 Summary - Node Introduction

🧐 What is Node.js?

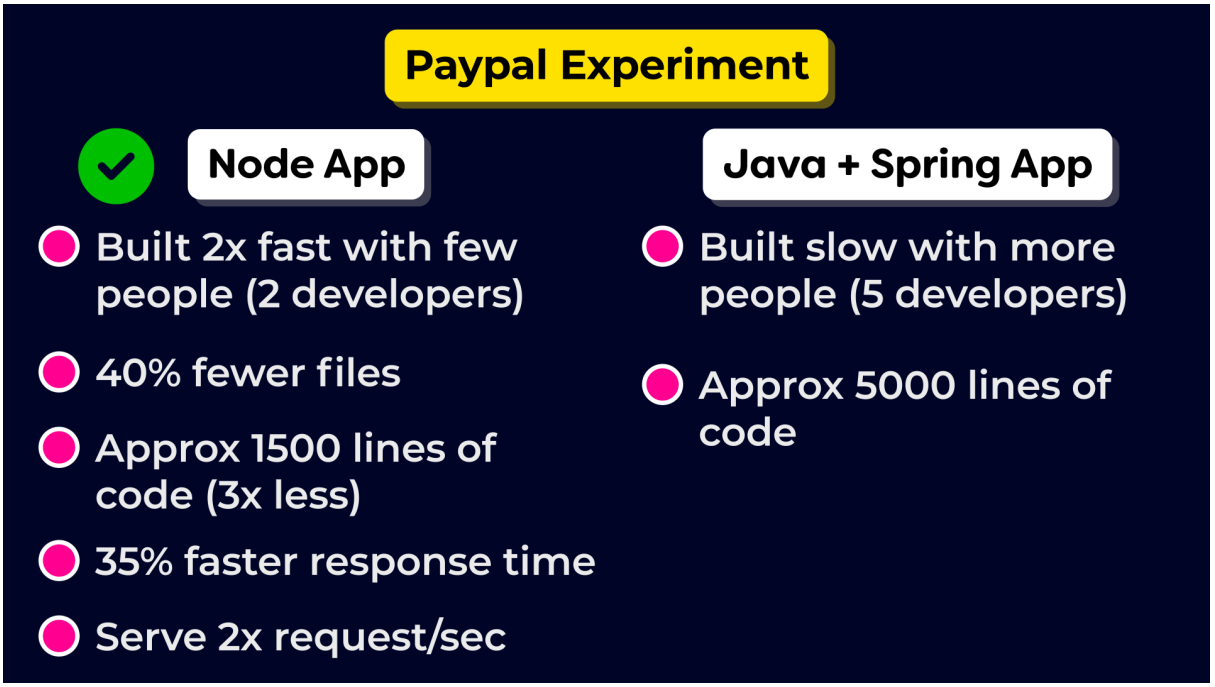
- Node Js is simply a **runtime environment** for running JavaScript code **outside of the browser.**
- It is not programming language or It is not framework. Node JS is a runtime environment.
- Before node.js we can run JavaScript code only inside our browser but with node.js we can run JavaScript code outside of the browser also.
- Also It is used for many years by very popular companies like Netflix, Paypal, Uber, LinkedIn etc.
- Node.js is very useful for creating fast, secure APIs.

🔌 What is an API?

- API stands for Application Programming Interface.
- API is used for sharing data between frontend to backend and backend to frontend.
- Basically It is a way for two programs communicate with each other.
- For example, In restaurant, if Customer want to order the food then you call waiter, give him order for food and then waiter will pass that order to chef.
- In this example, Customer is our frontend, chef or kitchen is our backend and waiter who help us to transfer data between these two is known as API.

🤯 Paypal Experiment

- They create their backend service using Node and also build the same service using Java + Spring. And result is here:



⚙️ How node.js works? Why node.js is fast?

- NodeJS is super fast is because it's non blocking or we can say Asynchronous nature of node js.
- In node we have single thread for handling request. So when one request arrived, node allocate single thread for that request.
- Now if that task can take time like finding something from database, then our single thread add that task in a list called event queue. and move to another request and start handling that request.
- This event queue will notify node when they gets data from the database and then our node will send that data to the request.
- So in this way our single thread can serve multiple users and that's why node js is a great option for data intensive or network related applications.
- Also don't use node.js for CPU intense applications.

💻 Installing Node.js in your system

- Head over to nodejs.org and download the stable version of nodejs and install it in your system.

- After installing you can check the nodejs version by using `node --version`

👨‍💻 Writing your first node code

- As we know node is used to run code outside of the browser. So in project create a new file index.js and write JavaScript code in it.
- To run this index.js file, write `node index.js` in terminal and hit enter. File will run.
- Also in Node.js, you cannot directly use DOM events or browser-specific events because Node.js runs on the server side, whereas the DOM (Document Object Model) and browser-specific events are part of the client-side JavaScript that interacts with the browser's interface.
- So that’s why we can’t access window, document or browser events like `click` or `DOMContentLoaded` in a Node.js environment.

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