

```

1  # Function with optional argument
2  function greet(name="User")
3      println("Hello, $name")
4  end
5
6  # struct and its usage
7  struct Point{T}
8      x::T
9      y::T
10 end
11 p1 = Point(1.0, 3.7)
12 println("Point: [$(p1.x), $(p1.y)]")
13
14 # Array and array comprehension
15 numbers = [1, 2, 3, 4, 5]
16 squared_numbers = [x^2 for x in numbers]
17
18 # Dictionaries and their usage
19 person = Dict{"name" => "John", "age" => 30}
20 for (key, value) in person
21     println("$key: $value")
22 end
23
24 # Try-catch block
25 try
26     result = 10 / 0
27 catch e
28     result = "Error: $e"
29 end
30
31 # While loop with break statement
32 i = 1
33 while i ≤ 5
34     if i == 3
35         break
36     end
37     println(i)
38     i += 1
39 end
40
41 # Anonymous function (lambda) and map function
42 double = x → 2x
43 numbers = [1, 2, 3, 4, 5]
44 doubled_numbers = map(double, numbers)
45
46 # Set data structure
47 fruits = Set(["apple", "banana", Nothing])
48
49 # Tuple unpacking and multi-line string
50 (x, y) = (10, 20)
51 multi_line_string = """
52 This is a multi-line
53 string in Julia.
54 """

```

Listing 1: Example - Julia (TreeSitter powered highlighting)

```

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52 This is a multi-line
53 string in Julia.
54 """

```

Listing 1: Example - Julia (minted powered highlighting)

```

1 from math import cos
2 # Class with magic methods and inheritance
3 class Shape:
4     """
5     This is doc comment for Shape with some escape sequence \t\t in it.
6     Second line here.
7     """
8     def __init__(self, size: int, color: str = "black"):
9         self.color = color
10        self.size = abs(size)
11        print(f"creating {self.color} shape of size: ", self.size)
12        if self.size < 5:
13            print("shape is quite small")
14
15    def __str__(self) -> str:
16        return f"{self.color} shape" # here some direct string formatting
17
18    def truthy(self, a: int) -> bool:
19        print(f"foo\t{a}\tbar") # here some more string shenanigans
20        return True
21
22    def is_larger_than(self, other: "Shape") -> bool:
23        # yes, this could be single line
24        if self.size > other.size:
25            return True
26        else:
27            return False
28
29    def foo(i: int = 5) -> None:
30        """
31        Here is some random function with comment string
32        """
33        SOME_CONSTANT = 42 # constants are recognized too!
34        print(f"the constant is {SOME_CONSTANT}.", end="\n\n")
35        print("input i: ", i)
36        return None
37
38    foo(8) # actually call the function
39    circle = Shape(size=3, color="red") # call some constructors
40    square = Shape(size=5)
41    if circle.is_larger_than(square):
42        print(f"the {circle.color} circle is larger than {square.color} square")
43    else:
44        print(f"the {circle.color} circle is smaller than {square.color} square")

```

Listing 2: Example - Python (TreeSitter powered highlighting)

```

1 from math import cos
2 # Class with magic methods and inheritance
3 class Shape:
4     """
5     This is doc comment for Shape with some escape sequence \t\t in it.
6     Second line here.
7     """
8     def __init__(self, size: int, color: str = "black"):
9         self.color = color
10        self.size = abs(size)
11        print(f"creating {self.color} shape of size: ", self.size)
12        if self.size < 5:
13            print("shape is quite small")
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15        def __str__(self) -> str:
16            return f"{self.color} shape" # here some direct string formatting
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18        def truthy(self, a: int) -> bool:
19            print(f"foo\t{a}\tbar") # here some more string shenanigans
20            return True
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22        def is_larger_than(self, other: "Shape") -> bool:
23            # yes, this could be single line
24            if self.size > other.size:
25                return True
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33        SOME_CONSTANT = 42 # constants are recognized too!
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35        print("input i: ", i)
36        return None
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38    foo(8) # actually call the function
39    circle = Shape(size=3, color="red") # call some constructors
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41    if circle.is_larger_than(square):
42        print(f"the {circle.color} circle is larger than {square.color} square")
43    else:
44        print(f"the {circle.color} circle is smaller than {square.color} square")

```

Listing 2: Example - Python (minted powered highlighting)

```

1 use std::collections::HashMap;
2 use std::ops::{Add, Mul};
3
4 #[derive(Debug)]
5 struct Point<T> {
6     x: T,
7     y: T,
8 }
9
10 impl<T> Point<T> {
11     fn new(x: T, y: T) → Self {
12         Point { x, y }
13     }
14 }
15
16 #[derive(Debug)]
17 enum Shape {
18     Circle(f64),
19     Rectangle(f64, f64),
20     Triangle(f64, f64, f64),
21 }
22
23 fn area(shape: Shape) → f64 {
24     match shape {
25         Shape::Circle(radius) ⇒ std::f64::consts::PI * radius.powi(2),
26         Shape::Rectangle(width, height) ⇒ width * height,
27         Shape::Triangle(a, b, c) ⇒ {
28             let s = (a + b + c) / 2.0;
29             (s * (s - a) * (s - b) * (s - c)).sqrt()
30         }
31     }
32 }
33
34 fn main() {
35     let mut scores = HashMap::new();
36     scores.insert("Alice", 95);
37     scores.insert("Charlie", 85);
38     println!("Scores: {:?}", scores); // here is some comment
39
40     let point = Point::new(10, 20);
41     println!("Point: {:?}", point);
42
43     let circle = Shape::Circle(5.0);
44     let rectangle = Shape::Rectangle(4.0, 6.0);
45     let triangle = Shape::Triangle(3.0, 4.0, 5.0);
46
47     println!("Circle area: {}", area(circle));
48     println!("Rectangle area: {}", area(rectangle));
49
50     let numbers = [1, 2, 3, 4, 5];
51     println!("Sum: {}", numbers.iter().sum::<i32>());
52 }

```

Listing 3: Example - Rust (TreeSitter powered highlighting)

```

1 use std::collections::HashMap;
2 use std::ops::{Add, Mul};
3
4 #[derive(Debug)]
5 struct Point<T> {
6     x: T,
7     y: T,
8 }
9
10 impl<T> Point<T> {
11     fn new(x: T, y: T) → Self {
12         Point { x, y }
13     }
14 }
15
16 #[derive(Debug)]
17 enum Shape {
18     Circle(f64),
19     Rectangle(f64, f64),
20     Triangle(f64, f64, f64),
21 }
22
23 fn area(shape: Shape) → f64 {
24     match shape {
25         Shape::Circle(radius) ⇒ std::f64::consts::PI * radius.powi(2),
26         Shape::Rectangle(width, height) ⇒ width * height,
27         Shape::Triangle(a, b, c) ⇒ {
28             let s = (a + b + c) / 2.0;
29             (s * (s - a) * (s - b) * (s - c)).sqrt()
30         }
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32 }
33
34 fn main() {
35     let mut scores = HashMap::new();
36     scores.insert("Alice", 95);
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38     println!("Scores: {:?}", scores); // here is some comment
39
40     let point = Point::new(10, 20);
41     println!("Point: {:?}", point);
42
43     let circle = Shape::Circle(5.0);
44     let rectangle = Shape::Rectangle(4.0, 6.0);
45     let triangle = Shape::Triangle(3.0, 4.0, 5.0);
46
47     println!("Circle area: {}", area(circle));
48     println!("Rectangle area: {}", area(rectangle));
49
50     let numbers = [1, 2, 3, 4, 5];
51     println!("Sum: {}", numbers.iter().sum::<i32>());
52 }
53

```

Listing 3: Example - Rust (minted powered highlighting)