

What is JavaScript?

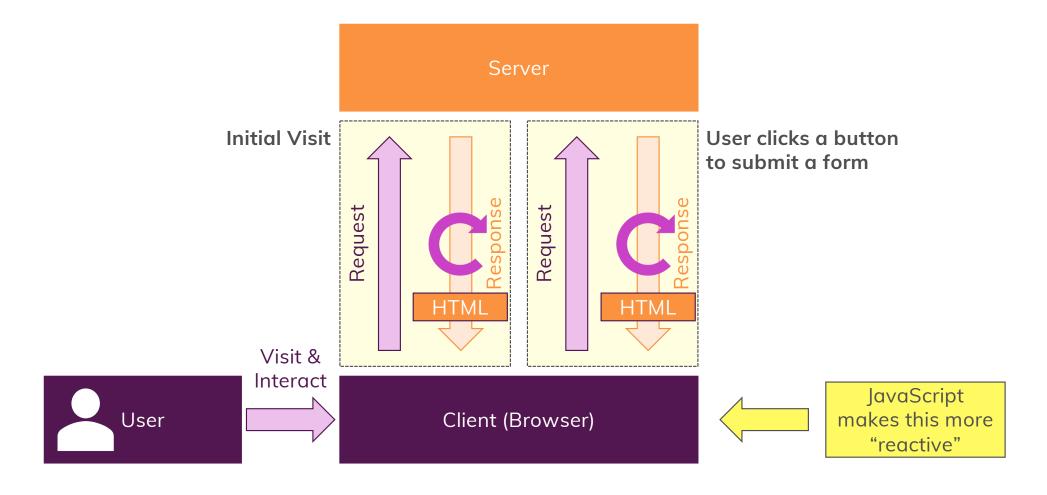
JavaScript is a **dynamic**, **weakly typed** programming language which is **compiled at runtime**. It can be executed as part of a webpage in a browser or directly on any machine (**"host environment"**).

JavaScript was created **to make webpages more dynamic** (e.g. change content on a page directly from inside the browser). Originally, it was called LiveScript but due to the popularity of Java, it was renamed to JavaScript.

JavaScript is totally independent from Java and has nothing in common with Java!



How Do Webpages Work?





JavaScript Runs On A Host Environment

Browser-side

JavaScript was invented to create more dynamic websites by executing in the browser!

JavaScript can manipulate the HTML code, CSS, send background Http requests & much more

JavaScript CAN'T access the local filesystem, interact with the operating system etc

"Other" (e.g. Server-side)

Google's JavaScript Engine (V8) was extracted to run JavaScript anywhere (called "Node.js")

Node.js can be executed on any machine and is therefore often used to build web backends (server-side JavaScript)

Node.js CAN access the local filesystem, interact with the operating system etc. It CAN'T manipulate HTML or CSS



A Brief Overview Of The JavaScript History

1995 Netscape introduces "LiveScript" / "JavaScript"

1996 Microsoft releases its own version for IE

Late 1996

JavaScript submitted to ECMA International to start standardization

Standardization efforts, Microsoft didn't really join and support the standardized JS version though

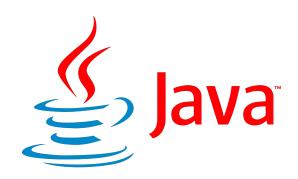
Huge progress in JavaScript ecosystem, Microsoft eventually joined forces

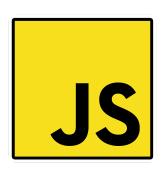
1997 - 2005

2006 - 2011



JavaScript and Java





Object-oriented strongly types

Totally independent programming languages with different syntax and principles

Flexible, weakly types

JavaScript was named JavaScript to "sound cool"

Java does NOT run in the browser, JavaScript does

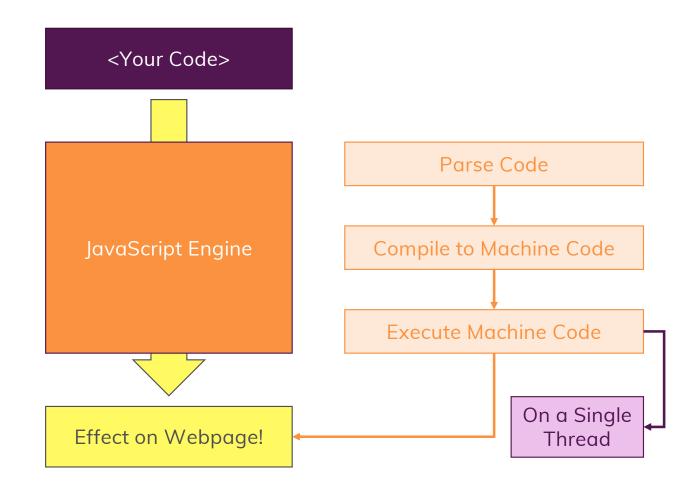


How Is JavaScript Executed?

Built-into the Browser

V8 (Chrome)

SpiderMonkey (Firefox)





Dynamic? Weakly Typed?

Dynamic, interpreted Programming Language



Weakly Typed Programming Language

Not pre-compiled, instead parsed and compiled "on the fly" (e.g. in the browser)

You don't define that some variable has to hold a certain value (e.g. a number)

Data types are assumed (e.g. assigned to

variables) automatically

Code evaluated and executed at runtime

Data types are not set in stone but can change

Code can change at runtime (e.g. type of a variable)



What's In This Course?

Getting Started
Language Basics, Base Syntax
Efficient Development &
Debugging
Control Structures (if, Loops, ...)
Behind the Scenes of JS
A Closer Look at Functions
DOM Basics
Arrays & Iterables
Objects

Classes & OOP
Constructor Functions &
Prototypes
More about DOM & Browser
APIs
Events
Functions Deep Dive
More about Numbers & Strings
Asynchronous Code
Background Http (Ajax)

3rd Party Libraries
JavaScript Modules
Tooling (Webpack, Babel, ...)
Working with Browser Storage
Browser Support
JavaScript Frameworks
Meta-programming
NodeJS Introduction
Security
Deployment
Performance Optimizations &
Memory Leaks

Core Basics

Building a Strong Foundation

Advanced Concepts