

Operators in JavaScript

Understanding Types of Operators

A large, dark blue, abstract shape that starts from the bottom left and extends diagonally upwards towards the right, covering the bottom half of the slide.

Introduction to Operators

What are Operators?

- Symbols or keywords used to perform operations on variables and values.

Categories of Operators:

- Arithmetic Operators
- Assignment Operators
- Comparison Operators
- Logical Operators

Purpose: Manipulate and compare data in JavaScript.

Arithmetic Operators

Definition: Perform mathematical operations.

Operators:

- **+** Addition: `5 + 3 // 8`
- **-** Subtraction: `5 - 3 // 2`
- ***** Multiplication: `5 * 3 // 15`
- **/** Division: `5 / 3 // 1.6667`
- **%** Modulus: `5 % 3 // 2` (remainder)
- **++** Increment: `let x = 5; x++; // 6`
- **--** Decrement: `let x = 5; x--; // 4`

Assignment Operators

Definition: Assign values to variables.

Operators:

- `=` Simple Assignment: `let x = 10;`
- `+=` Addition Assignment: `x += 5; // x = x + 5`
- `-=` Subtraction Assignment: `x -= 5; // x = x - 5`
- `*=` Multiplication Assignment: `x *= 5; // x = x * 5`
- `/=` Division Assignment: `x /= 5; // x = x / 5`
- `%=` Modulus Assignment: `x %= 5; // x = x % 5`

Comparison Operators

Definition: Compare values and return a boolean result.

Operators:

- `==` Equal to: `5 == '5' // true` (type coercion)
- `===` Strict Equal to: `5 === '5' // false` (no type coercion)
- `!=` Not equal to: `5 != 3 // true`
- `!==` Strict Not equal to: `5 !== '5' // true`
- `>` Greater than: `5 > 3 // true`
- `<` Less than: `5 < 3 // false`
- `>=` Greater than or equal to: `5 >= 5 // true`
- `<=` Less than or equal to: `5 <= 3 // false`

Logical Operators

Definition: Perform logical operations on boolean values.

Operators:

- `&&` Logical AND: `(true && false) // false`
- `||` Logical OR: `(true || false) // true`
- `!` Logical NOT: `!true // false`

Type Conversion with Operators

Using `console.log` for Output

- Display results of operations and type conversions.

Using `innerHTML` to Display Results on Webpage

- Dynamically update HTML content.

Summary of Operators

Arithmetic Operators: Perform calculations.

Assignment Operators: Assign and modify values.

Comparison Operators: Compare values and return boolean.

Logical Operators: Perform logical operations.

Type Conversion: Using `console.log` and `innerHTML` to display and convert values.