

HISTORY OF JAVASCRIPT

In 1995 there was a browser called Netscape Navigator. It was developed by Brendan Eich. He thought to add a programming language, to make the web pages interactive. He created JavaScript in 10 days.

1st name of Js -> Mocha

2nd name of JS -> LiveScript

In 1995, Java was very popular ; So Brendan changed the name of LiveScript to JavaScript. It is different from Java. (Java is used for making android and desktop apps).

In 1996, Internet Explorer was made. They created a programming language called Jscript.

JavaScript and Jscript have similar features, but users got confused which programming lang they should use. So they both went to ECMA. (European Computer Manufacture Association).

ECMA is a standard organization where it decides what to show on browser and its behavior.

EcmaScript and JavaScript are same

Ecma Script is the updated version of JavaScript

Versions of EcmaScript

ES1: 1997

ES5: 2009

ES6: 2015(Biggest update of JavaScript)

ES7: 2016

ES8:2017

TC(Technical Community)39-> decide what features should be added in JS.

1. JS is backward compatible
2. JS code written can work for ages

ECMA – 262 is the official standard name of JS

Latest version of JS is ES2024

GETTING STARTED WITH ECMASCRIPT

ECMA Script is a popular programming language that has wide range of applications and its light weighted

It was previously used for making web pages interactive, such as forms, validations and animations. These days, it is also used in other areas such as

1. Server side development
2. Mobile app development
3. Desktop apps etc.

Because of its wide range of applications, you can run JS in several ways

1. console tab in web browser
2. Using node JS
3. By creating web pages

How to open console tab

On your browser, right click and select inspect. Press on console.

COMPILER vs INTERPRETER

A compiler is a program that translates the entire source code of high level programming language (C, C++) into machine/binary code all at once. This generated machine code is a separatable executable file which can then be run independently of the compiler. Errors if any are detected during the compilation process.

Ex languages: C, C++, Java

Output: Standalone executable or binary file

An interpreter is a program that reads, analyzes and executes the source code of a high level language (python) line by line. It does not generate a separate executable; instead, the code is executed immediately. Errors are encountered during runtime as the code is being interpreted.

Example languages: Python, JS

Output: No separate executable; results are produced on the fly

Interpreter follows code execution from top to bottom

Trying simple math operations in console

3+5

10-3

`6*7`

`25/5`

`Math.pow(2,3)`

`Math.sqrt(64)`

`Math.floor(Math.random() * 10); //Random integer from 0-10`

`Math.random() //Random integer from 0-1`

Node.js (new page)

Node.js® is a free, open-source, cross-platform JavaScript run-time environment—
that lets developers write command line tools and server-side scripts outside of a browser.

Current version of Node.JS is v23.1.0

LTS version is 20.18.0

Node.js was introduced to solve the limitations in web apps by providing a server side runtime to execute JavaScript

In 2009 Ryan Dahl introduced Node.js at JSConf

Built on google's v8 JS engine (in chrome)

Designed to address C10K problem(handling 10,000 connections concurrently by using non-blocking, event-driven I/O.)

Core Principles :-

1. Node.js operates with a single threaded event loop to handle concurrent connections efficiently.

2. It uses a non blocking asynchronous approach for handling operations like file I/O, HTTP requests and database queries

2010: npm Released :-

1. npm(Node Package Manager) was released to help devs share and manage libraries easily
2. It became the de facto package manager for Node.js

2020-Present: Expansion and Ecosystem Growth

Node.js powers server side applications, API's, real-time-systems and even desktop apps

Node's ecosystem has grown to millions of packages available through npm.

How to set up and download Node.js in Windows (new page)

Go to nodejs.org

Click download LTS 20.18.0 – LTS is more stable; recommended for most users.

Current: Includes latest features but maybe less stable.

How to set up and download Node.js in Ubuntu

Visit [node.js/org](https://nodejs.org)

Click on Download

Select your version Linux using nvm

Open your terminal and execute the following:

1. Curl -o- <https://raw.githubusercontent.com/nvm-sh/nvm/v0.40.0/install.sh> | bash

2. nvm install 20

After the above command close the terminal and re-open.

3. node -v

JS engines new page

JavaScript Engine: V8

Browsers: Chrome, Edge, Brave, Opera

Firefox

Javascript engine: SpiderMonkey

Browser: Firefox

Apple Safari

JS Engine: JavaScriptCore (JSC) /Nitro

Browser: Safari