Report Day: 4.3

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Learning Outcomes:

1. Introduction

JavaScript is a widely-used scripting language primarily for web development. Two of its core components for handling logic are **operators** and **conditional statements**. These allow developers to perform computations, compare values, and control the flow of programs based on specific conditions.

2. Operators:

Operators in JavaScript are symbols or keywords used to perform operations on operands (values and variables).

2.1 Arithmetic Operators

Used to perform mathematical operations:

Operator	Description	Example
+	Addition	5 + 3 → 8
-	Subtraction	5 - 3 → 2
*	Multiplication	5 * 3 → 15
/	Division	6 / 2 → 3
%	Modulus (Remainder)	5 % 2 → 1
**	Exponentiation	2 ** 3 → 8
++	Increment	a++
--	Decrement	a--

2.2 Assignment Operators

Used to assign values to variables:

Operator	Description	Example
=	Assign	x = 5
+=	Add and assign	x += 2
-=	Subtract and assign	x -= 1
*=	Multiply and assign	x *= 3
/=	Divide and assign	x /= 2

2.3 Comparison Operators

Used to compare two values:

Operator	Description	Example	Result
==	Equal to (loose)	5 == "5"	true
===	Equal to (strict)	5 === "5"	false
!=	Not equal (loose)	5 != "6"	true
!==	Not equal (strict)	5 !== "5"	true
>	Greater than	6 > 3	true
<	Less than	3 < 6	true
>=	Greater than or equal	5 >= 5	true
<=	Less than or equal	4 <= 5	true

2.4 Logical Operators

Used to combine or invert conditions:

Operator	Description	Example	Result
&&	Logical AND	true && false	false
`		`	Logical OR
!	Logical NOT	!true	false

```
<!DOCTYPE html>
<html>
<body>

<h1>JavaScript String Operators</h1>

<p>All conditional operators can be used on both numbers and strings.
</p>

<p id="demo"></p>

<script>
let text1 = "A";
let text2 = "B";
let result = text1 < text2;
document.getElementById("demo").innerHTML = "Is A less than B? " +
result;
</script>

</body>
</html>
```
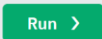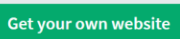
JavaScript String Operators

All conditional operators can be used on both numbers and strings.

Is A less than B? true

```
<!DOCTYPE html>
<html>
<body>

<h1>JavaScript Arithmetic</h1>
<h2>The * Operator</h2>

<p id="demo"></p>

<script>
let x = 5;
let y = 2;
let z = x * y;
document.getElementById("demo").innerHTML = z;
</script>

</body>
</html>
```

JavaScript Arithmetic

The * Operator

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3. Conditional Statements

Conditional statements allow different outcomes based on different conditions.

if Statement

Executes a block of code **only if** a specified condition is true.

if...else Statement

Executes one block of code **if condition is true**, another block **if false**.

 if...else if...else Ladder

Checks multiple conditions one by one.

switch Statement

A cleaner alternative to multiple if...else if when checking a single variable against different values.

4. Conclusion

Operators and conditional statements are fundamental to JavaScript programming. Operators allow manipulation and comparison of data, while conditionals enable decision-making in code. Mastering these concepts is crucial for developing logical and interactive applications.