



Javascript

Javascript Introduction

- JavaScript is a widely-used programming language for web development.
- It enables interactivity and dynamic content in web pages.
- JavaScript runs on both the client-side (in web browsers) and the server-side (with Node.js).
- It has a C-style syntax and supports object-oriented and functional programming.
- JavaScript is a crucial technology for modern web applications.

DOM Manipulations

- How to change the content of HTML elements

```
document.write('<h1>Hello World</h1>');  
document.getElementById('demo').innerHTML = 'Mohammed Aslam';  
document.getElementsByClassName('demo_1')[1].innerHTML = 'XYZ';
```

```
document.getElementById(demo).style.color = 'red'
```

JavaScript Variables

Variables are Containers for Storing Data

Automatically

Using var

Using let

Using const

JavaScript Variables

- var: Function-scoped variable,
- let: Block-scoped variable, , can be reassigned.
- const: Block-scoped constant variable, cannot be reassigned.

Difference Between var, let and const

	Scope	Redeclare	Reassign
var	No	Yes	Yes
let	Yes	No	Yes
const	Yes	No	No

Data Types

Primitive Data Types:

immutable data types that represent single values.

Number, String, Boolean(true or false), Null and Undefined

Composite Data Types:

used to store collections of values or objects.

Object and Array

Operators

Arithmetic Operators:

let x = 5 + 5

+

-

*

**

/

%

++

--

Assignment Operators:

=

x = y

x = y

+=

x += y

x = x + y

-=

*=

/=

%=

**=

Comparison Operators

==	equal to
===	equal value and equal type
!=	not equal
!==	not equal value or not equal type
>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to
?	ternary operator

Conditionals

- if - Execute code if condition is true
- else - Execute code if condition is false
- else if - to specify a new condition
- switch - Use the switch statement to select one of many code blocks to be executed.

Loops

- for - loops through a block of code a number of times
- for/in - loops through the properties of an object
- for/of - loops through the values of an iterable object
- while - loops through a block of code while a specified condition is true
- do/while - also loops through a block of code while a specified condition is true

Arrays

- Collection of data
- Creating an Array: `const array_name = [item1, item2, ...];`
- JavaScript Keyword `new` - `const cars = new Array("Saab", "Volvo", "BMW");`
- Accessing Array Elements - `let car = cars[0];`
- Arrays are Objects -
`const person = {firstName:"John", lastName:"Doe", age:46};`

Arrays methods

- Array length - `array.length`;
- Array to String - `array.toString()` or `join(' * ')`
- Remove Last Element - `pop()`
- Add Element Last - `array.push("Value");`
- Remove First Element - `array.shift();`
- Add First Element - `array.unshift("value");`
- Changing Elements - `array[0] = "Value";`
- Delete - `delete fruits[0];`
- Merging (Concatenating) Arrays - `const array3 = array1.concat(array2, array3);`
- Flattening an Array- `myArr.flat();`
- Splicing - `array.splice(2, 0, "Value 1", "value 2")`
- Slicing - `fruits.splice(0, 1);`