

JavaScript

Features

आज बहुत सारे
Tech jargons
सुन रहे हैं ! 😊

What is Java script?

JavaScript is a lightweight interpreted (or just in time compiled) programming language with first class functions .

V8 Engine (written in C++)

parsing

source code $\xrightarrow{\text{parsed}}$ Abstract Syntax Tree (AST)

Ignition Interpreter

AST \rightarrow Byte Code

Byte code is an intermediate representation that is easier to execute than raw JavaScript Source code.

SpiderMonkey Compiler

Byte Code \rightarrow M/C code

It is a non optimized compiler for frequently executed functions, improving performance

Maglev Compiler It is mid-tier compiler
It applies optimizations to
the machine code generated by SpiderMonkey

TurboFan Compiler It is the main compiler
in V8. It takes the byte code and applies
advanced optimizations to generate
highly efficient m/c code, improving
execution speed.

CPU The optimized m/c code is
executed by the CPU

V8 engine is a base for node.js, MongoDB

Where JavaScript can be used?

While it is most well-known as the scripting language for web pages, non-browser environments also use it such as Node.js.

JavaScript started as a client site scripting language for web browsers, but now has evolved into a versatile language used in wide range of domains

JavaScript usage

1. Client side web development (Frontend)
2. Server side web development (Backend)
3. Mobile app development
4. Desktop app development
5. Game development
6. Internet of things,
7. Browser extensions
8. Build tools and automation
9. Data visualisation
10. Machine learning

More technical jargons

JavaScript is a prototype based multi paradigm, single threaded, dynamic language, supporting object oriented, imperative, and declarative (eg functional programming) styles.

