

01:35

JavaScript Runtime Environment

The diagram illustrates the JavaScript Runtime Environment. It consists of a large container (red border) divided into two main sections. The left section, labeled 'JS Engine', contains a circle representing 'JS code'. The right section, labeled 'API', represents the application programming interface. Below the 'JS Engine' section, there is a circular arrow indicating a process or flow. To the right of this arrow, there are two stacked boxes labeled 'CQ' and 'MQ', likely representing different types of queues or data structures.

05:48

List of ECMAScript engines

From Wikipedia, the free encyclopedia

An **ECMAScript engine** is a program that executes source code written in a version of the ECMAScript language standard, for example, JavaScript.

These are new generation ECMAScript engines for web browsers, all implementing just-in-time compilation (JIT) or variations of that idea. The performance benefits for just-in-time compilation make it much more suitable for web applications written in JavaScript.

- Carakan:** A JavaScript engine developed by [Opera Software ASA](#),^[1] included in the 10.50^[2] release of the browser, until switching to V8 with Opera 15 (released in 2013).^{[3][4]}
- Chakra (JScript9):** A JScript engine used in [Internet Explorer](#). It was first previewed at MIX 10 as part of Explorer 9 Platform Preview.^[5]
- Chakra:** A JavaScript engine used in [Microsoft Edge](#).^[6]
- SpiderMonkey:** A JavaScript engine in Mozilla Gecko applications, including [Firefox](#). The engine currently, IonMonkey compiler and OdinMonkey optimization module, has previously included the TraceMonkey compiler (javascript JIT) and JägerMonkey.
- JavaScriptCore:** A JavaScript interpreter and JIT originally derived from KJS. It is used in the WebKit project applications such as [Safari](#). Also known as Nitro, SquirrelFish and SquirrelFish Extreme.^[7]
- JScript .NET:** A .NET Framework JScript engine used in ASP.NET based on Common Language Runtime Interop. Unfortunately support was dropped with .NET Core and CoreCLR so its future looks questionable.

- Tamarin: An ActionScript and ECMAScript engine used in Adobe Flash.
- V8: A JavaScript engine used in Google Chrome, Node.js, Deno and V8.NET.
- Nashorn: A JavaScript engine used in Oracle Java Development Kit (JDK) since version 8.^[8]
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05:14

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- BESEN: A complete JIT-compiling implementation of ECMAScript Fifth Edition written in Objective-C.



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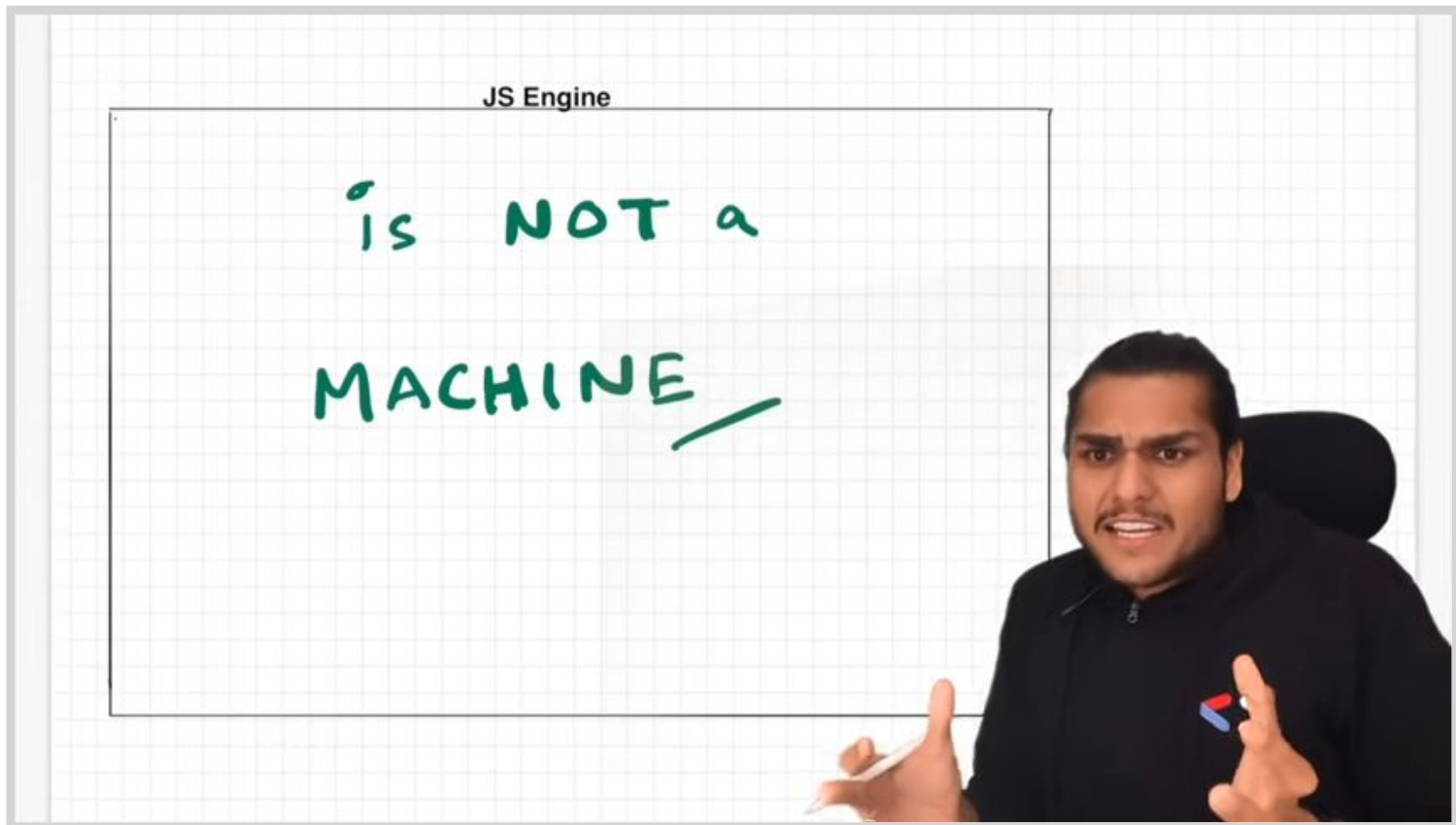
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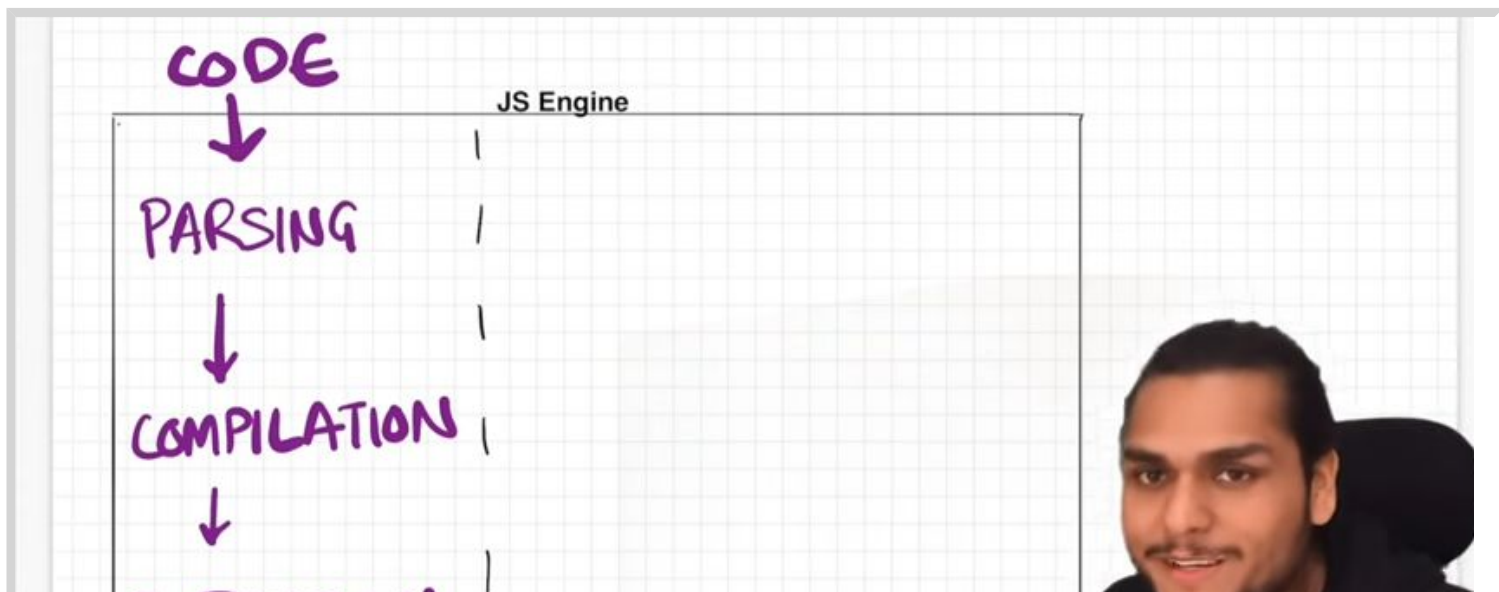
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it is normal program or code written in low level language.

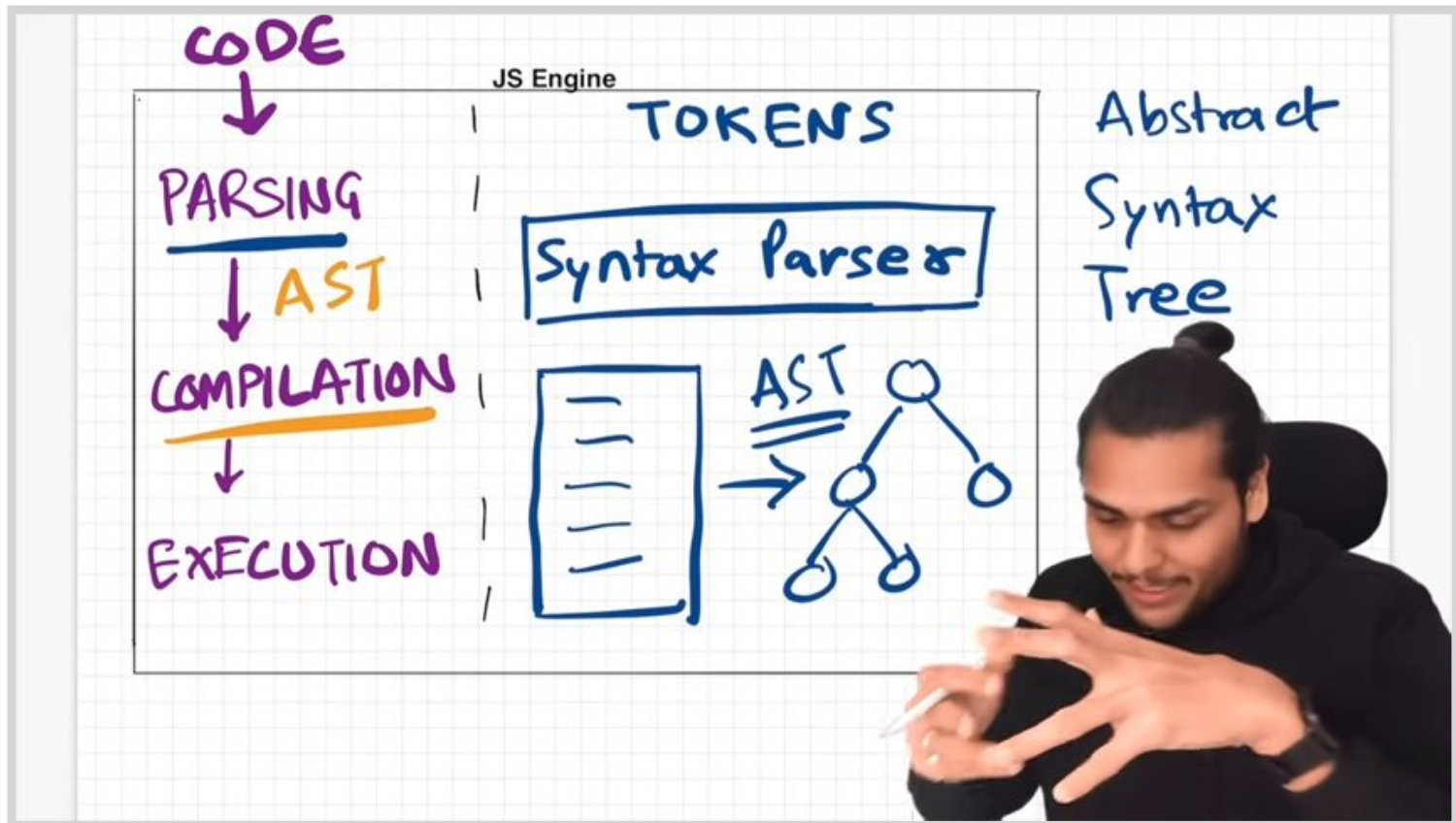
- Google V8 engine is written in C++

08:50



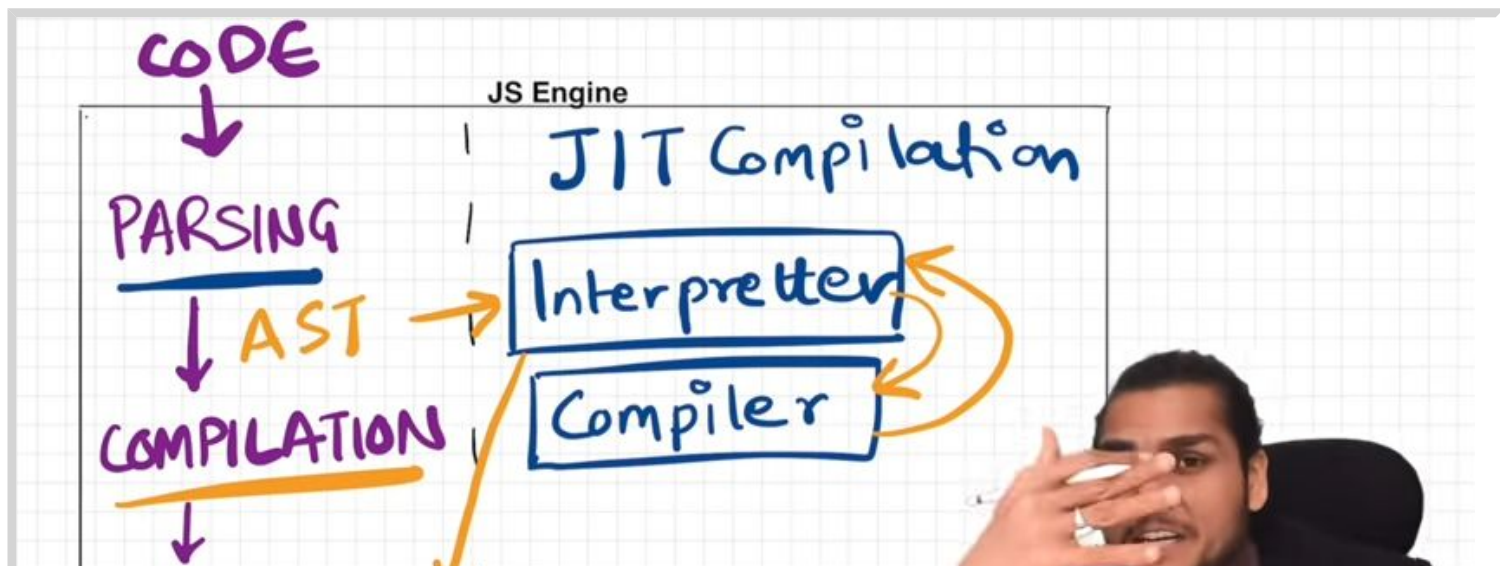
EXECUTION

11:55



JS behaves as an Interpreted Language as well as Compiled Language

16:12



EXECUTION

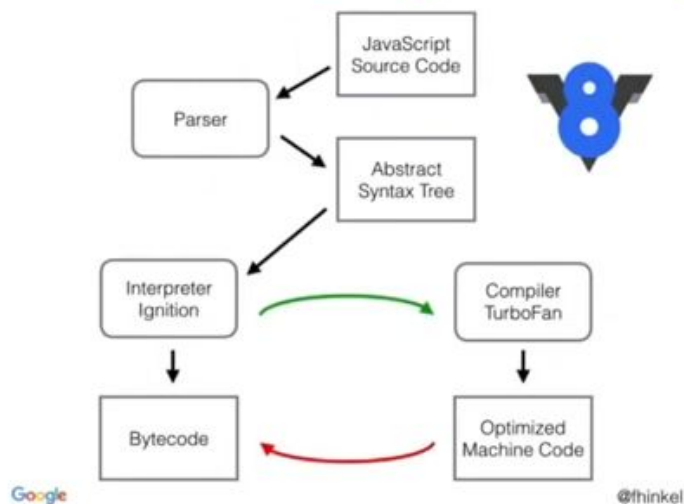
the job of compiler over here is to optimize the code as much as it can on the run time

- v8 - interpreter name is "ignition"

compiler name is "turbo"

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V8 JS Engine:



JS can be used as procedural language as well as functional language.

