Node.js Training

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Day #1

Agenda

- What is Node.js?
- Why Node.js?
- Node.js Architecture
- How Node Works?
- Install Node.js
- Hello World Program!
- Understand Closure

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What is Node.js?

Node.js is an open source and cross platform A runtime environment for executing JavaScript code outside of the browser.

Mostly, Node.js is used to build backend services.

Services also called API (Application Programming Interface).

API power a client application like Web App, Mobile App.

Client application talk to services (APIs) to store data, send emails etc.

Why Node.js?

- Great for prototyping the application & agile development

- Superfast & highly scalable services

- Used in production by large companies Uber, Paypal, Netflix, Walmart etc

- Used JavaScript

- Cleaner and more consistent codebase

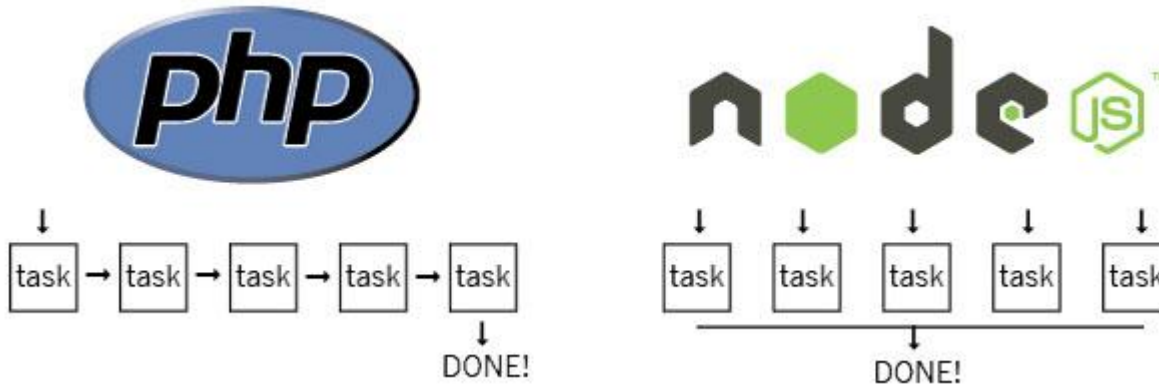- Large ecosystem of open source library

Node Architecture

- Before node JavaScript only used in Browser

- Every browser has JavaScript engine
- Microsoft Edge –> Chakra
- Firefox –> SpiderMonkey
- Chrome –>v8

- JS engine convert JavaScript code which computer can understand.

Node Architecture

- Till 2009 only way to execute JavaScript code was in browsers

- Ryan Dahl found a way to execute JS code outside of browser

- Used Chrome's v8 engine with C++ program to provide same runtime environment as browser

- Node & Browser's engine has few different objects (document in browser, fs in node, http in node)

How Node Works?

Synchronous (blocking) / Asynchronous (Non-blocking)

Install Node.js

Let's write first Node program!

Closure

A closure is a function having access to the parent scope. It preserve the data from outside.

A closure is an inner function that has access to the outer function's variable and parameters.

Each closure has three scope:
- Local scope
- Global scope
- Outer function's scope