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Lesson 3:  
Conditionals

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22. Lesson 3 Summary

Mentorship

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Here's the logical expression used to represent Julia's weekend plans:

```
var colt = "not busy";
var weather = "nice";

if (colt === "not busy" && weather === "nice") {
  console.log("go to the park");
}
```

**Prints:** "go to the park"

Notice the `&&` in the code above.

The `&&` symbol is the logical AND operator, and it is used to combine two logical expressions into one larger logical expression. If **both** smaller expressions are *true*, then the entire expression evaluates to *true*. If **either one** of the smaller expressions is *false*, then the whole logical expression is *false*.

Another way to think about it is when the `&&` operator is placed between the two statements, the code literally reads, "if Colt is not busy *AND* the weather is nice, then go to the park".

Logical expressions

**Logical expressions** are similar to mathematical expressions, except logical expressions evaluate to either *true* or *false*.

```
11 1= 12
```

**Returns:** true

You've already seen logical expressions when you write comparisons. A comparison is just a simple logical expression.

Similar to mathematical expressions that use `+`, `-`, `*`, `/` and `%`, there are logical operators `&&`, `||` and `!` that you can use to create more complex logical expressions.

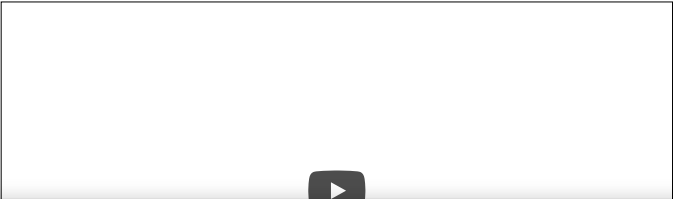
Logical operators

**Logical operators** can be used in conjunction with boolean values ( `true` and `false` ) to create complex logical expressions.

By combining two boolean values together with a logical operator, you create a *logical expression* that returns another boolean value. Here's a table describing the different logical operators:

Operator	Meaning	Example	How it works
<code>&amp;&amp;</code>	Logical AND	<code>value1 &amp;&amp; value2</code>	Returns <code>true</code> if <b>both</b> <code>value1</code> <b>and</b> <code>value2</code> evaluate to <code>true</code> .
<code>  </code>	Logical OR	<code>value1    value2</code>	Returns <code>true</code> if <b>either</b> <code>value1</code> <b>or</b> <code>value2</code> (or even both!) evaluates to <code>true</code> .
<code>!</code>	Logical NOT	<code>!value1</code>	Returns the <b>opposite</b> of <code>value1</code> . If <code>value1</code> is <code>true</code> , then <code>!value1</code> is <code>false</code> .

By using logical operators, you can create more complex conditionals like Julia's weekend example.



Logical operators can be used to combine multiple conditional statements into a single statement.

**TIP:** Logical expressions are evaluated from left to right. Similar to mathematical expressions, logical expressions can also use parentheses to signify parts of the expression that should be evaluated first.

QUESTION 1 OF 3

What value of [BLANK] would make the following expression evaluate to **false** . Notice the **!** right at the beginning!

```
!([BLANK] === 4) && "STRING" === "STRING"
```

Returns: false

☐ -4

☒ 4

☐ "4"

☐ "-4"

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QUESTION 2 OF 3

Select the operator that would make the following expression evaluate to **true** .

```
3 < -10 [BLANK] "James" !== "james"
```

Returns: true

☐ !

☒ ||

☐ &&

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QUESTION 3 OF 3

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Logical Operators

true || false

☐ false && false

☐ !true

(13 > -7) || (false == 0)

☐ (10 === "10") && (1 <= 2)

(3 != 6 % 3) && !(24 > 45) && (!false)

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NEXT