

Function parameters and arguments

Let's dive deep into **Function Parameters vs Arguments** — a fundamental concept in JavaScript functions.

◆ What are Parameters and Arguments?

Term	Definition
Parameter	A variable in the function definition that acts as a placeholder.
Argument	The actual value passed to the function when it is invoked.

✓ Example:

```
function greet(name) {    // ← 'name' is a parameter
  console.log('Hello, ${name}');
}

greet("Abhi");           // ← "Abhi" is an argument
```

◆ Multiple Parameters & Arguments

```
function add(a, b) {
  return a + b;
}

console.log(add(5, 10)); // 5 and 10 are arguments, a and b are parameters
```

- You can define **multiple parameters** separated by commas.

- The number of **arguments** can be **less than, equal to, or more than** the number of parameters.
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◆ Too Few Arguments (Missing Arguments)

If you call a function with **fewer arguments** than parameters, the missing ones become `undefined`.

```
function greet(name, age) {  
  console.log(`Name: ${name}, Age: ${age}`);  
}  
  
greet("Abhi"); // Output: Name: Abhi, Age: undefined
```

◆ Too Many Arguments (Extra Arguments)

If you pass **more arguments** than parameters, the extras are ignored (unless accessed via the `arguments` object or rest parameters):

```
function sum(a, b) {  
  return a + b;  
}  
  
console.log(sum(5, 10, 15)); // 15 is ignored
```

◆ Arguments Object (for Regular Functions Only)

In **regular functions**, you can use the `arguments` object to access all passed arguments.

```
function showArgs() {  
  console.log(arguments);  
}
```

```
showArgs("Abhi", 25, "JS"); // Arguments(3) ['Abhi', 25, 'JS', callee: (...), Symbol.iterator: f]
```

⚠️ Not available in arrow functions.

◆ Use with Rest Parameters (Modern Alternative)

```
function logAll(...args) {  
  console.log(args);  
}  
  
logAll("JS", "Python", "C++"); // ['JS', 'Python', 'C++']
```

🧠 Important Notes

- Parameters only exist **inside** the function.
- You can give **default values** to parameters.
- JavaScript functions are **flexible** with the number of arguments.

✓ Summary Table

Term	Example	Notes
Parameter	<code>function greet(name)</code>	Declared in function definition
Argument	<code>greet("Abhi")</code>	Passed during function invocation
Missing Arg	<code>greet("Abhi")</code>	<code>undefined</code> if not handled
Extra Arg	<code>greet("Abhi", 20)</code>	Ignored unless explicitly accessed
<code>arguments</code>	<code>arguments[0]</code>	Only in regular functions
Rest Param	<code>...args</code>	Modern way to collect all arguments

Would you like to proceed with **Default Parameters** next?