V8 engine does

Reads your code
compiles it to machine code using JIT
Executes it immediately
shows results in console

Just InTime Compi

Babel

Javascript compiler
converts modern Javascript (ES6 and JS
into plain Javascript (ES5) that all
browsers can understand.

Environment setup

CRA:-

React 3+
basic and minimal project
uses webpack to bundle all files together

```
npx create-react-app frontend1
```

VITE :-

React 4+ , uses ESBuild (written in Go) faster
Big and efficient packages

```
npm create vite@latest frontend1
```

We already have HTML, CSS and JS to build web apps - so why was react introdu

HTML, CSS and JS worked fine for static sites - but things got complicated when webpages became dynamic.
React uses components, virtual DOM, and state management to update UI effectively. Unlike plain JS, react automatically syncs data and UI without manual DOM changes

HTML webpage	React webpage
suitable for static websites	suitable for dynamic web apps
Directly manipulates real DOM (slow for large apps)	uses virtual DOM which updates only changed parts (faster)
Difficult to reuse UI code	Easy to reuse and maintain code
Renders once when loaded	renders automatically when state or props change

React	Angular
Javascript Library	Full fledged framework
Developed by Meta	Developed by google
uses Javascript with JSX	uses typescript by default
uses virtual DOM	uses real DOM but optimized with change detection
one way data binding	Two way data binding
component based library	mvc based framework (Model view controller)

Library	Framework
collection of prewritten code that helps you to perform specific task	A complete structure that provides everything needed to build application
call library function when needed	calls your code-it controls the flow
focused on specific functionality	provides complete app architecture
React, jQuery	Angular, Spring

Typescript

superset of Javascript developed by microsoft that adds static typing and advanced features to javascript

Evoluation

Nodejs → old angularjs → React → new angular
(Jsbased) (Typescript)