

JavaScript

JavaScript Statements

JavaScript statements are combination of:

Values, Operators, Expressions, Keywords, and Comments.

Eg:

```
let x, y, z;  // Statement 1
x = 5;        // Statement 2
y = 6;        // Statement 3
z = x + y;    // Statement 4
```

JavaScript Comments

Single Line Comments

Single line comments start with `//`.

Eg.

```
// Change heading:
```

Multi-line Comments

Multi-line comments start with `/*` and end with `*/`.

Eg.

```
/*
The code below will change
the heading with id = "myH"
and the paragraph with id = "myP"
in my web page:
*/
```

JavaScript Operators

1. Arithmetic Operators

These operators perform basic arithmetic operations.

`+, -, *, /, %`

2. Assignment Operators

These operators assign values to variables.

`=, +=, -=, *=, /=, %=`

Eg.

```
let x = 5;
```

```
x += 2; // x is now 7
```

3. Comparison Operators

These operators compare two operands and return a Boolean value (true or false).

`==, ===, !=, !==, >, <, >=, <=`

Eg.

```
5 == '5'; // true
```

```
5 === '5'; // false
```

4. Logical Operators

These operators are used to combine two or more conditions.

`&&, ||, !`

Logical AND (&&): Returns true if both operands are true.

Logical OR (||): Returns true if one or both operands are true.

Logical NOT (!): Returns true if the operand is false and vice versa.

Eg.

```
true && false; // false
```

```
true || false; // true
```

```
!true; // false
```

6. String Operators

Concatenation (+): Concatenates (joins) two strings.

```
let str = "Hello" + " " + "World"; // "Hello World"
```

Concatenation Assignment (+=): Appends the right operand to the left operand.

```
let str = "Hello";
```

```
str += " World"; // "Hello World"
```

Conditional Statements

1. if Statement

The if statement executes a block of code if a specified condition is true.

```
if (condition) {  
    // code to be executed if the condition is true  
}
```

2. else Statement

The else statement executes a block of code if the same condition is false.

```
if (condition) {  
    // code to be executed if the condition is true  
} else {  
    // code to be executed if the condition is false  
}
```

3. else if Statement

The else if statement specifies a new condition to test if the first condition is false.

```
if (condition1) {  
    // code to be executed if condition1 is true  
} else if (condition2) {  
    // code to be executed if condition2 is true  
} else {  
    // code to be executed if both condition1 and condition2 are false  
}
```

Loop Controls

The For Loop

The for statement creates a loop with 3 optional expressions:

```
for (expression 1; expression 2; expression 3) {  
    // code block to be executed  
}
```

Eg.

```
for (let i = 0; i < 5; i++) {  
    text += "The number is " + i + "<br>";  
}
```

The While Loop

The while loop loops through a block of code as long as a specified condition is true.

```
while (condition) {  
    // code block to be executed  
}
```

Eg.

```
while (i < 10) {  
    text += "The number is " + i;  
    i++;  
}
```

The Do While Loop

The do while loop is a variant of the while loop. This loop will execute the code block once, before checking if the condition is true, then it will repeat the loop as long as the condition is true.

Eg.

```
do {  
    // code block to be executed  
}  
while (condition);  
  
do {  
    text += "The number is " + i;  
    i++;  
}  
while (i < 10);
```

Nested loops:

A loop inside a loop

