

Full Stack Engineering

From entry to ~~mastery~~
quitting

The Text Book



left

Full Stack

Popular Stacks

- MEAN - MongoDB + Express + Angular + Node.js
- MERN - MongoDB + Express + React + Node.js
- Django - Django + Python + MySQL

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Node.js

A JavaScript runtime built on Chrome's V8 JavaScript engine



Node.js (cont'd)

- Cross-platform
- Language
 - JavaScript (ECMAScript)
 - TypeScript

Node.js (cont'd)

- Package system
 - Manifest
 - (`package.json`)
 - Dependency
 - Makefile
 - `node_modules`
 - Package manager (npm, yarn === pip)
 - ~1,894,242 packages on [npmjs.com](https://www.npmjs.com)

DevOps

A crash course

CI/CD

CI/CD Pipeline

- Continouse Integration
 - Merge regularly into a central repo
 - Automated Builds/Tests
- Continouse Delivery
 - Automatically depoly code changes

Lab 1

- Setup Node.js environment
 - Yarn
 - nvm (=== pyenv, optional)
- Demo 1: Simple HTTP Service
- Demo 2: Next.js

Starter Project: Build A Blog Site

- Basic DevOps
 - Build
 - Deploy
 - Operate
- Frontend Playground
 - Custom Theming

Static Vs Dynamic

- Dynamic Site
 - Dynamically generated (express.js, PHP)
 - 👍 Powerful
 - 👎 Costs (server) & harder to learn
- Static Site (HTML + CSS + JS + Assets) ✓
 - No backend (statically generated at build time)
 - Delivered as stored
 - 👍 Cheap (free hosting options) & easy to learn
 - 👎 Limited in features

Toolchain Options

- Static site generator
 - Compile Markdown -> HTML/JS/CSS
 - Jekyll
 - Hexo ✓
 - 👍 Ease of use
 - 👎 Limited in power

Toolchain Options

- Custom Build
 - Frameworks
 - CRA
 - Next.js
 - 👍 Powerful
 - 👎 More learning

Hosting

Deploy to public servers ([GitHub Pages](#) for free)

GitHub Pages

- Structure
 - Per user `username.github.io` -> `master`
 - <http://username.github.io>
 - Per project `project_a` -> `gh-pages`
 - http://username.github.io/project_a
- Workflow
 - Build site locally
 - Push to repo
 - Automatically deployed by GitHub

Hexo

1. `yarn add global hexo-cli`
2. `hexo init your-blog`
3. Writing `hexo new [title]`
4. Configure depoly options
5. `hexo clean && hexo deploy`

Lab 2

- Build a blog with Hexo
- Deploy to GitHub Pages

Lab 3

- Register a domain
- Resolve to GitHub Pages