies only to the value axis. Read/write.
>
> A logarithmic scale uses base 10 logarithms.

tick label position

> Describes the position of tick-mark labels on the specified axis. Read/write.
>
> Can be one of the following:
>
> - **tick label position high**
> - **tick label position low**
> - **tick label position next to axis**
> - **tick label position none**

tick label spacing

> Returns or sets the number of categories or series between tick-mark labels. Applies only to category and series axes. Read/write.
>
> Tick-mark label spacing on the value axis is always calculated by Excel.

tick labels

> Returns a **tick labels** object that represents the tick-mark labels for the specified axis. Read-only.

tick mark spacing

> Returns or sets the number of categories or series between tick marks. Applies only to category and series axes. Read/write.
>
> To set tick-mark spacing on the value axis, use the *major unit* and *minor unit* properties.

top

> Returns the distance (in points) from the top edge of the axis to the top of the chart area. Read-only.

width

> Returns the width of the axis. Read-only.

Class: axis title

Plural
axis titles

Elements
character

Represents a chart axis title.

Use the *axis title* property to return an **axis title** object. The following example activates the active chart, sets the value axis title text, sets the font color to red, and formats the word "millions" as italic.

```
set axis1 to (get axis active chart axis type value axis)

set has title of axis1 to true

set t1 to axis title of axis1

set axis title text of t1 to "millions"

set font color index of font object of t1 to 3

set italic of font object of t1 to true
```

If the *has title* property for the axis is **false**, trying to use the **axis title** object will generate an access violation.

Properties
auto scale font

> **True** if the text in the axis title changes font size when the axis title size changes. The default value is **true**. Read/write.

axis title text

> Returns or sets the text for the axis title. Read/write.

border

> Returns a **border** object that represents the border of the axis title. Read-only.

caption

> Returns or sets the axis title text. Read/write.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the axis title. Read-only.

font object

> Returns a **font** object that represents the font of the axis title. Read-only.

horizontal alignment

Returns or sets the horizontal alignment for the axis title. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the axis title. Read-only.

left position

Returns or sets the position (in points) of the axis title. Read/write.

name

Returns the name of the axis title. Read-only.

orientation

Returns or sets the axis title's orientation. Can be a number value between -90 and 90 degrees. Read/write.

reading order

This property is not currently supported.

shadow

True if the font is a shadow font or if the axis title has a shadow. Read/write.

top

Returns or sets the distance (in points) from the top edge of the axis title to the top of the chart area. Read/write.

vertical alignment

Returns or sets the vertical alignment of the axis title. Read/write.

Can be one of the following:

- **vertical alignment top**

- **vertical alignment center**

- **vertical alignment bottom**

- **vertical alignment justify**

- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

Class: bar group

Plural

bar groups

Represents one or more series plotted in a bar chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a bar chart group, containing all the series plotted with the bar chart format.

Use **bar group** *index*, where *index* is the chart-group index number, to return a single **bar group** object. The following example adds drop lines to bar group 1 on the active chart.

```
set has drop lines of bar group 1 of active chart to true
```

Properties

<Inheritance>   **chart group**

Inherits the properties and elements of the **chart group** class.

Class: chart

Plural

charts

Elements

shape	**doughnut group**	**pie group**
arc	**dropdown**	**radar group**
area group	**hyperlink**	**rectangle**
bar group	**label**	**scrollbar**
button	**line group**	**series**
chart group	**line**	**spinner**
chart object	**listbox**	**textbox**
checkbox	**option button**	**xy group**
column group	**oval**	

Represents a chart in a workbook. The chart can be either an embedded chart (contained in a **chart object** object) or a separate chart sheet.

Use the *chart* property of the **chart object** class to return a **chart** object that represents the chart contained in a **chart object** object. The following example sets the pattern for the chart area in a chart sheet.

```
set color index of interior object of chart area object of active chart to 43
```

Properties

area threeD group

Returns a **chart group** object that represents the area chart group on a 3-D chart. Read-only.

auto scaling

True if Excel scales a 3-D chart so that it's closer in size to the equivalent 2-D chart. The *right angle axes* property must be set to **true**. Read/write.

bar shape

Returns or sets the shape used with the 3-D bar or column chart. Read/write.

Can be one of the following:

- **box**
- **pyramid to point**
- **pyramid to max**
- **cylinder**
- **cone to point**
- **cone to max**

bar threeD group

Returns a **chart group** object that represents the bar chart group on a 3-D chart. Read-only.

chart area object

Returns a **chart area** object that represents the complete chart area for the chart. Read-only.

chart title

Returns a **chart title** object that represents the title of the specified chart. Read-only.

chart type

Returns or sets the chart type. Read/write.

Can be one of the following:

column clustered	**bubble**
column stacked	**bubble ThreeD effectstock HLC**
column stacked 100	**stock OHLC**
ThreeD column clustered	**stock VHLC**
ThreeD column stacked	**stock VOHLC**
ThreeD column stacked 100	**cylinder column clustered**
bar clustered	**cylinder column stacked**
bar stacked	**cylinder column stacked 100**
bar stacked 100	**cylinder bar clustered**
ThreeD bar clustered	**cylinder bar stacked**
ThreeD bar stacked	**cylinder bar stacked 100**
ThreeD bar stacked 100	**cylinder column**
line stacked	**cone column clustered**
line stacked 100	**cone column stacked**
line markers	**cone column stacked 100**
line markers stacked	**cone bar clustered**
line markers stacked 100	**cone bar stacked**
pie of pie	**cone bar stacked 100**
pie exploded	**cone col**
ThreeD pie exploded	**pyramid column clustered**
bar of pie	**pyramid column stacked**
xy scatter smooth	**pyramid column stacked 100**
xy scatter smooth no markers	**pyramid bar clustered**
xy scatter lines	**pyramid bar stacked**
xy scatter lines no markers	**pyramid bar stacked 100**
area stacked	**pyramid column**
area stacked 100	**ThreeD column**
ThreeD area stacked	**line chart**
ThreeD area stacked 100	**ThreeD line**
doughnut exploded	**ThreeD pie**
radar markers	**pie chart**
radar filled	**xyscatter**
surface	**ThreeD area**
surface wireframe	**area chart**
surface top view	**doughnut**
surface top view wireframe	**radar**

column threeD group

Returns a **chart group** object that represents the column chart group on a 3-D chart. Read-only.

corners object

Returns a **corners** object that represents the corners of a 3-D chart. Read-only.

data table object

Returns a **data table** object that represents the chart data table. Read-only.

depth percent

Returns or sets the depth of a 3-D chart as a percentage of the chart width (between 20 and 2000 percent). Read/write.

display blanks as

Returns or sets the way that blank cells are plotted on a chart. Read/write.

Can be one of the following:

- **interpolated**

- **not plotted**

- **zero**

elevation

Returns or sets the elevation (in degrees) of the 3-D chart view. Read/write.

The chart elevation is the height at which you view the chart, in degrees. The default is 15 for most chart types. The value of this property must be between -90 and 90, except for 3-D bar charts, where it must be between 0 and 44.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

floor object

Returns a **floor** object that represents the floor of the 3-D chart. Read-only.

gap depth

Returns or sets the distance between the data series in a 3-D chart, as a percentage of the marker width. The value of this property must be between 0 and 500. Read/write.

has data table

True if the chart has a data table. Read/write.

has legend

True if the chart has a legend. Read/write.

has title

True if the chart has a visible title. A chart title is represented by a **chart title** object. Read/write.

height percent

Returns or sets the height of a 3-D chart as a percentage of the chart width (between 5 and 500 percent). Read/write.

legend object

Returns a **legend** object that represents the legend for the chart. Read-only.

line threeD group

Returns a **chart group** object that represents the line chart group on a 3-D chart. Read-only.

name

> Returns or sets the name of the chart. Read/write.

page setup object

> Returns a **page setup** object that contains all the page setup settings for the specified object. Read-only.

perspective

> Returns or sets the perspective for the 3-D chart view. Must be between 0 and 100. This property is ignored if the *right angle axes* property is **true**. Read/write.

pie threeD group

> Returns a **chart group** object that represents the pie chart group on a 3-D chart. Read-only.

plot area object

> Returns a **plot area** object that represents the plot area of a chart. Read-only.

plot by

> Returns or sets the way columns or rows are used as data series on the chart. Read/write.
>
> Can be one of the following:
>
> - **by columns**
> - **by rows**

plot visible only

> **True** if only visible cells are plotted. **False** if both visible and hidden cells are plotted. Read/write.

protect contents

> **True** if the entire chart is protected. Read-only.

protect data

> **True** if series formulas cannot be modified by the user. Read/write.

protect drawing objects

> **True** if shapes are protected. Read-only.

protect formatting

> **True** if chart formatting cannot be modified by the user. Read/write.
>
> When this property is **true**, the **Object** command on the **Format** menu is disabled and chart elements cannot be added, moved, resized, or deleted.

protect goal seek

> **True** if the user cannot modify chart data points with mouse actions. Read/write.

protect selection

> **True** if chart elements cannot be selected. Read/write.
>
> When this property is **true**, shapes cannot be added to the chart, and the **click** and **double click** events for chart elements don't occur.

protection mode

> **True** if user-interface-only protection is turned on. To turn on user interface protection, use the **protect chart** command with the **user interface only** argument set to **true**. Read-only.

right angle axes

> **True** if the chart axes are at right angles, independent of chart rotation or elevation. Applies only to 3-D line, column, and bar charts. Read/write.
>
> If this property is **true**, the *perspective* property is ignored.

rotation

> Returns or sets the rotation of the 3-D chart view (the rotation of the plot area around the z-axis, in degrees). The value of this property must be from 0 to 360, except for 3-D bar charts, where the value must be from 0 to 44. The default value is 20. Applies only to 3-D charts. Read/write.

show window

> **True** if the embedded chart is displayed in a separate window. The **chart** object used with this property must refer to an embedded chart. Read/write.

size with window

> **True** if Excel resizes the chart to match the size of the chart sheet window. **False** if the chart size is not attached to the window size. Applies only to chart sheets (does not apply to embedded charts). Read/write.

surface group

> Returns a **chart group** object that represents the surface chart group on a 3-D chart. Read-only.

visible

> Returns or sets whether the chart is visible. Read/write.
>
> Can be one of the following:

- **sheet visible**
- **sheet hidden**
- **sheet very hidden**

> If you set this property to **sheet very hidden,** the chart is hidden so that the only way for you to make it visible again is by setting this property to **sheet visible** (the user cannot make the object visible).

walls and gridlines twoD

> **True** if gridlines are drawn two-dimensionally on a 3-D chart. Read/write.

walls object

> Returns a **walls** object that represents the walls of the 3-D chart. Read-only.
>
> This property does not apply to 3-D pie charts.

Class: chart area

Plural

chart areas

Represents the chart area of a chart. The chart area on a 2-D chart contains the axes, the chart title, the axis titles, and the legend. The chart area on a 3-D chart contains the chart title and the legend; it does not include the plot area (the area within the chart area where the data is plotted). For information about formatting the plot area, see the **plot area** object.

Use the *chart area* property to return the **chart area** object. The following example sets the pattern for the chart area in a chart sheet.

```
set pattern of interior object of chart area object ¬
        of active chart to twenty percent pattern
```

Properties

auto scale font

> **True** if the text in the chart area changes font size when the chart area size changes. The default value is **true**. Read/write.

border

> Returns a **border** object that represents the border of the chart area. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the chart area. Read-only.

font object

> Returns a **font** object that represents the font of the text in the chart area. Read-only.

height

> Returns the height (in points) of the chart area. Read-only.

interior object

> Returns an **interior** object that represents the interior of the chart area. Read-only.

left position

> Returns or sets the position (in points) of the chart area. Read/write.

name

> Returns the name of the chart area. Read-only.

shadow

> **True** if the chart area has a shadow. Read/write.

top

> Returns or sets the distance (in points) from the top edge of the chart area to the top of row 1 (on a worksheet). Read/write.

width

> Returns the width of the chart area. Read-only.

Class: chart fill format

Plural

chart fill formats

Used only with charts. Represents fill formatting for chart elements.

To return a **chart fill format** object, use the *chart fill format object* property of the **chart area** class. The following example sets the foreground color, background color, and gradient for the chart area fill on chart one.

```
set background scheme color of chart fill format object ¬
        of chart area object of active chart to 23
set foreground scheme color of chart fill format object ¬
        of chart area object of active chart to 3
chart one color gradient chart area object of active chart ¬
        gradient style horizontal gradient variant 3 degree 0.34
```

Properties

back color

> Returns the fill background color. Read-only.

background scheme color

> Returns or sets the background color as an index in the current color scheme. Read/write.

> The following illustration shows the color-index values in the default color palette.

chart fill format type

> Returns the fill type. Read-only.

> Can be one of the following:

fill unset	**fill textured**
fill solid	**fill background**
fill patterned	**fill picture**
fill gradient	

fore color

> Returns the fill foreground color. Read-only.

foreground scheme color

> Returns or sets the foreground color as an index in the current color scheme. Read/write.

> For an illustration showing the color-index values in the default color palette, see *background scheme color*.

gradient color type

> Returns the gradient color type for the specified fill. Read-only.

> Can be one of the following:

> - **gradient type unset**
> - **single shade gradient type**
> - **two colors gradient type**
> - **preset colors gradient type**

gradient degree

> Returns the gradient degree of the specified one-color shaded fill as a floating-point value from 0.0 (dark) through 1.0 (light). Read-only.

> To set the gradient degree for the fill, use the **chart one color gradient** command.

gradient style

> Returns the gradient style for the specified fill. Read-only.

> Can be one of the following:

> - **gradient unset**
> - **horizontal gradient**
> - **vertical gradient**
> - **diagonal up gradient**
> - **diagonal down gradient**
> - **from corner gradient**
> - **from center gradient**

> To set the gradient style for the fill, use the **chart one color gradient** or **chart two color gradient** command.

gradient variant

> Returns the shade variant for the specified fill as an integer value from 1 through 4. The values for this property correspond to the gradient variants (numbered from left to right and from top to bottom) on the **Gradient** tab in the **Fill Effects** dialog box. Read-only.

> To set the gradient variant for the fill, use the **chart one color gradient** or **chart two color gradient** command.

pattern

Returns or sets the fill pattern. Read-only.

Can be one of the following:

pattern unset	**wide downward diagonal**
five percent pattern	**wide upward diagonal pattern**
ten percent pattern	**dashed upward diagonal pattern**
twenty percent pattern	**dashed downward diagonal pattern**
twenty five percent pattern	**narrow vertical pattern**
thirty percent pattern	**narrow horizontal pattern**
forty percent pattern	**dashed vertical pattern**
fifty percent pattern	**dashed horizontal pattern**
sixty percent pattern	**large confetti pattern**
seventy percent pattern	**large grid pattern**
seventy five percent pattern	**horizontal brick pattern**
eighty percent pattern	**large checker board pattern**
ninety percent pattern	**small confetti pattern**
dark horizontal pattern	**zig zag pattern**
dark vertical pattern	**solid diamond pattern**
dark downward diagonal pattern	**diagonal brick pattern**
dark upward diagonal pattern	**outlined diamond pattern**
small checker board pattern	**plaid pattern**
trellis pattern	**sphere pattern**
light horizontal pattern	**weave pattern**
light vertical pattern	**dotted grid pattern**
light downward diagonal pattern	**divot pattern**
light upward diagonal pattern	**shingle pattern**
small grid pattern	**wave pattern**
dotted diamond pattern	

preset gradient type

Returns the preset gradient type for the specified fill. Read-only.

Can be one of the following:

preset gradient unset	**gradient wheat**
gradient early sunset	**gradient parchment**
gradient late sunset	**gradient mahogany**
gradient nightfall	**gradient rainbow**
gradient daybreak	**gradient rainbow2**
gradient horizon	**gradient gold**
gradient desert	**gradient gold2**
gradient ocean	**gradient brass**
gradient calm water	**gradient chrome**
gradient fire	**gradient chrome2**
gradient fog	**gradient silver**
gradient moss	**gradient sapphire**
gradient peacock	

To set the preset gradient type for the fill, use the **preset chart gradient** command.

preset texture

Returns the preset texture for the specified fill. Read-only.

Can be one of the following:

preset texture unset	**texture newsprint**
texture papyrus	**texture recycled paper**
texture canvas	**texture parchment**
texture denim	**texture stationery**
texture woven mat	**texture blue tissue paper**
texture water droplets	**texture pink tissue paper**
texture paper bag	**texture purple mesh**
texture fish fossil	**texture bouquet**
texture sand	**texture cork**
texture green marble	**texture walnut**
texture white marble	**texture oak**
texture brown marble	**texture medium wood**
texture granite	

To set the preset texture for the fill, use the **preset chart textured** command.

texture name

Returns the name of the custom texture file for the specified fill. Read-only.

To set the texture file for the fill, use the **chart user picture** or **chart user textured** command.

texture type

Returns the texture type for the specified fill. Read-only.

Can be one of the following:

- **texture type texture type unset**

- **texture type preset texture**

- **texture type user defined texture**

To set the texture type for the fill, use the **chart user textured** command.

transparency

Returns or sets the degree of transparency of the specified fill as a value from 0.0 (opaque) through 1.0 (clear). Read/write.

The value of this property affects the appearance of solid-colored fills and lines only; it has no effect on the appearance of patterned lines or patterned, gradient, picture, or textured fills.

visible

True if the specified object is visible. Read/write.

Class: chart group

Plural

chart groups

Elements

series

Represents one or more series plotted in a chart with the same format. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a bar chart group, containing all the series plotted with the bar chart format.

Use **chart group** *index*, where *index* is the chart-group index number, to return a single **chart group** object. The following example adds drop lines to chart group 1 on the active chart.

```
set has drop lines of chart group 1 of active chart to true
```

Because the index number for a particular chart group can change if the chart format used for that group is changed, it may be easier to use one of the named chart group shortcut classes to return a particular chart group. The **pie group** class returns the list of pie chart groups in a chart, the **line group** class returns the list of line chart groups, and so on. Each of these classes can be used with an index number to return a single **chart group** object, or without an index number to return the list of **chart group** objects in the chart. The following chart group classes are available:

- **area group**
- **bar group**
- **column group**
- **doughnut group**
- **line group**
- **pie group**
- **radar group**
- **series group**
- **xy group**

Properties

axis group

Returns the group for the specified axis, chart group, or series. Read/write.

Can be one of the following:

- **primary axis**
- **secondary axis**

For 3-D charts, only **primary axis** is valid.

bubble scale

Returns or sets the scale factor for bubbles in the specified chart group. Can be an integer value from 0 (zero) to 300, corresponding to a percentage of the default size. Applies only to bubble charts. Read/write.

color scheme

Returns or sets the preset color scheme to apply to a chart. The color scheme is represented by a number between 1 and 18 corresponding to which of the color schemes to apply. Read/write.

color variance

Varies the color within a data series. Read/write. Can be one of the following:

Constant	Meaning
vary by grayscale	Uses black for all of the data series, with each data series shown at a different level of opacity.
vary by same color	Uses a single color for a chart that has only one data series.
vary by color	Uses a different color for each data series.
vary by shade	Uses a single color for all of the data series, with each data series shown at a different level of opacity.

doughnut hole size

Returns or sets the size of the hole in a doughnut chart group. The hole size is expressed as a percentage of the chart size, between 10 and 90 percent. Read/write.

down bars object

Returns a **down bars** object that represents the down bars on a line chart. Applies only to line charts. Read-only.

drop lines object

Returns a **drop lines** object that represents the drop lines for a series on a line chart or area chart. Applies only to line charts or area charts. Read-only.

entry index

Returns the index number of the object within the elements of the parent object. Read-only.

first slice angle

Returns or sets the angle of the first pie-chart or doughnut-chart slice, in degrees (clockwise from vertical). Applies only to pie, 3-D pie, and doughnut charts. Read/write.

gap width

For bar and column charts, returns or sets the space between bar or column clusters, as a percentage of the bar or column width. The value of this property must be between 0 and 500. Read/write.

For pie-of-pie and bar-of- pie charts, returns or sets the space between the primary and secondary sections of the chart. The value of this property must be between 5 and 200. Read/write.

has drop lines

> **True** if the line chart or area chart has drop lines. Applies only to line and area charts. Read/write.

has hi lo lines

> **True** if the line chart has high-low lines. Applies only to line charts. Read/write.

has radar axis labels

> **True** if a radar chart has axis labels. Applies only to radar charts. Read/write.

has series lines

> **True** if a stacked column chart or bar chart has series lines or if a pie- of-pie chart or bar- of-pie chart has connector lines between the two sections. Applies only to stacked column charts, bar charts, pie-of-pie charts, or bar-of-pie charts. Read/write.

has threeD shading

> **True** if the chart group has three-dimensional shading. Read/write.

has up down bars

> **True** if a line chart has up and down bars. Applies only to line charts. Read/write.

hilo lines Object

> Returns a **hilo lines** object that represents the high-low lines for a series on a line chart. Applies only to line charts. Read-only.

overlap

> Specifies how bars and columns are positioned. Can be a value between -100 and 100. Applies only to 2-D bar charts and 2-D column charts. Read/write.

> If this property is set to -100, bars are positioned so that there is one bar width between them. If the overlap is 0 (zero), there is no space between bars (one bar starts immediately after the preceding bar). If the overlap is 100, bars are positioned on top of each other.

radar axis labels

> Returns a **tick labels** object that represents the radar axis labels for the specified chart group. Read-only.

second plot size

> Returns or sets the size of the secondary section of either a pie-of-pie chart or a bar-of-pie chart, as a percentage of the size of the primary pie. Can be a value from 5 to 200. Read/write.

series lines object

> Returns a **series lines** object that represents the series lines for a stacked bar chart or a stacked column chart. Applies only to stacked bar charts and stacked column charts. Read-only.

show negative bubbles

> **True** if negative bubbles are shown for the chart group. Valid only for bubble charts. Read/write.

size represents

> Returns or sets what the bubble size represents on a bubble chart. Read/write.

> Can be one of the following:

> **size is area**

> **size is width**

split type

> Returns or sets the way the two sections of either a pie-of-pie chart or a bar-of-pie chart are split. Read/write.

> Can be one of the following:

> - **split by position**
> - **split by percent value**
> - **split by custom split**
> - **split by value**

split value

> Returns or sets the threshold value separating the two sections of either a pie-of-pie chart or a bar-of-pie chart. Read/write.

up bars object

> Returns an **up bars** object that represents the up bars on a line chart. Applies only to line charts. Read-only.

vary by categories

> **True** if Excel assigns a different color or pattern to each data marker. The chart must contain only one series. Read/write.

Class: chart object

Plural

chart objects

Represents an embedded chart on a worksheet. The **chart object** object acts as a container for a **chart** object. Properties and commands for the **chart object** object control the appearance and size of the embedded chart on the worksheet.

Use **chart object** *index*, where index is the embedded chart index number or name, to return a single **chart object** object. The following example sets the pattern for the **chart object** object in chart object 1 on the active chart.

```
set ci to interior object of chart area object of chart of chart object 1
```

```
set pattern of ci to pattern checker
```

The embedded chart name is shown in the **Name** box when the embedded chart is selected. Use the *name* property to set or return the name of the **chart object** object. The following example puts rounded corners on chart object 1 on the active chart.

```
set rounded corners of chart object 1 of active sheet to true
```

Properties

border

Returns a **border** object that represents the border of the chart object. Read-only.

bottom right cell

Returns a **range** object that represents the cell that lies under the lower-right corner of the chart object. Read-only.

chart

Returns a **chart** object that represents the chart contained in the object. Read-only.

enabled

True if the object is enabled. Read/write.

entry index

Returns the index number of the chart object within the elements of the parent object. Read-only.

height

Returns or sets the height (in points) of the chart object. Read/write.

interior object

Returns an **interior** object that represents the interior of the chart object. Read-only.

left position

Returns or sets the distance (in points) from the left edge of the chart object to the left edge of column A. Read/write.

locked

True if the chart object is locked; **false** if the chart object can be modified when the sheet is protected. Read/write.

name

Returns or sets the name of the chart object. Read/write.

on action

Returns or sets the name of a Visual Basic macro or a string of AppleScript commands that is run when the chart object is clicked. Read/write.

Visual Basic macros are saved with the document, while AppleScript commands are not saved with the document.

placement

Returns or sets the way the chart object is attached to the cells below it. Read/write.

Can be one of the following:

- **placement free floating**
- **placement move**
- **placement move and size**

print object

> **True** if the chart object will be printed when the document is printed. Read/write.

protect chart object

> **True** if the embedded chart frame cannot be moved, resized, or deleted. Read/write.

rounded corners

> **True** if the embedded chart has rounded corners. Read/write.

shadow

> **True** if the chart object has a shadow. Read/write.

top

> Returns or sets the distance (in points) from the top edge of the chart object to the top of column A. Read/write.

top left cell

> Returns a **range** object that represents the cell that lies under the upper-left corner of the specified object. Read-only.

visible

> **True** if the chart object is visible. Read/write.

width

> Returns the width of the chart object. Read-only.

z order position

> Returns the position of the chart object in the z-order, which corresponds to the object's index number. Read-only.

> Whenever you make a new shape or object, it's added to the front of the z-order by default.

Class: chart title

Plural
chart titles

Elements
character

Represents the chart title.

Use the *chart title* property to return the **chart title** object. The following example adds a title to the active chart.

```
set has title of active chart to true
```

If the *has title* property for the chart is **false**, trying to use the **chart title** object will generate an access violation.

Properties

auto scale font

> **True** if the text in the chart title changes font size when the chart title size changes. The default value is **true**. Read/write.

border

> Returns a **border** object that represents the border of the chart title. Read-only.

caption

> Returns or sets the chart title text. Read/write.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the chart title. Read-only.

chart title text

> Returns or sets the text for the chart title. Read/write.

font object

> Returns a **font** object that represents the font of the chart title. Read-only.

horizontal alignment

> Returns or sets the horizontal alignment for the chart title. Read/write.
>
> Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

> The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

> Returns an **interior** object that represents the interior of the chart title. Read-only.

left position

> Returns or sets the position (in points) of the chart title. Read/write.

name

Returns the name of the chart title. Read-only.

orientation

Returns or sets the chart title's orientation. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

reading order

This property is not current supported.

shadow

True if the font is a shadow font or if the chart title has a shadow. Read/write.

top

Returns or sets the distance (in points) from the top edge of the chart title to the top of the chart area. Read/write.

vertical alignment

Returns or sets the vertical alignment of the chart title. Read/write.

Can be one of the following:

- **vertical alignment top**
- **vertical alignment center**
- **vertical alignment bottom**
- **vertical alignment justify**
- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

Class: column group

Plural

column groups

Represents one or more series plotted in a column chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a bar chart group, containing all the series plotted with the bar chart format.

Use **column group** *index*, where *index* is the chart-group index number, to return a single **column group** object. The following example adds drop lines to column group 1 on the active chart.

```
set has drop lines of column group 1 of active chart to true
```

Properties

<Inheritance> **chart group**

> Inherits the properties and elements of the **chart group** class.

Class: corners

Represents the corners of a 3-D chart.

Use the *corners object* property to return the **corners** object. The following example gets the name of the corners of the active chart.

```
get name of corners object of active chart
```

If the chart isn't a 3-D chart, the *corners object* property fails.

Properties

name

> Returns the name of the corners object. Read-only.

Class: data label

Plural

data labels

Elements

character

Represents the data label on a chart series point or trendline.

Use **data label** *index*, where *index* is the data-label index number, to return a single **data label** object. The following example sets the data label text of series 1 in the active chart to "Data Label."

```
set data label text of data labels of series 1 of active chart to "Data Label"
```

To return the **data label** object for a single point, use the *data label object* property of the **series point** class. The following example turns on the data label for point 1 in series 1 on the active chart.

```
apply data labels series point 1 of series 1 of active chart
```

On a trendline, the *data label object* property returns the text shown with the trendline. This can be the equation, the R-squared value, or both (if both are showing). The following example sets the trendline text to show only the equation.

```
set display R squared of trendline 1 of series 1 of active chart to false
set display equation of trendline 1 of series 1 of active chart to true
```

Properties

auto scale font

> **True** if the text in the data label changes font size when the data label size changes. The default value is **true**. Read/write.

auto text

> **True** if the data label automatically generates appropriate text based on context. Read/write.

border

> Returns a **border** object that represents the border of the data label. Read-only.

caption

> Returns or sets the data label text. Read/write.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the data label. Read-only.

data label text

> Returns or sets the text for the data label. Read/write.

data label type

> Returns or sets the data label type. Read/write.
>
> Can be one of the following:

- **data labels show none**
- **data labels show value**
- **data labels show percent**
- **data labels show label**
- **data labels show label and percent**
- **data labels show bubble sizes**

font object

> Returns a **font** object that represents the font of the data label. Read-only.

horizontal alignment

Returns or sets the horizontal alignment for the data label. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the data label. Read-only.

left position

Returns or sets the position (in points) of the data label. Read/write.

name

Returns the name of the data label. Read-only.

number format

Returns or sets the format code for the data label. Read/write.

You'll find a list of format codes under the **Custom** category on the **Number** tab in the **Format Cells** dialog box.

number format linked

True if the number format is linked to the cells (so that the number format changes in the labels when it changes in the cells). Read/write.

orientation

Returns or sets the orientation of the data label. Read/write.

Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

Can also be a number value between -90 and 90 degrees.

position

Returns or sets the position of the data label. Read/write.

Can be one of the following:

label position center	**label position inside end**
label position above	**label position inside base**
label position below	**label position best fit**
label position left	**label position mixed**
label position right	**label position custom**
label position outside end	

reading order

This property is not currently supported.

shadow

True if the font is a shadow font or if the data label has a shadow. Read/write.

show legend key

True if the data label legend key is visible. Read/write.

top

Returns or sets the distance (in points) from the top edge of the data label to the top of the chart area. Read/write.

vertical alignment

Returns or sets the vertical alignment of the data label. Read/write.

Can be one of the following:

- **vertical alignment top**

- **vertical alignment center**

- **vertical alignment bottom**

- **vertical alignment justify**

- **vertical alignment distributed**

The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

Class: data table

Plural

data tables

Represents a chart data table.

Use the *data table object* property to return a **data table** object. The following example adds a data table with an outline border to the active chart.

```
set has data table of active chart to true

set has border outline of data table object of active chart to true
```

Properties

auto scale font

> **True** if the text in the data table changes font size when the data table size changes. The default value is **true**. Read/write.

border

> Returns a **border** object that represents the border of the data table. Read-only.

font object

> Returns a **font** object that represents the font of the data table. Read-only.

has border horizontal

> **True** if the chart data table has horizontal cell borders. Read/write.

has border outline

> **True** if the chart data table has outline borders. Read/write.

has border vertical

> **True** if the chart data table has vertical cell borders. Read/write.

show legend key

> **True** if the data table legend key is visible. Read/write.

Class: display unit label

Plural
display unit labels

Elements
character

Represents a unit label on an axis in the specified chart. Unit labels are useful for charting large values — for example, in the millions or billions. You can make the chart more readable by using a single unit label instead of large numbers at each tick mark.

To return the **display unit label** object, use the *display unit label* property of the **axis** class. The following example sets the display label caption to "millions" on the value axis in the active chart.

```
set Axis1 to (get axis active chart axis type value axis)

set display unit of Axis1 to millions

set has display unit label of Axis1 to true

set caption of display unit label of Axis1 to "In millions"
```

Properties

auto scale font

> **True** if the text in the display unit label changes font size when the display unit label size changes. The default value is **true**. Read/write.

border

> Returns a **border** object that represents the border of the display unit label. Read-only.

caption

Returns or sets the display unit label text. Read/write.

chart fill format object

Returns a **chart fill format** object that contains fill formatting properties for the display unit label. Read-only.

display label unit text

Returns or sets the text for the display unit label. Read/write.

font object

Returns a **font** object that represents the font of the display unit label. Read-only.

horizontal alignment

Returns or sets the horizontal alignment for the display unit label. Read/write.

Can be one of the following:

- **horizontal align center**
- **horizontal align center across selection**
- **horizontal align distributed**
- **horizontal align fill**
- **horizontal align general**
- **horizontal align justify**
- **horizontal align left**
- **horizontal align right**

The **horizontal align distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

interior object

Returns an **interior** object that represents the interior of the display unit label. Read-only.

left position

Returns or sets the position (in points) of the display unit label. Read/write.

name

Returns the name of the display unit label. Read-only.

orientation

> Returns or sets the orientation of the display unit label. Read/write.
>
> Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

> Can also be a number value between -90 and 90 degrees.

reading order

> This property is not currently supported.

shadow

> **True** if the font is a shadow font or if the display unit label has a shadow. Read/write.

top

> Returns or sets the distance (in points) from the top edge of the display unit label to the top of the chart area. Read/write.

vertical alignment

> Returns or sets the vertical alignment of the display unit label. Read/write.
>
> Can be one of the following:

- **vertical alignment top**
- **vertical alignment center**
- **vertical alignment bottom**
- **vertical alignment justify**
- **vertical alignment distributed**

> The **vertical alignment distributed** alignment style works only in the Japanese version of Excel or in an English version of Excel that you have registered as Japanese by using the Microsoft Language Register application.

Class: doughnut group

Plural

doughnut groups

Represents one or more series plotted in a doughnut chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a doughnut chart group, containing all the series plotted with the doughnut chart format.

Use **doughnut group** *index*, where *index* is the chart-group index number, to return a single **doughnut group** object. The following example adds drop lines to doughnut group 1 on the active chart.

```
set has drop lines of doughnut group 1 of active chart to true
```

Properties

<*Inheritance*> **chart group**

> Inherits the properties and elements of the **chart group** class.

Class: down bars

Represents the down bars in a chart group. Down bars connect points on the first series in the chart group with lower values on the last series (the lines go down from the first series). Only 2-D line groups that contain at least two series can have down bars.

There is no object that represents a single down bar; up bars and down bars are either turned on or off for all points in a chart group.

Use the *down bars object* property to return the **down bars** object. The following example turns on up and down bars for chart group 1 on the active chart.

```
set has up down bars of chart group 1 of active chart to true
```

If the *has up down bars* property is **false**, most properties of the **down bars** object are disabled.

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the object. Read-only.

interior object

> Returns an **interior** object that represents the interior of the object. Read-only.

name

> Returns the name of the object. Read-only.

Class: drop lines

Represents the drop lines in a chart group. Drop lines connect the points in the chart with the x-axis. Only line and area chart groups can have drop lines.

There is no object that represents a single drop line; drop lines are either turned on or off for all points in a chart group.

Use the *drop lines object* property to return the **drop lines** object. The following example turns on drop lines for an active chart.

```
set has drop lines of chart group 1 of active chart to true
```

If the *has drop lines* property is **false**, most properties of the **drop lines** object are disabled.

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

name

> Returns the name of the object. Read-only.

Class: error bars

Represents the error bars on a chart series. Error bars indicate the degree of uncertainty for chart data. Only series in area, bar, column, line, and scatter groups on a 2-D chart can have error bars. Only series in scatter groups can have x and y error bars.

There is no object that represents a single error bar; x error bars or y error bars are either turned on or off for all points in a series.

Use the *error bars* property to return the **error bars** object. The following example turns on error bars for series 1 in the active chart and then sets the end style for the error bars.

```
set has error bars of series 1 of active chart to true

set end style of error bars of series 1 of active chart to cap
```

The **error bar** command changes the error bar format and type.

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

end style

> Returns or sets the end style for the error bars. Read/write.
>
> Can be one of the following:

  - **cap**

  - **no cap**

name

> Returns the name of the object. Read-only.

Class: floor

Plural

floors

Represents the floor of a 3-D chart

Use the *floor object* property to return the **floor** object. The following example sets the floor color for the active chart to red. The example will fail if the chart isn't a 3-D chart.

```
set color index of interior object of floor object of active chart to 3
```

Properties

border

Returns a **border** object that represents the border of the floor. Read-only.

chart fill format object

Returns a **chart fill format** object that contains fill formatting properties for the floor. Read-only.

interior object

Returns an **interior** object that represents the interior of the floor. Read-only.

name

Returns the name of the floor. Read-only.

picture type

Returns or sets the way pictures are displayed on the floor of a 3-D chart. Read/write.

Can be one of the following:

Value	Meaning
chart picture type stretch	Stretch the picture to reach the necessary value.
chart picture type stack	Stack the pictures to reach the necessary value.
chart picture type stack scale	Stack the pictures, but use the *picture unit* property to determine what unit each picture represents.

Class: gridlines

Represents major or minor gridlines on a chart axis. Gridlines extend the tick marks on a chart axis to make it easier to see the values associated with the data markers.

There's no object that represents a single gridline; all gridlines for an axis are either turned on or off.

Use the *major gridlines* property to return the **gridlines** object that represents the major gridlines for the axis. Use the *minor gridlines* property to return the **gridlines** object that represents the minor gridlines. It's possible to return both major and minor gridlines at the same time.

The following example turns on major gridlines for the category axis on the active chart sheet.

```
set has major gridlines of (get axis active chart axis type value axis) to true
```

Properties

border

Returns a **border** object that represents the border of the object. Read-only.

name

Returns the name of the object. Read-only.

Class: `hilo lines`

Represents the high-low lines in a chart group. High-low lines connect the highest point with the lowest point in every category in the chart group. Only 2-D line groups can have high-low lines.

There is no object that represents a single high-low line; high-low lines are either turned on or off for all points in a chart group.

Use the *hilo lines object* property to return the **hilo lines** object. The following example creates high-low lines on the active chart and then makes the high-low lines blue.

```
set has hi lo lines of chart group 1 of active chart to true
```

```
set color index of interior object of hilo lines of active chart to 32
```

If the *has hi lo lines* property is **false**, most properties of the **hilo lines** object are disabled.

Properties

border

Returns a **border** object that represents the border of the object. Read-only.

name

Returns the name of the object. Read-only.

Class: `interior`

Plural

interiors

Represents the interior of an object.

Use the *interior object* property to return the **interior** object. The following example sets the interior color of the floor of a chart to red.

```
set color index of interior object of floor object of active chart to 3
```

Properties

color

Returns or sets the cell shading color or the drawing object fill color as an RGB value. Read/write.

color index

> Returns or sets the color of the interior fill. The color is specified as an index value into the current color palette. You can also use **color index none** to specify that you don't want an interior fill, or use **color index automatic** to specify the automatic fill (for drawing objects).

> This property specifies a color as an index into the workbook color palette. The following illustration shows the color-index values in the default color palette.

invert if negative

> **True** if Excel inverts the pattern in the item when it corresponds to a negative number. Read/write.

pattern

> Returns or sets the interior pattern. Read/write.

> Can be one of the following:

pattern automatic	**pattern horizontal**
pattern checker	**pattern light down**
pattern criss cross	**pattern light horizontal**
pattern down	**pattern light up**
pattern gray 16	**pattern light vertical**
pattern gray 25	**pattern none**
pattern gray 50	**pattern semi gray 75**
pattern gray 75	**pattern solid**
pattern gray 8	**pattern up**
pattern grid	**pattern vertical**

pattern color

> Returns or sets the color of the interior pattern as an RGB value. Read/write.

pattern color index

> Returns or sets the color of the interior pattern as an index into the current color palette. You can also use **color index automatic** to specify the automatic pattern for cells or the automatic fill style for drawing objects, or use **color index none** to specify that you don't want a pattern (this is the same as setting the *pattern* property to **pattern none**). Read/write.

> For the color-index values in the default color palette, see the *color index* property.

Class: `leader lines`

Represents leader lines on a chart. Leader lines connect data labels to data points.

Use the *leader lines* property to return the **leader lines** object. The following example adds data labels and leader lines to the chart.

```
apply data labels active chart with has leader lines
```

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

Class: `legend`

Plural

legends

Elements

legend entry

Represents the legend in a chart. Each chart can have only one legend. The **legend** object contains one or more **legend entry** objects; each **legend entry** object contains a **legend key** object.

Use the *legend object* property to return the **legend** object. The following example sets the font style for the legend in the active chart to bold.

```
set bold of font object of legend object of active chart to true
```

The chart legend is not visible unless the *has legend* property is **true**. If this property is **false**, properties of the **legend** object will fail.

Properties

auto scale font

> **True** if the text in the legend changes font size when the legend size changes. The default value is **true**. Read/write.

border

> Returns a **border** object that represents the border of the legend. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the legend. Read-only.

font object

> Returns a **font** object that represents the font of the legend. Read-only.

height

> Returns or sets the height (in points) of the legend. Read/write.

interior object

> Returns an **interior** object that represents the interior of the legend. Read-only.

left position

> Returns or sets the position (in points) of the legend. Read/write.

name

> Returns the name of the legend. Read-only.

position

> Returns or sets the position of the legend. Read/write.

> Can be one of the following:

> - **legend position bottom**
> - **legend position corner**
> - **legend position left**
> - **legend position right**
> - **legend position top**

shadow

> **True** if the font is a shadow font or if the legend has a shadow. Read/write.

top

> Returns or sets the distance (in points) from the top edge of the legend to the top of the chart area. Read/write.

width

> Returns or sets the width of the legend. Read/write.

Class: legend entry

Plural

legend entries

Represents a legend entry in a chart legend.

Each legend entry has two parts: the text of the entry, which is the name of the series associated with the legend entry; and an entry marker, which visually links the legend entry with its associated series or trendline in the chart. Formatting properties for the entry marker and its associated series or trendline are contained in the **legend key** object.

The text of a legend entry cannot be changed. All **legend entry** objects support font formatting, and they can be deleted. No pattern formatting is supported for legend entries. The position and size of entries is fixed.

Use **legend entry** *index*, where *index* is the legend entry index number, to return a single **legend entry** object. You cannot return legend entries by name.

The index number represents the position of the legend entry in the legend. `legend entry 1` is at the top of the legend, and `legend entry (get count of legend entries)` is at the bottom. The following example changes the font for the text of the legend entry at the top of the legend (this is usually the legend for series one) in a chart.

```
set italic of font object of legend entry 1 of legend object of active chart to
true
```

There is no direct way to return the series or trendline corresponding to the legend entry.

After legend entries have been deleted, the only way to restore them is to remove and recreate the legend that contained them by setting the *has legend* property for the chart to **false** and then back to **true**.

Properties

auto scale font

> **True** if the text in the legend entry changes font size when the legend entry size changes. The default value is **true**. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

font object

> Returns a **font** object that represents the font of the legend entry. Read-only.

height

> Returns the height of the object. Read-only.

left position

> Returns or sets the position (in points) of the legend entry. Read/write.

legend key

> Returns a **legend key** object that represents the legend key associated with the entry. Read-only.

top

> Returns or sets the distance (in points) from the top edge of the legend entry to the top of the chart area. Read/write.

width

> Returns the width of the object. Read-only.

Class: legend key

Plural

legend keys

Represents a legend key in a chart legend. Each legend key is a graphic that visually links a legend entry with its associated series or trendline in the chart. The legend key is linked to its associated series or trendline in such a way that changing the formatting of one simultaneously changes the formatting of the other.

Use the *legend key* property to return the **legend key** object. The following example changes the marker background color for the legend entry at the top of the legend for the active chart. This simultaneously changes the format of every point in the series associated with this legend entry. The associated series must support data markers.

```
set color index of interior object of legend key of legend entry 1 ¬
        of legend object of active chart to 5
```

Properties

border

> Returns a **border** object that represents the border of the legend key. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the legend key. Read-only.

height

> Returns the height of the legend key. Read-only.

interior object

> Returns an **interior** object that represents the interior of the legend key. Read-only.

invert if negative

> **True** if Excel inverts the pattern in the item when it corresponds to a negative number. Read/write.

left position

> Returns or sets the position (in points) of the legend key. Read/write.

marker background color

> Returns or sets the marker background color as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker background color index

> Returns or sets the marker background color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

> The following illustration shows the color-index values in the default color palette.

marker foreground color

Returns or sets the foreground color of the marker as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker foreground color index

Returns or sets the marker foreground color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

See *marker background color index* for the color-index values in the default color palette.

marker size

Returns or sets the data-marker size, in points. Read/write.

marker style

Returns or sets the marker style for a point or series in a line chart, scatter chart, or radar chart. Read/write.

Can be one of the following:

Constant	Description
marker style none	No markers
marker style automatic	Automatic markers
marker style square	Square markers
marker style diamond	Diamond-shaped markers
marker style triangle	Triangular markers
marker style x	Square markers with an X
marker style star	Square markers with an asterisk
marker style dot	Short bar markers
marker style dash	Long bar markers
marker style circle	Circular markers
marker style plus	Square markers with a plus sign
marker style picture	Picture markers

picture type

> Returns or sets the way pictures are displayed on a column or bar picture chart or on the walls and faces of a 3-D chart. Read/write.

> Can be one of the following:

Value	Meaning
chart picture type stretch	Stretch the picture to reach the necessary value.
chart picture type stack	Stack the pictures to reach the necessary value.
chart picture type stack scale	Stack the pictures, but use the *picture unit* property to determine what unit each picture represents.

picture unit

> Returns or sets the unit for each picture on the chart if the *picture type* property is set to **chart picture type stack scale**. If not, this property is ignored. Read/write.

shadow

> **True** if the object has a shadow. Read/write.

smooth

> **True** if curve smoothing is turned on for the line chart or scatter chart. Applies only to line and scatter charts. Read/write.

top

> Returns or sets the distance (in points) from the top edge of the legend key to the top of the chart area. Read/write.

width

> Returns the width of the legend key. Read-only.

Class: line group

Plural

line groups

Represents one or more series plotted in a line chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a doughnut chart group, containing all the series plotted with the doughnut chart format.

Use **line group** *index*, where *index* is the chart-group index number, to return a single **line group** object. The following example adds drop lines to line group 1 on the active chart.

```
set has drop lines of line group 1 of active chart to true
```

Properties

<Inheritance> **chart group**

> Inherits the properties and elements of the **chart group** class.

Class: pie group

Plural

pie groups

Represents one or more series plotted in a pie chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a pie chart group, containing all the series plotted with the pie chart format.

Use **pie group** *index*, where *index* is the chart-group index number, to return a single **pie group** object. The following example adds drop lines to pie group 1 on chart 1.

```
set has drop lines of pie group 1 of chart 1 to true
```

Properties

<*Inheritance*> **chart group**

> Inherits the properties and elements of the **chart group** class.

Class: plot area

Plural

plot areas

Represents the plot area of a chart. This is the area where your chart data is plotted. The plot area on a 2-D chart contains the data markers, gridlines, data labels, trendlines, and optional chart items placed in the chart area. The plot area on a 3-D chart contains all of the above items plus the walls, floor, axes, axis titles, and tick-mark labels in the chart.

The plot area is surrounded by the chart area. The chart area on a 2-D chart contains the axes, the chart title, the axis titles, and the legend. The chart area on a 3-D chart contains the chart title and the legend. For information about formatting the chart area, see the **chart area** class.

Use the *plot area object* property to return a **plot area** object. The following example sets the color of the plot area to red.

```
set color index of interior object of plot area object of active chart to 3
```

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the specified chart or shape. Read-only.

height

Returns the height (in points) of the object. Read-only.

inside height

Returns the inside height (in points) of the plot area. Read-only.

The plot area used for this measurement does not include the axis labels. The *height* property for the plot area uses the bounding rectangle that includes the axis labels.

inside left

Returns the distance (in points) from the chart edge to the inside left edge of the plot area. Read-only.

The plot area used for this measurement does not include the axis labels. The *left position* property for the plot area uses the bounding rectangle that includes the axis labels.

inside top

Returns the distance (in points) from the chart edge to the inside top edge of the plot area. Read-only.

The plot area used for this measurement does not include the axis labels. The *top* property for the plot area uses the bounding rectangle that includes the axis labels.

inside width

Returns the inside width (in points) of the plot area. Read-only.

The plot area used for this measurement does not include the axis labels. The *width* property for the plot area uses the bounding rectangle that includes the axis labels.

interior object

Returns an **interior** object that represents the interior of the specified object. Read-only.

left position

Returns or sets the position (in points) of the specified object. Read/write.

name

Returns the name of the object. Read-only.

top

Returns or sets the distance (in points) from the top edge of the plot area to the top of the worksheet. Read/write.

width

Returns the width of the object. Read-only.

Class: radar group

Plural

radar groups

Represents one or more series plotted in a radar chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and a radar chart group, containing all the series plotted with the radar chart format.

Use **radar group** *index*, where *index* is the chart-group index number, to return a single **radar group** object. The following example adds drop lines to radar group 1 of the active chart.

```
set has drop lines of radar group 1 of active chart to true
```

Properties

<Inheritance> **chart group**

    Inherits the properties and elements of the **chart group** class.

Class: series

Plural

series collection

Elements

data label

series point

trendline

Represents a series in a chart.

Use **series** *index*, where *index* is the series index number or name, to return a single **series** object. The following example sets the color of the interior for the first series in a chart.

```
set color index of interior object of series 1 of active chart to 43
```

The series index number indicates the order in which the series were added to the chart. `series 1` is the first series added to the chart, and `series (get count of series collection)` is the last one added.

Properties

apply picture to end

True if a picture is applied to the end of the point or all points in the series. Read/write.

apply picture to front

True if a picture is applied to the front of the point or all points in the series. Read/write.

apply picture to sides

True if a picture is applied to the sides of the point or all points in the series. Read/write.

axis group

Returns the group for the specified series. Read/write.

Can be one of the following:

- **primary axis**

- **secondary axis**

For 3-D charts, only **primary axis** is valid.

bar shape

Returns or sets the shape used with the 3-D bar or column chart. Read/write.

Can be one of the following:

- **box**

- **pyramid to point**

- **pyramid to max**

- **cylinder**

- **cone to point**

- **cone to max**

border

Returns a **border** object that represents the border of the object. Read-only.

bubble sizes

Returns or sets a string in A1-style notation that refers to the worksheet cells containing the size data for the bubble chart. Applies only to bubble charts. Read/write.

chart fill format object

Returns a **chart fill format** object that contains fill formatting properties for the specified chart or shape. Read-only.

chart type

Returns or sets the chart type. Read/write.

Can be one of the following:

column clustered	**bubble**
column stacked	**bubble ThreeD effectstock HLC**
column stacked 100	**stock OHLC**
ThreeD column clustered	**stock VHLC**
ThreeD column stacked	**stock VOHLC**
ThreeD column stacked 100	**cylinder column clustered**
bar clustered	**cylinder column stacked**
bar stacked	**cylinder column stacked 100**
bar stacked 100	**cylinder bar clustered**
ThreeD bar clustered	**cylinder bar stacked**
ThreeD bar stacked	**cylinder bar stacked 100**
ThreeD bar stacked 100	**cylinder column**
line stacked	**cone column clustered**
line stacked 100	**cone column stacked**
line markers	**cone column stacked 100**
line markers stacked	**cone bar clustered**
line markers stacked 100	**cone bar stacked**
pie of pie	**cone bar stacked 100**
pie exploded	**cone col**
ThreeD pie exploded	**pyramid column clustered**
bar of pie	**pyramid column stacked**
xy scatter smooth	**pyramid column stacked 100**
xy scatter smooth no markers	**pyramid bar clustered**
xy scatter lines	**pyramid bar stacked**
xy scatter lines no markers	**pyramid bar stacked 100**
area stacked	**pyramid column**
area stacked 100	**ThreeD column**
ThreeD area stacked	**line chart**
ThreeD area stacked 100	**ThreeD line**
doughnut exploded	**ThreeD pie**
radar markers	**pie chart**
radar filled	**xyscatter**
surface	**ThreeD area**
surface wireframe	**area chart**
surface top view	**doughnut**
surface top view wireframe	**radar**

error bars

Returns an **error bars** object that represents the error bars for the series. Read-only.

explosion

Returns or sets the explosion value for a pie-chart or doughnut-chart slice. Returns 0 (zero) if there is no explosion (the tip of the slice is in the center of the pie). Read/write.

formula

Returns or sets the object's formula in A1-style notation. Read/write.

formula local

Returns or sets the formula for the object, using A1-style references in the language of the user. Read/write.

formula r1c1

Returns or sets the formula for the object using R1C1-style notation. Read/write.

formula r1c1 local

Returns or sets the formula for the object, using R1C1-style notation in the language of the user. Read/write.

has data labels

True if the series has data labels. Read/write.

has error bars

True if the series has error bars. This property is not available for 3-D charts. Read/write.

has leader lines

True if the series has leader lines. Read/write.

has threeD effect

True if the series has a three-dimensional appearance. Applies only to bubble charts. Read/write.

interior object

Returns an **interior** object that represents the interior of the series. Read-only.

invert if negative

True if Excel inverts the pattern in the item when it corresponds to a negative number. Read/write.

leader lines

Returns a **leader lines** object that represents the leader lines for the series. Read-only.

marker background color

Returns or sets the marker background color as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker background color index

> Returns or sets the marker background color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

> The following illustration shows the color-index values in the default color palette.

marker foreground color

> Returns or sets the foreground color of the marker as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker foreground color index

> Returns or sets the marker foreground color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

> For the color-index values in the default color palette, see the *marker background color index* property.

marker size

> Returns or sets the data-marker size, in points. Read/write.

marker style

> Returns or sets the marker style for a point or series in a line chart, scatter chart, or radar chart. Read/write.

> Can be one of the following:

marker style none	**marker style star**
marker style automatic	**marker style dot**
marker style square	**marker style dash**
marker style diamond	**marker style circle**
marker style triangle	**marker style plus**
marker style x	**marker style picture**

picture type

Returns or sets the way pictures are displayed on a column or bar picture chart or on the walls and faces of a 3-D chart. Read/write.

Can be one of the following:

Value	Meaning
chart picture type stretch	Stretch the picture to reach the necessary value.
chart picture type stack	Stack the pictures to reach the necessary value.
chart picture type stack scale	Stack the pictures, but use the *picture unit* property to determine what unit each picture represents.

picture unit

Returns or sets the unit for each picture on the chart if the *picture type* property is set to **chart picture type stack scale**. If not, this property is ignored. Read/write.

plot order

Returns or sets the plot order for the selected series within the chart group. Read/write.

You can set plot order only within a chart group (you cannot set the plot order for the entire chart if you have more than one chart type). Changing the plot order of one series causes the plot orders of the other series in the chart group to be adjusted, as necessary.

series values

Returns or sets a collection of all the values in the series. Read/write.

This can be a range on a worksheet or a list of constant values, but not a combination of both. It can also be any of the following:

- **range object**
- **A1-style range reference**
- **named range**
- **list of category names**

shadow

True if the object has a shadow. Read/write.

smooth

True if curve smoothing is turned on for the line chart or scatter chart. Applies only to line and scatter charts. Read/write.

xvalues

> Returns or sets a list of x values for a chart series. Read/write.
>
> The *xvalues* property can be set to a range on a worksheet or to a list of values, but it cannot be a combination of both. It can also be any of the following:

- **range object**
- **A1-style range reference**
- **named range**
- **list of category names**

Class: series lines

Represents series lines in a chart group. Series lines connect the data values from each series. Only 2-D stacked bar or column chart groups can have series lines. There is no object that represents a single series line; series lines are either turned on or off for all points in a chart group.

Use the *series lines object* property to return a **series lines** object. The following example adds series lines to chart group 1 in the active chart (the chart must be a 2-D stacked bar or column chart).

```
set has series lines of chart group 1 of active chart to true
```

If the *has series lines* property is **false**, most properties of the **series lines** object are disabled.

Properties

border

> Returns a **border** object that represents the border of the object. Read-only.

name

> Returns the name of the object. Read-only.

Class: series point

Plural

series points

Represents a single point in a series in a chart.

Use **series point** *index*, where *index* is the point index number, to return a single **series point** object. Points are numbered from left to right on the series. `series point 1` is the leftmost point, and `series point (get count of series points)` is the rightmost point. The following example sets the marker style for the third point in series 1 in the active chart. The specified series must be a 2-D line, scatter, or radar series.

```
set marker style of series point 3 of series 1 ¬
        of active chart to marker style diamond
```

Properties

apply pict to end

> **True** if a picture is applied to the end of the point or all points in the series. Read/write.

apply pict to front

> **True** if a picture is applied to the front of the point or all points in the series. Read/write.

apply pict to sides

> **True** if a picture is applied to the sides of the point or all points in the series. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

chart fill format object

> Returns a **chart fill format** object that contains fill formatting properties for the specified chart or shape. Read-only.

data label object

> Returns a **data label** object that represents the data label associated with the point or trendline. Read-only.

explosion

> Returns or sets the explosion value for a pie-chart or doughnut-chart slice. Returns 0 (zero) if there is no explosion (the tip of the slice is in the center of the pie). Read/write.

has data label

> **True** if the point has a data label. Read/write.

interior object

> Returns an **interior** object that represents the interior of the specified object. Read-only.

invert if negative

> **True** if Excel inverts the pattern in the item when it corresponds to a negative number. Read/write.

marker background color

> Returns or sets the marker background color as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker background color index

> Returns or sets the marker background color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

> The following illustration shows the color-index values in the default color palette.

marker foreground color

> Returns or sets the foreground color of the marker as an RGB value. Applies only to line, scatter, and radar charts. Read/write.

marker foreground color index

> Returns or sets the marker foreground color as an index into the current color palette, or as **color index automatic** or **color index none**. Applies only to line, scatter, and radar charts. Read/write.

> For the color-index values in the default color palette, see the *marker background color index* property.

marker size

> Returns or sets the data-marker size, in points. Read/write.

marker style

> Returns or sets the marker style for a point or series in a line chart, scatter chart, or radar chart. Read/write.

> Can be one of the following:

marker style none	**marker style star**
marker style automatic	**marker style dot**
marker style square	**marker style dash**
marker style diamond	**marker style circle**
marker style triangle	**marker style plus**
marker style x	**marker style picture**

picture type

> Returns or sets the way pictures are displayed on a column or bar picture chart or on the walls and faces of a 3-D chart. Read/write.

> Can be one of the following:

Value	Meaning
chart picture type stretch	Stretch the picture to reach the necessary value.
chart picture type stack	Stack the pictures to reach the necessary value.
chart picture type stack scale	Stack the pictures, but use the *picture unit* property to determine what unit each picture represents.

picture unit

> Returns or sets the unit for each picture on the chart if the *picture type* property is set to **chart picture type stack scale**. If not, this property is ignored. Read/write.

secondary plot

> **True** if the point is in the secondary section of either a pie-of-pie chart or a bar-of-pie chart. Applies only to points on pie-of-pie charts or bar-of-pie charts. Read/write.

shadow

> **True** if the object has a shadow. Read/write.

Class: tick labels

Represents the tick-mark labels associated with tick marks on a chart axis. There is no object that represents a single tick-mark label; you must return all the tick-mark labels as a unit.

Tick-mark label text for the category axis comes from the name of the associated category in the chart. The default tick-mark label text for the category axis is the number that indicates the position of the category relative to the left end of this axis. To change the number of unlabeled tick marks between tick-mark labels, you must change the *tick label spacing* property for the category axis.

Tick-mark label text for the value axis is calculated based on the *major unit*, *minimum scale*, and *maximum scale* properties of the value axis. To change the tick-mark label text for the value axis, you must change the values of these properties.

Use the *tick labels* property to return the **tick labels** object. The following example sets the orientation of the tick labels on a chart.

```
set orientation of tick labels of (get axis active chart ¬
        axis type category axis) to tick label orientation downward
```

Properties

auto scale font

> **True** if the text in the tick labels changes font size when the tick labels size changes. The default value is **true**. Read/write.

depth

> Returns the number of levels of category tick labels. Read-only.

font object

> Returns a **font** object that represents the font of the object. Read-only.

name

> Returns the name of the object. Read-only.

number format

> Returns or sets the format code for the tick labels. Read/write.
>
> You'll find a list of format codes under the **Custom** category on the **Number** tab in the **Format Cells** dialog box.

number format linked

> **True** if the number format is linked to the cells (so that the number format changes in the labels when it changes in the cells). Read/write.

offset

> Returns or sets the distance between the levels of labels, and the distance between the first level and the axis line. The default distance is 100 percent, which represents the default spacing between the axis labels and the axis line. The value can be an integer percentage from 0 through 1000, relative to the axis label's font size. Read/write.

orientation

> Returns or sets the tick label's orientation. Read/write.
>
> Can be one of the following:

- **orientation down**
- **orientation horizontal**
- **orientation upward**
- **orientation vertical**

> Can also be a number value between -90 and 90 degrees.

reading order

> Returns or sets the reading order for the tick label. Read/write.
>
> This property is not used in the U.S. English version of Excel.

tick alignment

> Returns or sets the alignment for the specified tick label. Read/write.
>
> Can be one of the following:

- **align tick label center**
- **align tick label left**
- **align tick label right**

Class: trendline

Plural

trendlines

Represents a trendline in a chart. A trendline shows the trend, or direction, of data in a series.

Use **trendline** *index*, where *index* is the trendline index number, to return a single **trendline** object. The following example changes the trendline type for the first series in a chart. If the series has no trendline, this example will fail.

```
set trendline type of trendline 1 of series 1 ¬
        of active chart to polynomial
```

The index number denotes the order in which the trendlines were added to the series. `trendline 1` is the first trendline added to the series, and `trendline (get count of trendlines)` is the last one added.

Properties

backward

> Returns or sets the number of periods (or units on a scatter chart) that the trendline extends backward. Read/write.

border

> Returns a **border** object that represents the border of the object. Read-only.

data label object

> Returns a **data label** object that represents the data label associated with the point or trendline. Read-only.

display R squared

> **True** if the R-squared value of the trendline is displayed on the chart (in the same data label as the equation). Setting this property to **true** automatically turns on data labels. Read/write.

display equation

> **True** if the equation for the trendline is displayed on the chart (in the same data label as the R-squared value). Setting this property to **true** automatically turns on data labels. Read/write.

entry index

> Returns the index number of the object within the elements of the parent object. Read-only.

forward

> Returns or sets the number of periods (or units on a scatter chart) that the trendline extends forward. Read/write.

intercept

> Returns or sets the point where the trendline crosses the value axis. Read/write.

> Setting this property sets the *intercept is auto* property to **false**.

intercept is auto

> **True** if the point where the trendline crosses the value axis is automatically determined by the regression. Read/write.

> Setting the *intercept* property sets this property to **false**.

name

> Returns or sets the name of the trendline. Read/write.

name is auto

> **True** if Excel automatically determines the name of the trendline. Read/write.

order

> Returns or sets the trendline order (an integer greater than 1) when the *trendline type* property is **polynomial**. Read/write.

period

> Returns or sets the period for the moving-average trendline. Read/write.

trendline type

> Returns or sets the trendline type. Read/write.

> Can be one of the following:

- **exponential**
- **linear**
- **logarithmic**
- **moving average**
- **polynomial**
- **power**

Class: up bars

Represents the up bars in a chart group. Up bars connect points on series one with higher values on the last series in the chart group (the lines go up from series one). Only 2-D line groups that contain at least two series can have up bars. There is no object that represents a single up bar; up bars must be either turned on or off for all points in a chart group.

Use the *up bars object* property to return the **up bars** object. The following example turns on up and down bars for chart group 1 in a chart.

```
set has up down bars of chart group 1 of active chart to true
```

If the *has up down bars* property is **false**, most properties of the **up bars** object are disabled.

Properties

border

>   Returns a **border** object that represents the border of the object. Read-only.

chart fill format object

>   Returns a **chart fill format** object that contains fill formatting properties for the object. Read-only.

interior object

>   Returns an **interior** object that represents the interior of the object. Read-only.

name

>   Returns the name of the object. Read-only.

Class: walls

Represents the walls of a 3-D chart. There is no object that represents a single wall; you must return all the walls as a unit.

Use the *walls object* property to return the **walls** object. The following example sets the pattern on the walls for the active chart. If the chart is not a 3-D chart, this example will fail.

```
set pattern of interior object of walls object ¬
        of active chart to pattern checker
```

Properties

border

>   Returns a **border** object that represents the border of the object. Read-only.

chart fill format object

>   Returns a **chart fill format** object that contains fill formatting properties for the object. Read-only.

interior object

>   Returns an **interior** object that represents the interior of the object. Read-only.

name

>   Returns the name of the object. Read-only.

picture type

> Returns or sets the way pictures are displayed on a column or bar picture chart or on the walls and faces of a 3-D chart. Read/write.
>
> Can be one of the following:

Value	Meaning
chart picture type stretch	Stretch the picture to reach the necessary value.
chart picture type stack	Stack the pictures to reach the necessary value.
chart picture type stack scale	Stack the pictures, but use the *picture unit* property to determine what unit each picture represents.

picture unit

> Returns or sets the unit for each picture on the chart if the *picture type* property is set to **chart picture type stack scale**. If not, this property is ignored. Read/write.

Class: xy group

Plural

xy groups

Represents one or more series plotted in an xy chart. A chart contains one or more chart groups, each chart group contains one or more series, and each series contains one or more points. For example, a single chart might contain both a line chart group, containing all the series plotted with the line chart format, and an xy chart group, containing all the series plotted with the xy chart format.

Use **xy group** *index*, where *index* is the chart-group index number, to return a single **xy group** object. The following example adds drop lines to xy group 1 on the active chart.

```
set has drop lines of xy group 1 of active chart to true
```

Properties

<Inheritance> **chart group**

> Inherits the properties and elements of the **chart group** class.
>
> .

Chart Suite Commands

Command: activate object (chart)

Activates the chart object.

Syntax

activate   chart/chart object   Required. An expression that returns a **chart** or **chart object** object.

Example

This example creates a new chart called Chart1 and then activates it.

```
set Chart1 to make new chart object at active sheet

activate object Chart1
```

Command: `apply custom chart type`

This command is not currently supported.

Command: `apply data labels`

Syntax

Applies data labels to a series or all the series in a chart.

apply data labels chart   Required. An expression that returns a **chart** object.

[**type** enumeration]   Optional. The data label type. Can be one of the following:

Value	Description
data labels show none	No data labels.
data labels show value	Value for the point (assumed if this argument isn't specified).
data labels show percent	Percentage of the total. Available only for pie charts and doughnut charts.
data labels show label	Category for the point. This is the default value.
data labels show label and percent	Percentage of the total, and category for the point. Available only for pie charts and doughnut charts.
data labels show bubble sizes	On bubble charts, show bubble size.

[**legend key** Boolean]   Optional. **True** to show the legend key next to the point. The default value is **false**.

[**auto text** Boolean]   Optional. **True** if the object automatically generates appropriate text based on content.

[**has leader lines** Boolean]   Optional. **True** if the series has leader lines.

Example

This example applies category labels to series one in the active chart.

```
apply data labels active chart type data labels show value
```

Command: `bring to front (chart)`

Brings the chart object to the front of the z-order.

Syntax

bring to front chart object   Required. An expression that returns a **chart object** object.

Example

This example brings Chart1 on Sheet1 to the front of the z-order.

```
bring to front chart object "Chart1" of worksheet "Sheet1"
```

Command: chart location

Moves the chart to a new location.

Syntax

chart location   chart   Required. An expression that returns a **chart** object.

> **where**   enumeration   Required. Where to move the chart. Can be one of the following: **location as new sheet**, **location as object**, or **location automatic**.

> [**name**   Unicode text]   Optional (Required if **where** is **location as object**). The name of the sheet where the chart will be embedded if **where** is **location as object** or the name of the new sheet if **where** is **location as new sheet**.

Example

This example moves the active chart to a new chart sheet named "Monthly Sales."

```
chart location active chart where location as new sheet name "Monthly Sales"
```

Command: chart one color gradient

Sets the specified fill to a one-color gradient.

Syntax

chart one color gradient   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label Required. An expression that returns one of the listed objects.

> **gradient style**   enumeration   Required. The gradient style. Can be one of the following:

> - **gradient unset**
> - **horizontal gradient**
> - **vertical gradient**
> - **diagonal up gradient**
> - **diagonal down gradient**
> - **from corner gradient**
> - **from title gradient** (PowerPoint only)
> - **from center gradient**

> **variant**   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is **from center gradient**, the **variant** argument can only be 1 or 2.

> **degree**   small real   Required. The gradient degree. Can be a value from 0.0 (dark) through 1.0 (light).

Example

This example sets the fill format for series 1 of the active chart to a horizontal one-color gradient.

```
chart one color gradient series 1 of active chart ¬
        gradient style horizontal gradient variant 3 degree 0.34
```

446

Command: `chart patterned`

Sets the specified fill to a pattern.

Syntax

chart patterned   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label   Required. An expression that returns a **chart fill format** object.

pattern   enumeration   Required. The pattern type. Can be one of the following:

pattern unset	**wide downward diagonal**
five percent pattern	**wide upward diagonal pattern**
ten percent pattern	**dashed upward diagonal pattern**
twenty percent pattern	**dashed downward diagonal pattern**
twenty five percent pattern	**narrow vertical pattern**
thirty percent pattern	**narrow horizontal pattern**
forty percent pattern	**dashed vertical pattern**
fifty percent pattern	**dashed horizontal pattern**
sixty percent pattern	**large confetti pattern**
seventy percent pattern	**large grid pattern**
seventy five percent pattern	**horizontal brick pattern**
eighty percent pattern	**large checker board pattern**
ninety percent pattern	**small confetti pattern**
dark horizontal pattern	**zig zag pattern**
dark vertical pattern	**solid diamond pattern**
dark downward diagonal pattern	**diagonal brick pattern**
dark upward diagonal pattern	**outlined diamond pattern**
small checker board pattern	**plaid pattern**
trellis pattern	**sphere pattern**
light horizontal pattern	**weave pattern**
light vertical pattern	**dotted grid pattern**
light downward diagonal pattern	**divot pattern**
light upward diagonal pattern	**shingle pattern**
small grid pattern	**wave pattern**
dotted diamond pattern	

Example

This example sets the fill pattern for the plot area of the active chart.

```
chart patterned chart fill format object of plot area object ¬
        of active chart pattern dark downward diagonal pattern
```

Command: `chart solid`

Sets the specified fill to a uniform color. Use this command to convert a gradient, textured, patterned, or background fill back to a solid fill.

Syntax

chart solid   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label   Required. An expression that returns a **chart fill format** object.

Example

This example converts the floor of the active chart to a solid color.

```
chart solid chart fill format object of floor object of active chart
```

Command: `chart two color gradient`

Sets the specified fill to a two-color gradient.

Syntax

chart two color gradient   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label Required. An expression that returns a **chart fill format** object.

> **gradient style**   enumeration   Required. The gradient style. Can be one of the following:
>
> - **gradient unset**
> - **horizontal gradient**
> - **vertical gradient**
> - **diagonal up gradient**
> - **diagonal down gradient**
> - **from corner gradient**
> - **from title gradient** (PowerPoint only)
> - **from center gradient**
>
> **variant**   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is **from center gradient**, the **variant** argument can only be 1 or 2.

Example

This example sets the two color gradient for a series in the active chart.

```
chart two color gradient series 1 of active chart ¬
       gradient style vertical gradient variant 3
```

Command: `chart user picture`

Fills the specified shape with an image.

Syntax

chart user picture   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label   Required. An expression that returns a **chart fill format** object.

[**picture file**   Unicode text]   Optional. The name of the picture file.

[**picture format**   enumeration]   Optional. The picture format. Can be one of the following: **chart picture type stack scale**, **chart picture type stack**, or **chart picture type stretch**.

[**picture stack unit**   integer]   Optional. The picture stack or scale unit (depends on the **picture format** argument).

[**picture placement**   enumeration]   Optional. The picture placement. Can be one of the following: **sides**, **end**, **end sides**, **front**, **front sides**, **front end**, or **all faces**.

Example

This example sets the fill format for a series to a picture titled "brick.bmp."

```
chart user picture series 1 of active chart picture file "brick.bmp"
```

Command: `chart user textured`

Fills the specified shape with small tiles of an image. To fill the shape with one large image, use the **chart user picture** command.

Syntax

chart user textured   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label   Required. An expression that returns a **chart fill format** object.

[**texture file**   Unicode text]   Required. The name of the picture file.

Example

This example sets the fill format for the floor of the active chart to use a picture titled "brick.bmp" as the texture.

```
chart user textured chart fill format object of floor object ¬
        of active chart texture file "brick.bmp"
```

Command: `chart wizard`

This command is not currently supported.

Command: check spelling (chart)

Checks the spelling of an object. This form has no return value; Excel displays the **Spelling** dialog box.

Syntax

check spelling   chart   Required. Checks the spelling of the chart.

[**custom dictionary**   Unicode text]   Optional. A string that indicates the file name of the custom dictionary to examine if the word isn't found in the main dictionary. If this argument is omitted, the currently specified dictionary is used.

[**ignore uppercase**   Boolean]   Optional. **True** to have Excel ignore words that are all uppercase. **False** to have Excel check words that are all uppercase. If this argument is omitted, the current setting will be used.

[**always suggest**   Boolean]   Optional. **True** to have Excel display a list of suggested alternate spellings when an incorrect spelling is found. **False** to have Excel wait for you to input the correct spelling. If this argument is omitted, the current setting will be used.

Remarks

To check headers, footers, and objects on a worksheet, use this command on a **worksheet** object.

To check only cells and notes, use this command on the **cell** object.

Example

This example checks spelling on the active chart sheet.

```
check spelling active chart with ignore uppercase without always suggest
```

Command: clear

Clears the entire **chart area** or **legend** object.

Syntax

clear   chart area/legend   Required. An expression that returns a **chart area** or **legend** object.

Example

This example removes the chart legend from the active chart.

```
clear legend object of active chart
```

Command: clear contents (chart)

Clears the data from a chart but leaves the formatting.

Syntax

clear contents   chart area   Required. An expression that returns a **chart area** object.

Example

This example clears the chart data from the active chart but leaves the formatting intact.

```
clear contents chart area object of active chart
```

Command: `clear formats`

Clears the formatting of the chart object.

Syntax

clear formats series point/series/legend key/trendline/floor/walls/plot area/chart area/error bars Required. An expression that returns one of the listed objects.

Example

This example clears the formatting from the first series in the active chart.

```
clear formats series 1 of active chart
```

Command: `copy chart as picture`

Copies the selected **chart** object to the Clipboard as a picture.

Syntax

copy chart as picture chart Required. An expression that returns a **chart** object.

[**appearance** enumeration] Optional. Specifies how the picture should be copied. Can be one of the following: **screen** or **printer**. If **screen** is used, the picture is copied to resemble its display on the screen as closely as possible. If **printer** is used, the picture is copied as it will look when it's printed. The default value is **screen**.

[**format** enumeration] Optional. The format of the picture. Can be one of the following: **picture** or **bitmap**. The default value is **picture**.

[**output size** enumeration] Optional. Used only with **chart** objects. The size of the copied picture when the object is a chart on a chart sheet (not embedded on a worksheet). Can be one of the following: **screen** or **printer**. If **screen** is used, the picture is copied to match the size of its display on the screen as closely as possible. If **printer** is used, the picture is copied to match its printed size as closely as possible. The default value is **printer**.

Remarks

If you copy a range, it must be made up of adjacent cells.

Example

This example copies the active chart to the Clipboard as a picture optimized for display on a screen.

```
copy chart as picture active chart appearance screen ¬
        format picture output size screen
```

Command: `copy object (chart)`

Copies the object to the Clipboard.

Syntax

copy object chart object/series point/series/chart area Required. An expression that returns one of the listed objects.

Example

This example copies the active chart to the Clipboard.

```
copy object active chart
```

Command: copy picture (chart)

Copies the selected object to the Clipboard as a picture.

Syntax

copy picture   chart object   Required. An expression that returns a **chart object** object.

[**appearance**   enumeration]   Optional. Specifies how the picture should be copied. Can be one of the following: **screen** or **printer**. If **screen** is used, the picture is copied to resemble its display on the screen as closely as possible. If **printer** is used, the picture is copied as it will look when it's printed. The default value is **screen**.

[**format**   enumeration]   Optional. The format of the picture. Can be one of the following: **picture** or **bitmap**. The default value is **picture**.

Remarks

If you copy a range, it must be made up of adjacent cells.

Example

This example copies a screen image of the active chart object.

```
copy picture active chart appearance screen format picture
```

Command: cut (chart)

Cuts the object to the Clipboard or pastes it into a specified destination.

Syntax

cut   chart object   Required. An expression that returns a **chart object** object.

Only embedded charts can be cut.

Example

This example creates and then cuts the chart on the active sheet.

```
set ch1 to (make new chart object at active sheet)
cut ch1
```

Command: deselect

Cancels the selection for the specified chart.

Syntax

deselect   chart   Required. An expression that returns a **chart** object.

Example

This example is equivalent to pressing ESC while working on the active chart. The example should be run on a chart that has a component (such as an axis) selected.

```
deselect active chart
```

Command: `error bar`

This command is not currently supported.

Command: `get axis`

Returns an object that represents the specified axis.

Syntax

get axis chart   Required. An expression that returns a **chart** object.

> **axis type** enumeration   Required. Specifies the axis to return. Can be one of the following: **category axis**, **series axis**, or **value axis**. The **series axis** value is valid only for 3-D charts.

> [**which axis** enumeration]   Optional. Specifies the axis group. Can be one of the following: **primary axis** or **secondary axis**. If this argument is omitted, the **primary axis** group is used. 3-D charts have only one axis group.

Example

This example gets the category axis of the active chart.

```
get axis active chart axis type category axis
```

Command: `get chart element`

Returns information about the chart element at specified X and Y coordinates. This command is unusual in that you specify values for only the first two arguments. Excel fills in the other arguments, and your code should examine those values when the command returns.

Syntax

get chart element chart   Required. An expression that returns a **chart** object.

> **x** integer   Required. The X coordinate of the chart element.

> **y** integer   Required. The Y coordinate of the chart element.

Returned items

> **element id** integer   Returned. When the command returns, this argument contains the value of the chart element at the specified coordinates.

> **argument1** integer   Returned. When the command returns, this argument contains information related to the chart element.

> **argument2** integer   Returned. When the command returns, this argument contains information related to the chart element.

The value of **element id** after the command returns determines whether **argument1** and **argument2** contain any information, as shown in the following table.

element id	argument1	argument2
chart area	none	none
chart title	none	none
plot area	none	none
legend	none	none
floor	none	none
walls	none	none
corners	none	none
data table	none	none
series	series index	point index
data label	series index	point index
trendline	series index	trendline index
error bars	series index	none
x error bars	series index	none
y error bars	series index	none
legend entry	series index	none
legend key	series index	none
axis	axis index	axis type
major gridlines	axis index	axis type
minor gridlines	axis index	axis type
axis title	axis index	axis type
up bars	group index	none
down bars	group index	none
series lines	group index	none
hilo lines	group index	none
drop lines	group index	none
radar axis labels	group index	none
shape	shape index	none
nothing	none	none

The following table describes the meaning of **argument1** and **argument2** after the command returns.

Argument	Description
series index	Specifies the offset for a specific series.
point index	Specifies the offset for a specific point within a series. A value of -1 indicates that all data points are selected.
trendline index	Specifies the offset for a specific trendline within a series.
axis index	Specifies whether the axis is primary (0) or secondary (1).
axis type	Specifies the axis type: category axis (0), value axis (1), or series axis (2).
group index	Specifies the offset for a specific chart group.
shape index	Specifies the offset for a specific shape.

Example
This example gets the chart element at coordinate 120:120.

```
get chart element active chart x 120 y 120
```

Command: get has axis

Returns which axes exist on the chart.

Syntax

get has axis chart Required. An expression that returns a **chart** object.

   [**axis type** enumeration] Optional. Specifies the axis type. Can be one of the following: **category axis**, **series axis**, or **value axis**.

   [**axis group** enumeration] Optional. Specifies the axis group. Can be one of the following: **primary axis** or **secondary axis**.

Example
This example checks for the existence of a category axis for chart one.

```
get has axis active chart axis type category axis axis group primary axis
```

Command: paste

Pastes a **floor** or **walls** object from the Clipboard into a specified destination.

Syntax
paste floor/walls Required. An expression that returns a **floor** or **walls** object.

Example
This example pastes a **floor** object from the Clipboard.

```
paste floor object of active chart
```

Command: `paste chart`

Pastes chart data from the Clipboard into the specified chart.

Syntax

paste chart   chart   Required. An expression that returns a **chart** object.

[**format**   enumeration]   Optional. Specifies the chart information to paste if a chart is on the Clipboard. Can be one of the following:

- **paste all**
- **paste all except borders**
- **paste formats**
- **paste formulas**
- **paste comments**
- **paste values**
- **paste column widths**
- **paste validation**
- **paste formulas and number formats**
- **paste values and number formats**

The default value is **paste all**. If there is data other than a chart on the Clipboard, this argument cannot be used.

This command changes the current selection.

Example

This example pastes a chart from the Clipboard.

```
paste chart active chart
```

Command: `paste series`

Pastes a picture from the Clipboard as the marker on the selected series.

Syntax

paste series   series   Required. An expression that returns a **series** object.

Example

This example pastes a picture from the Clipboard into series 1 in the active chart.

```
paste series series 1 of active chart
```

Command: `preset chart gradient`

Sets the specified fill to a preset gradient.

Syntax

preset chart gradient   chart fill format/chart title/axis title/series point/series/data label/legend key/down bars/floor/walls/plot area/chart area/legend/display unit label   Required. An expression that returns a **chart fill format** object.

  gradient style   enumeration   Required. The gradient style. Can be one of the following:

- **gradient unset**
- **horizontal gradient**
- **vertical gradient**
- **diagonal up gradient**
- **diagonal down gradient**
- **from corner gradient**
- **from title gradient** (PowerPoint only)
- **from center gradient**

  variant   integer   Required. The gradient variant. Can be a value from 1 through 4, corresponding to one of the four variants on the **Gradient** tab in the **Fill Effects** dialog box. If **gradient style** is **from center gradient**, the **variant** argument can only be 1 or 2.

  preset gradient type   enumeration   Required. The gradient type. Can be one of the following:

preset gradient unset	**gradient wheat**
gradient early sunset	**gradient parchment**
gradient late sunset	**gradient mahogany**
gradient nightfall	**gradient rainbow**
gradient daybreak	**gradient rainbow2**
gradient horizon	**gradient gold**
gradient desert	**gradient gold2**
gradient ocean	**gradient brass**
gradient calm water	**gradient chrome**
gradient fire	**gradient chrome2**
gradient fog	**gradient silver**
gradient moss	**gradient sapphire**
gradient peacock	

Example

This example sets the gradient for the up bars of the active chart.

```
preset chart gradient up bars object of chart group 1 ¬
        of active chart gradient style diagonal up  ¬
        gradient variant 3 preset gradient type gradient daybreak
```

Command: `preset chart textured`

This command is not currently supported.

Command: `print out (chart)`

Prints the chart.

Syntax

print out chart   Required. An expression that returns a **chart** object.

[**from** integer]   Optional. The number of the page at which to start printing. If this argument is omitted, printing starts at the beginning.

[**to** integer]   Optional. The number of the last page to print. If this argument is omitted, printing ends with the last page.

[**copies** integer]   Optional. The number of copies to print. If this argument is omitted, one copy is printed.

[**preview** Boolean]   Optional. **True** to have Excel invoke print preview before printing the object. **False** (or omitted) to print the object immediately.

[**active printer** Unicode text]   Optional. This argument is not currently supported.

[**print to file** Boolean]   Optional. This argument is not currently supported.

[**collate** Boolean]   Optional. **True** to collate multiple copies.

Remarks

"Pages" in the descriptions of **from** and **to** refers to printed pages, not overall pages in the sheet or workbook.

This command applies to the **window** object only when it's the Info window.

Example

This example prints the active chart sheet.

```
print out active sheet
```

Command: `print preview (chart)`

Shows a preview of the chart as it would look when printed.

Syntax

print preview chart   Required. An expression that returns a **chart** object.

[**enable changes** Boolean]   Optional. Controls access to the **Page Setup** dialog box and the ability to change margins from the **Print Preview** window by enabling or disabling the **Setup** and **Margins** buttons, respectively.

Example

This example displays the active sheet in print preview.

```
print preview active sheet
```

Command: protect chart

Protects a chart so that it cannot be modified.

Syntax

protect chart   chart   Required. An expression that returns a **chart** object.

[**password**   Unicode text]   Optional. A string that specifies a case-sensitive password for the sheet. If this argument is omitted, you can unprotect the sheet without using a password. Otherwise, you must specify the password to unprotect the sheet. If you forget the password, you cannot unprotect the sheet. It's a good idea to keep a list of your passwords and their corresponding document names in a safe place.

[**drawing objects**   Boolean]   Optional. **True** to protect shapes. The default value is **false**.

[**chart contents**   Boolean]   Optional. **True** to protect contents. This protects the entire chart. The default value is **true**.

[**user interface only**   Boolean]   Optional. **True** to protect the user interface, but not VB macros. If this argument is omitted, protection applies both to VB macros and to the user interface.

Example

This example protects the active chart by setting "drowssap" as the password.

```
protect chart active chart password "drowssap"
```

Command: refresh (chart)

Updates the cache of the chart object.

Syntax

refresh   chart   Required. An expression that returns a **chart** object.

Example

This example refreshes the active chart.

```
refresh active chart
```

Command: save as (chart)

Saves changes to a different file.

Syntax

save as chart Required. An expression that returns a **chart** object.

filename Unicode text Optional. A string that indicates the name of the file to be saved. You can include a full path; if you don't, Excel saves the file in the current folder.

[**file format** enumeration] Optional. The file format to use when you save the file. Can be one of the following:

add in file format	**template file format**
CSV file format	**current platform text file format**
CSV Mac file format	**text Mac file format**
CSV MSDos file format	**text MSDos file format**
CSV Windows file format	**text printer file format**
DBF2 file format	**text windows file format**
DBF3 file format	**WJ2WD1 file format**
DBF4 file format	**Works1 file format**
DIF file format	**Works 1 all file format**
Excel2 file format	**Works 1 fmt file format**
Excel 2 east asian file format	**Works3 file format**
Excel3 file format	**Works 3 fm 3 file format**
Excel4 file format	**Works4 file format**
Excel 4 workbook file format	**works file format**
Excel7 file format	**works 2 east asian file format**
Excel 9795 file format	**WQ1 file format**
international add in file format	**WJ3 file format**
international macro file format	**WJ3FJ3 file format**
workbook normal file format	**HTML file format**
SYLK file format	**XML spreadsheet file format**

The following formats are available only in the Japanese version of Excel: **WJ2WD1 file format**, **Excel 2 east asian file format**, and **works 2 east asian file format**.

[**password** Unicode text] Optional. A case-sensitive string (no more than 15 characters) that indicates the protection password to be given to the file.

[**write reservation password** Unicode text] Optional. A string that indicates the write-reservation password for this file. If a file is saved with the password and the password isn't supplied when the file is opened, the file is opened as read-only.

[**read only recommended** Boolean] Optional. **True** to display a message when the file is opened, recommending that the file be opened as read-only.

[**create backup** Boolean] Optional. **True** to create a backup file.

[**add to most recently used list** Boolean] Optional. **True** to add this workbook to the list of recently used files. The default value is **false**.

Example

This example saves a chart in Excel 4 workbook format and adds a password.

```
save as active chart filename "saved chart" ¬
        file format Excel 4 workbook file format ¬
        password "password"
```

Command: `send to back (chart)`

Sends the chart object to the back of the z-order.

Syntax

send to back chart object   Required. An expression that returns a **chart** object.

Example

This example sends the active chart to the back of the z-order.

```
send to back active chart
```

Command: `set background picture (chart)`

Sets the background graphic for a chart.

Syntax

set background picture chart   Required. An expression that returns a **chart** object.

  picture file name Unicode text   Required. The name of the graphic file.

Example

This example sets the background graphic for the active chart.

```
set background picture active chart ¬
        picture file name "Macintosh HD:Users:Shared:watrmark.gif"
```

Command: `set has axis`

Sets which axes exist on the chart.

Syntax

set has axis chart   Required. An expression that returns a **chart** object.

  axis exists Boolean   Required. **True** if the specified axis should exist.

  [**axis type** enumeration]   Optional. Specifies the axis type. Can be one of the following: **category axis**, **series axis**, or **value axis**.

  [**axis group** enumeration]   Optional. Specifies the axis group. Can be one of the following: **primary axis** or **secondary axis**.

Example

This example turns off the category axis for the chart.

```
set has axis active chart axis exists false axis type category axis
```

Command: set source data

Sets the source data range for the chart.

Syntax

set source data   chart   Required. An expression that returns a **chart** object.

  source   range   Required. The range that contains the source data.

  [**plot by**   enumeration]   Optional. Specifies the way the data is to be plotted. Can be either **by columns** or **by rows**.

Example

This example sets the source data range for the active chart and plots by columns.

```
set source data active chart source range "=Sheet1!$B$1:$C$4" ¬
        plot by columns
```

Command: unprotect (chart)

Removes protection from a chart. This command has no effect if the sheet or workbook isn't protected.

Syntax

unprotect   chart   Required. An expression that returns a **chart** object.

  [**password**   Unicode text]   Optional. A string that denotes the case-sensitive password to use to unprotect the chart. If the chart isn't protected with a password, this argument is ignored. If you omit this argument for a chart that's protected with a password, you'll be prompted for the password.

Remarks

If you forget the password, you cannot unprotect the chart. It's a good idea to keep a list of your passwords and their corresponding document names in a safe place.

Example

This example removes protection from the active chart by providing the correct password.

```
unprotect active chart password "drowssap"
```