

Js

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JavaScript (JS) is a versatile programming language commonly used for web development. It is a dynamic language meaning - the value of the variable can change to different datatypes, Here are the basics of JavaScript:

Used for

- Full Web / Mobile App
- Real time n/w App
- Command line tools
- Games

Runs on java script engine in browser but not its embedded into c++ program called as Node, so now we can run outside browser to develop full application.

Familiar IDE's

- VS code
- ATOM
- Sublime Text

Easy server:

- Live server

Node:

Node is a run time env for executing js code

- Rules
 - Using = in java script makes the object by reference invalid
 - Value and variable using :, Var abc = require('./efg')
 - Abc: abc -> here Abc refer to variable name and abc refer to the value
- Variables
 - var x;
 - x=10;
 - Datatypes supported : Numbers, Strings, Booleans, Objects, Arrays, etc.
 - It can be two types let and const, if its going to keep changing its let, if its final then const
- Operators
 - Arithmetic operators (+, -, *, /, %)
 - Comparison operators (==, ===, !=, !==, >, <, >=, <=)
 - Logical operators (&&, ||, !)
- Functions
 - Declaration: function add(a,b) { return a+b; }
 - Function call: var x = add(a,b);
- Objects
 - Var person = { name: "Josh", age: 30, isMinor: false};
- Arrays
 - var firstFruit = fruits[0];
 - var fruits = ["Apple", "Banana", "Orange"];
- Events

```
<button onclick="myFunction()">Click me</button>
<script>
    function myFunction() {
        alert("Button clicked!");
    }
</script>
```
- DOM Manipulation
 - var element = document.getElementById("myElement");

- `var element = document.getElementById("myElement");`
 - `element.innerHTML = "New content";`
- Asynchronous JS
 - Callbacks, promises, Await/Aync
- Error handing
 - Using try catch
- JSON
 - Serialization and Parsing - Interchanging data between server and client.
- Closures
 - Functions can have access to variables in their lexical scope, even after the scope has executed.
- ES6 + features:
 - Arrow Functions, Destructuring, Classes, Promises, Async/Await, etc.