

JavaScript Features

Feature	Description	Example
Lightweight	JavaScript is a lightweight scripting language that runs in the browser without needing heavy resources.	Runs directly in a browser without installation.
Interpreted	JavaScript is executed line-by-line (interpreted) instead of being compiled.	No need to compile before running.
Case-Sensitive	JavaScript treats uppercase and lowercase letters differently.	<code>var Name = "John";</code> is different from <code>var name = "John";</code>
Dynamic Typing	Variables do not have fixed data types; they can hold any value.	<code>let x = 10; x = "Hello";</code> (No type declaration needed)
Prototype-Based	Uses prototypes instead of traditional class-based inheritance.	Objects inherit properties from prototypes.
Object-Oriented	JavaScript supports objects and OOP concepts like encapsulation and inheritance.	<code>let person = {name: "John", age: 30};</code>
Multi-Paradigm	Supports functional, procedural, and object-oriented programming styles.	Can use functions, objects, or procedural code.
Event-Driven	Reacts to user actions like clicks, key presses, etc.	<code>document.onclick = function() { alert("Clicked!"); };</code>
Single-Threaded	JavaScript runs on a single thread but supports	Uses callbacks and promises for async tasks.

Asynchronous Support	asynchronous programming. Uses <code>setTimeout</code> , <code>Promises</code> , and <code>async/await</code> for asynchronous operations.	<pre>setTimeout(() => console.log("Hello"), 1000);</pre>
Client-Side & Server-Side	Can run both in browsers (frontend) and on servers (using Node.js).	<pre>console.log("Hello World");</pre> (Runs in browser and Node.js)
Platform-Independent	Can run on any OS or browser without modification.	Works on Windows, macOS, Linux, Android, etc.
DOM Manipulation	JavaScript can interact with and modify HTML & CSS dynamically.	<pre>document.getElementById("demo").innerHTML = "Hello";</pre>
Built-in Functions	Has many built-in functions like <code>Math</code> , <code>Date</code> , <code>JSON</code> , etc.	<code>Math.random()</code> generates a random number.
Supports AJAX	Allows fetching data from servers without reloading the page.	<pre>fetch("https://api.example.com/data")</pre>