



Node JS

- 1) What node is? ✓
- 2) What it is not?? ✓
- 3) Internals of node js ✓
- 4) how node js code is written? ✓
- 5) Chrome V8 engine
- 6) Internals of V8 engine

agenda



What is nodejs??



Nodejs is an open source, cross platform runtime environment.

What is a runtime env??

A diagram showing the word "Software" with an arrow pointing to the "env" in "env??". Below "env??", there is a red arrow pointing to the word "Browsers".

→ JS is a programming lang.

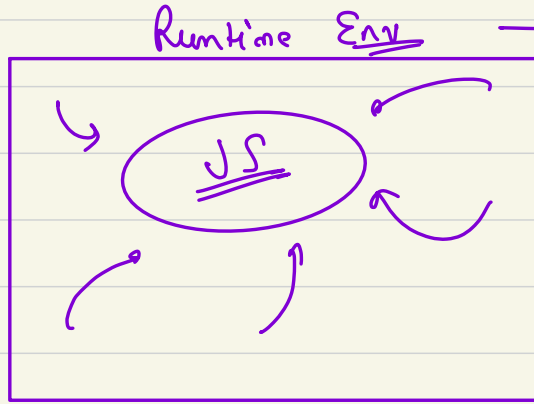
Times reading & modifying html
networking
Browsers

→ runtime env provide extra capabilities to JS.

A diagram showing a circle containing the text "JS" with an arrow pointing to the text "setTimeout, setInterval".

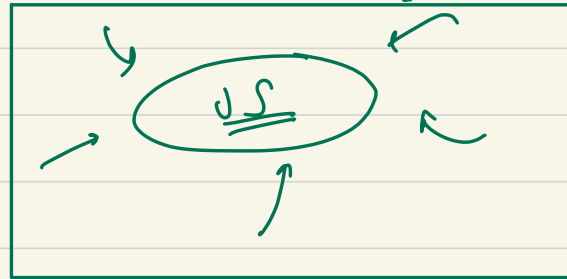
setTimeout, setInterval

↓
X access times



→ Browsers

↓
2009 → Ryan Dahl



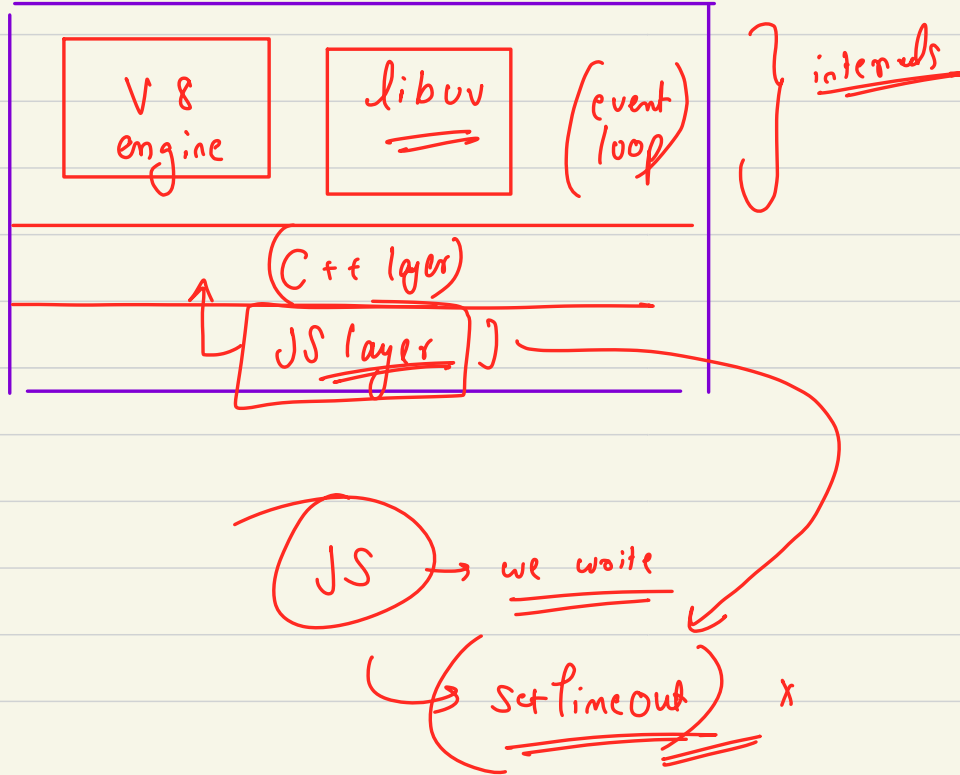
→ Node.js

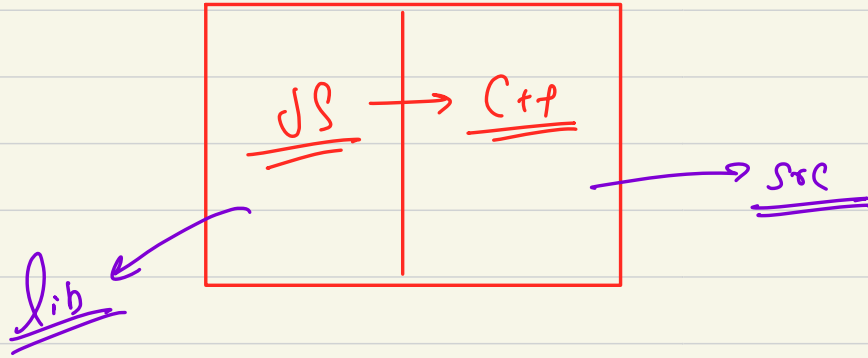
→ read/write files on
HDD

→ access processes
running on the RAM

→ timer
→ Network

Internals of node.js



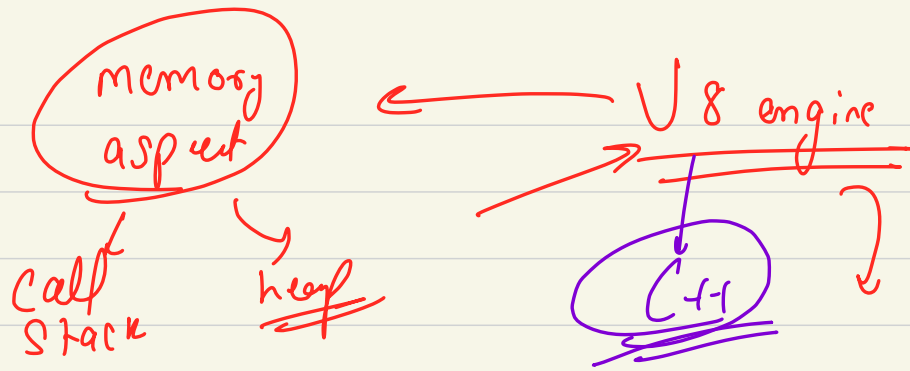


→ setTimeout (cb, 0)

time after which
cb should
be exec

0ms

updated → 1ms



JS engine

this make running js code possible in a machine

Components of V8 engine

f({name: ""})

Es

1) Parser → ~~FA~~

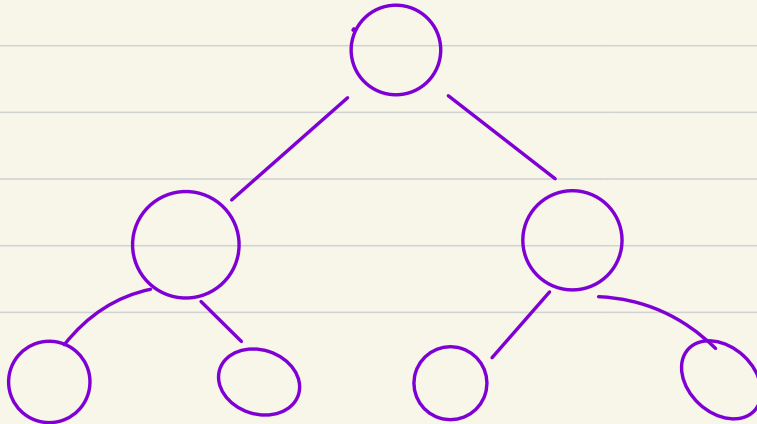
2) Interpreter → Ignition

3) Compiler → Turbofan → Crankshaft

optimization compiler

1) Parser takes the code, tokenizes it & creates AST
(Abstract Syntax tree)

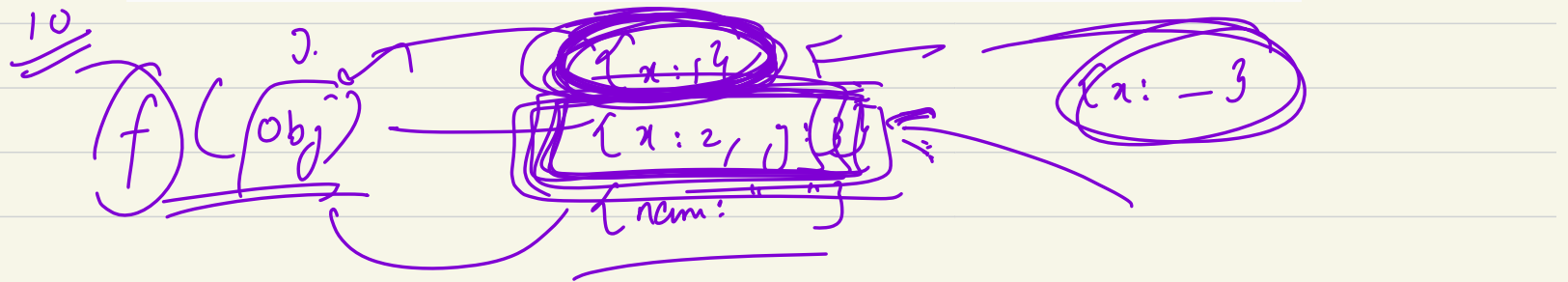
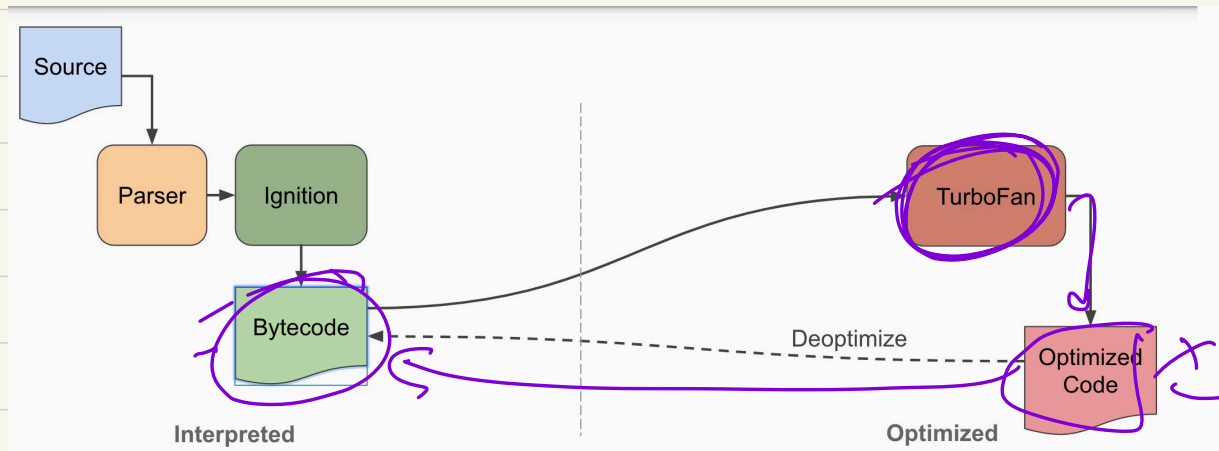
\sqcap
let x = 1 ; \rightarrow [let, x, =, 1, ;]



2) python interpreter converts ast to bytecode. ✓

↓
portable

after conversion, it also starts
saving your byte code.



→ VB engine also provides gc capabilities

