

# JavaScript Functions

Every Developer  
Should  
Know 🚀

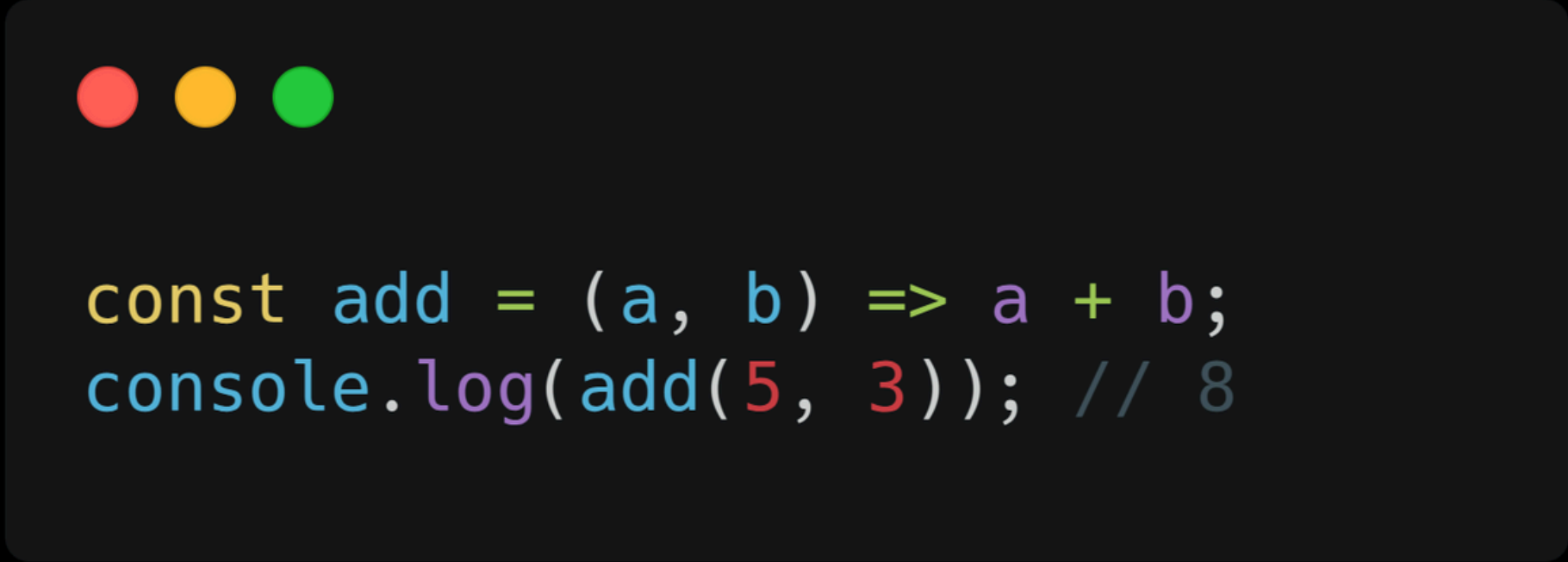


[@avinashsah995](https://twitter.com/avinashsah995)



# Arrow Function (=>)

- **What it does:** A concise way to write functions using the => syntax.
- **Use case:** When you need a short and readable function, especially for callbacks.



```
const add = (a, b) => a + b;  
console.log(add(5, 3)); // 8
```



# Named Function

- **What it does:** A function with a specific name that can be reused and referenced.
- **Use case:** When you need to define reusable functions in your code.




```
function greet(name) {  
  return `Hello, ${name}!`;  
}  
console.log(greet("Avinash")); // Hello, Avinash!
```

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# Anonymous Function

- **What it does:** A function without a name, often used in callbacks.
- **Use case:** When you need a function temporarily without naming it.



```
setTimeout(function () {  
    console.log("This runs after 2 seconds");  
}, 2000);
```



# Immediately Invoked Function Expression (IIFE)

- **What it does:** A function that executes immediately after being defined.
- **Use case:** When you need to run a function once without polluting the global scope.



```
(function () {  
    console.log("This runs immediately!");  
})();
```



# Higher-Order Function


- **What it does:** A function that takes another function as an argument or returns one.
- **Use case:** When working with functions like `.map()`, `.filter()`, or `.reduce()`.

```
function operate(a, b, operation) {  
  return operation(a, b);  
}  
  
const multiply = (x, y) => x * y;  
console.log(operate(5, 3, multiply)); // 15
```



# Callback Function

- **What it does:** A function passed as an argument to another function, which is then executed later.
- **Use case:** When handling asynchronous operations or event listeners.

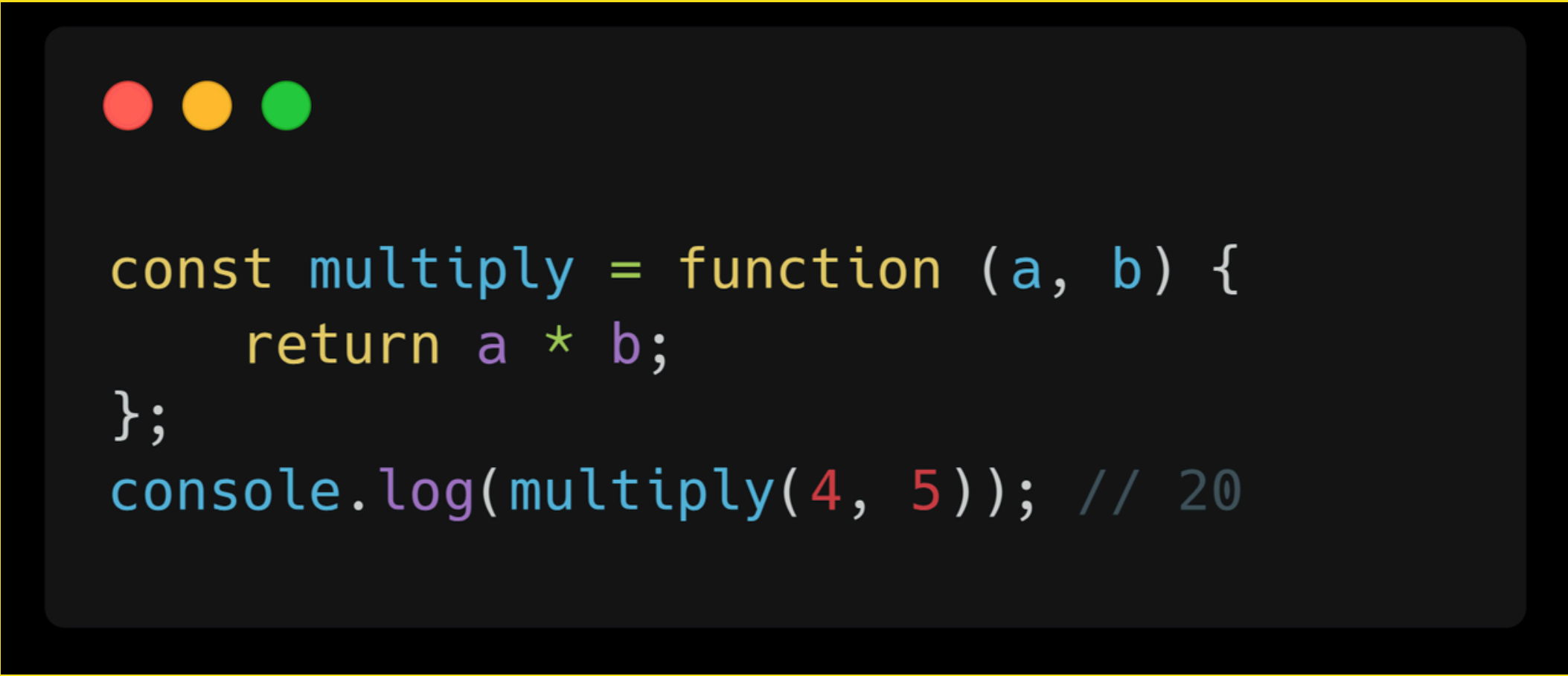


```
const multiply = function (a, b) {  
    return a * b;  
};  
console.log(multiply(4, 5)); // 20
```



# Function Expression

- **What it does:** A function stored in a variable.
- **Use case:** When you need a function but don't want to name it explicitly.




```
const multiply = function (a, b) {  
    return a * b;  
};  
console.log(multiply(4, 5)); // 20
```





# Recursive Function

- **What it does:** A function that calls itself to solve problems like factorials or tree traversal.
- **Use case:** When solving problems that involve repeated breakdowns into smaller subproblems.



```
function factorial(n) {  
    if (n === 1) return 1;  
    return n * factorial(n - 1);  
}  
console.log(factorial(5)); // 120
```



# Generator Function


- **What it does:** A function that can be paused and resumed using the yield keyword.
- **Use case:** When generating sequences of values lazily.

```
function* count() {  
  let i = 1;  
  while (true) {  
    yield i++;  
  }  
}  
  
const counter = count();  
console.log(counter.next().value); // 1  
console.log(counter.next().value); // 2
```



# Currying Function

- **What it does:** Breaks a function with multiple arguments into a series of unary (one-argument) functions.
- **Use case:** When you want to create reusable and modular functions.



```
const add = a => b => a + b;  
console.log(add(5)(3)); // 8
```

