

What Is JavaScript?

JavaScript is a scripting language that is one of the three core languages used to develop websites. Whereas HTML and CSS give a website structure and style, JavaScript lets you add functionality and behaviors to your website, allowing your website's visitors to interact with content in many imaginative ways.

JavaScript is primarily a client-side language, meaning it runs on your computer within your browser. However, more recently the introduction of Node.js has allowed JavaScript to also execute code on servers.

JavaScript is a cross-platform, object-oriented scripting language used to make web pages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.).

JavaScript Origins

The early to mid-1990s was an important time for the internet. Key players like Netscape and Microsoft were in the midst of browser wars, with Netscape's Navigator and Microsoft's Internet Explorer going head to head.

In September 1995, a Netscape programmer named **Brandon Eich** developed a new scripting language in just 10 days. It was originally named Mocha, but quickly became known as LiveScript and, later, JavaScript.

Why Study JavaScript?

JavaScript is one of the 3 languages all web developers must learn:

1. HTML to define the content of web pages
2. CSS to specify the layout of web pages
3. JavaScript to program the behavior of web pages

How JavaScript Works

The source code is passed through a program called a compiler, which translates it into byte-code that the machine understands and can execute. In contrast, JavaScript has no compilation step. Instead, an interpreter in the browser reads over the JavaScript code, interprets each line, and runs it.

JavaScript Syntax

The syntax of JavaScript is the set of rules that define a correctly structured JavaScript program.

JavaScript Values

The JavaScript syntax defines two types of values:

- Fixed values
- Variable values

Fixed values are called Literals.

Variable values are called Variables.

JavaScript Literals

The two most important syntax rules for fixed values are:

1. Numbers are written with or without decimals:
2. Strings are text, written within double or single quotes:

JavaScript Comments

JavaScript comments can be used to explain JavaScript code, and to make it more readable.

JavaScript comments can also be used to prevent execution, when testing alternative code.

Single Line Comments

Single line comments start with **//**.

Any text after **//** and down to the end of the line will be ignored by JavaScript compiler and engine (it will not be executed).

Multi-line Comments

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

Any text between **/*** and ***/** will be ignored by JavaScript.

This example uses a multi-line comment (a comment block) to explain the code:

Embedding Script in HTML File

JavaScript can be implemented using JavaScript statements that are placed within the **<script>... </script>** HTML tags in a web page.

You can place the **<script>** tags, containing your JavaScript, anywhere within your web page, but it is normally recommended that you should keep it within the **<head>** tags.

The **<script>** tag alerts the browser program to start interpreting all the text between these tags as a script. A simple syntax of your JavaScript will appear as follows.

What are Variables?

Variables are containers for storing data.

4 Ways to Declare a JavaScript Variable:

- Using var
- Using let
- Using const
- Using nothing