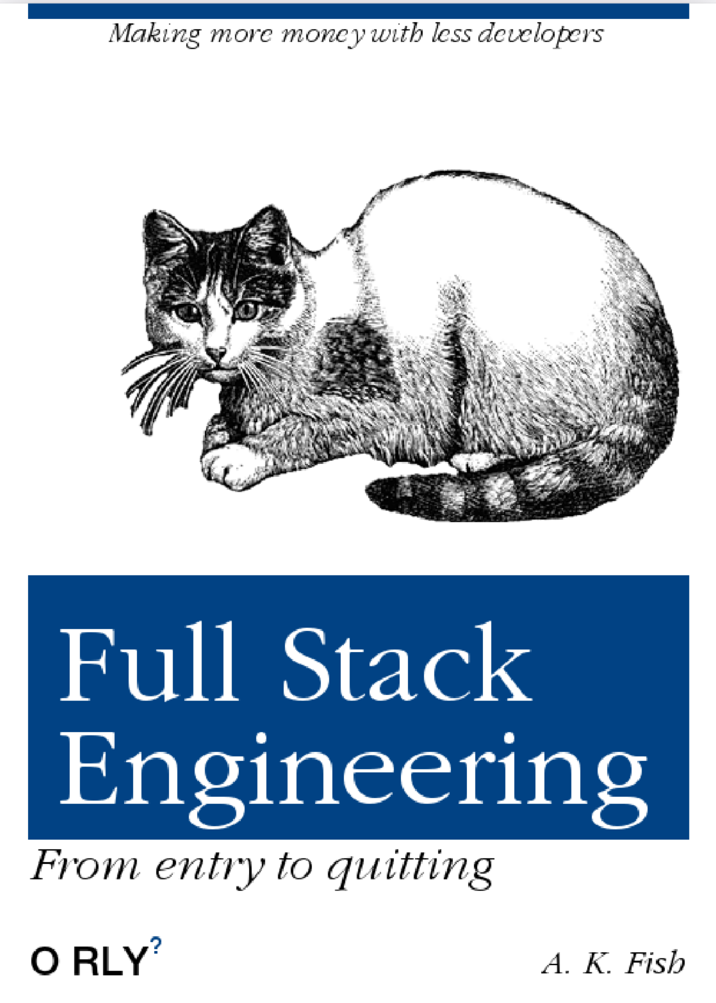
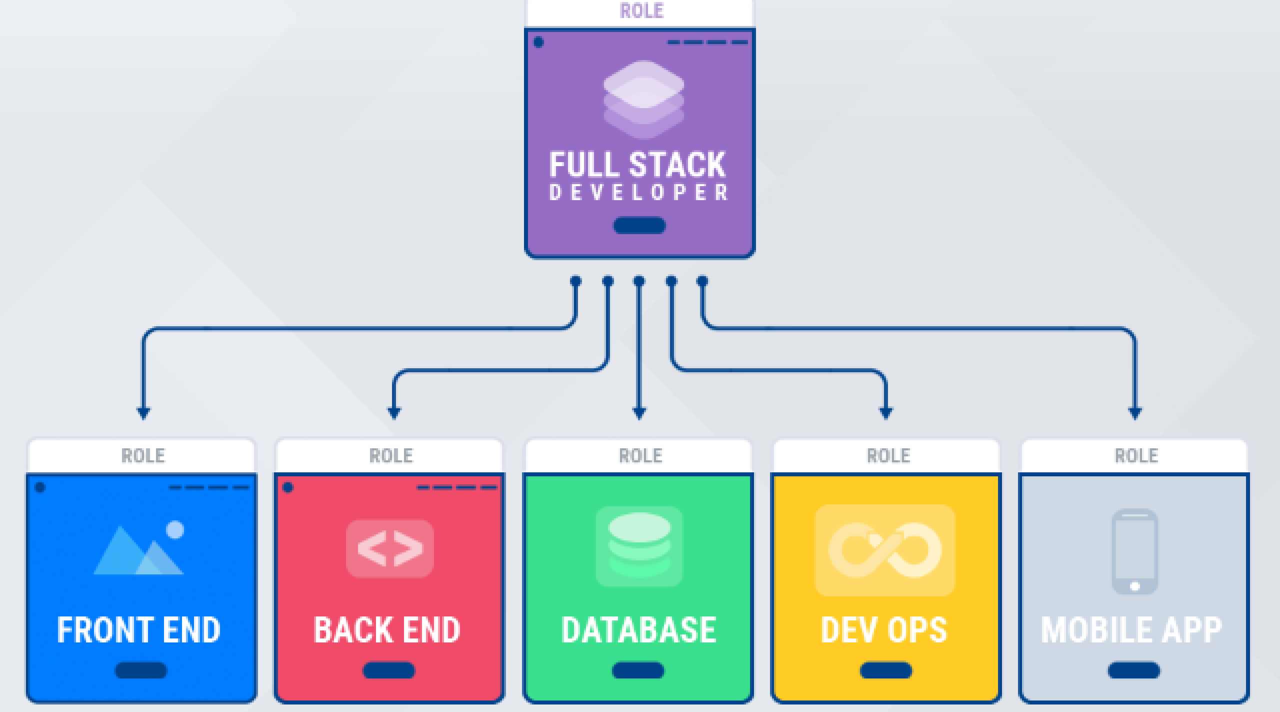
Full Stack Engineering

From entry to ~~mastery~~ quitting

The Text Book

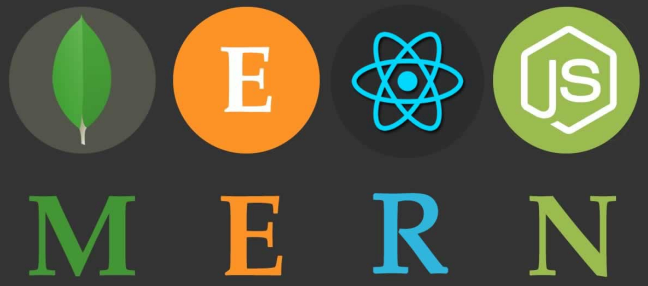


Full Stack


ROLE
FULL STACK
DEVELOPER
ROLE
FRONT END
ROLE
BACK END
ROLE
DATABASE
ROLE
DEV OPS
ROLE
MOBILE APP

Popular Stacks

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



Node.js

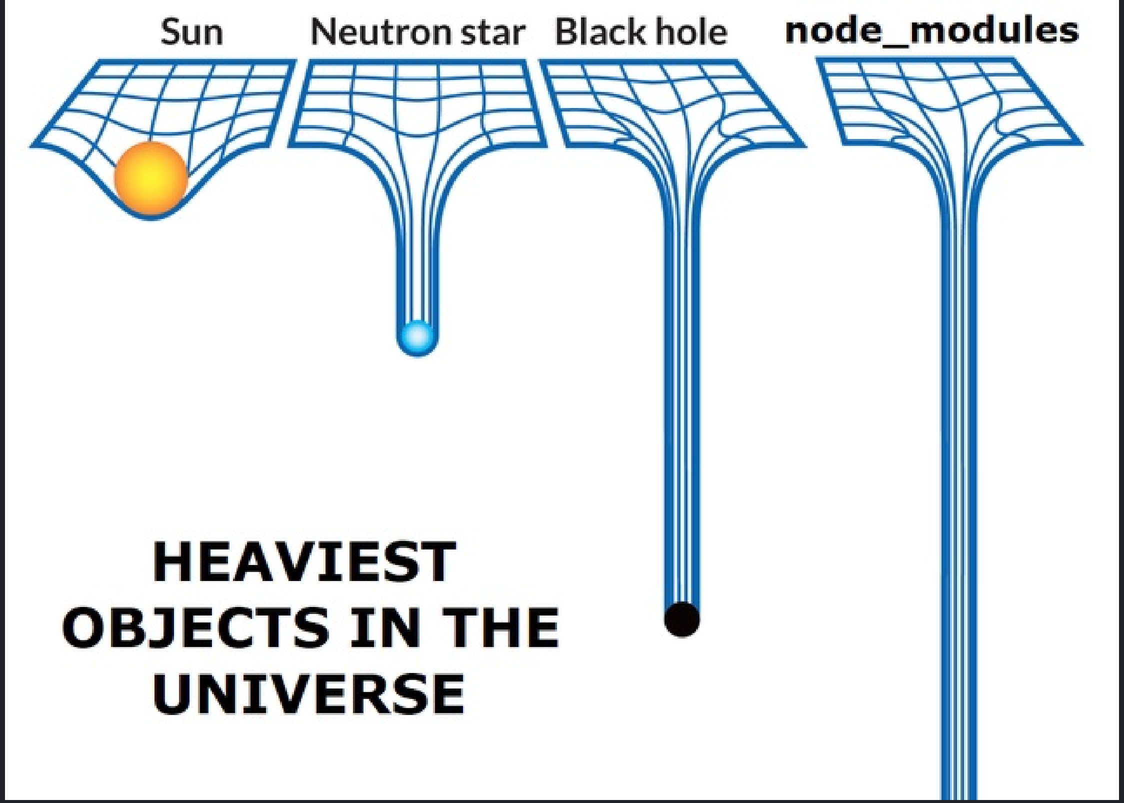
A JavaScript runtime built one Chrome's V8 JavaScript engine

Node.js (cont'd)

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

Node.js (cont'd)

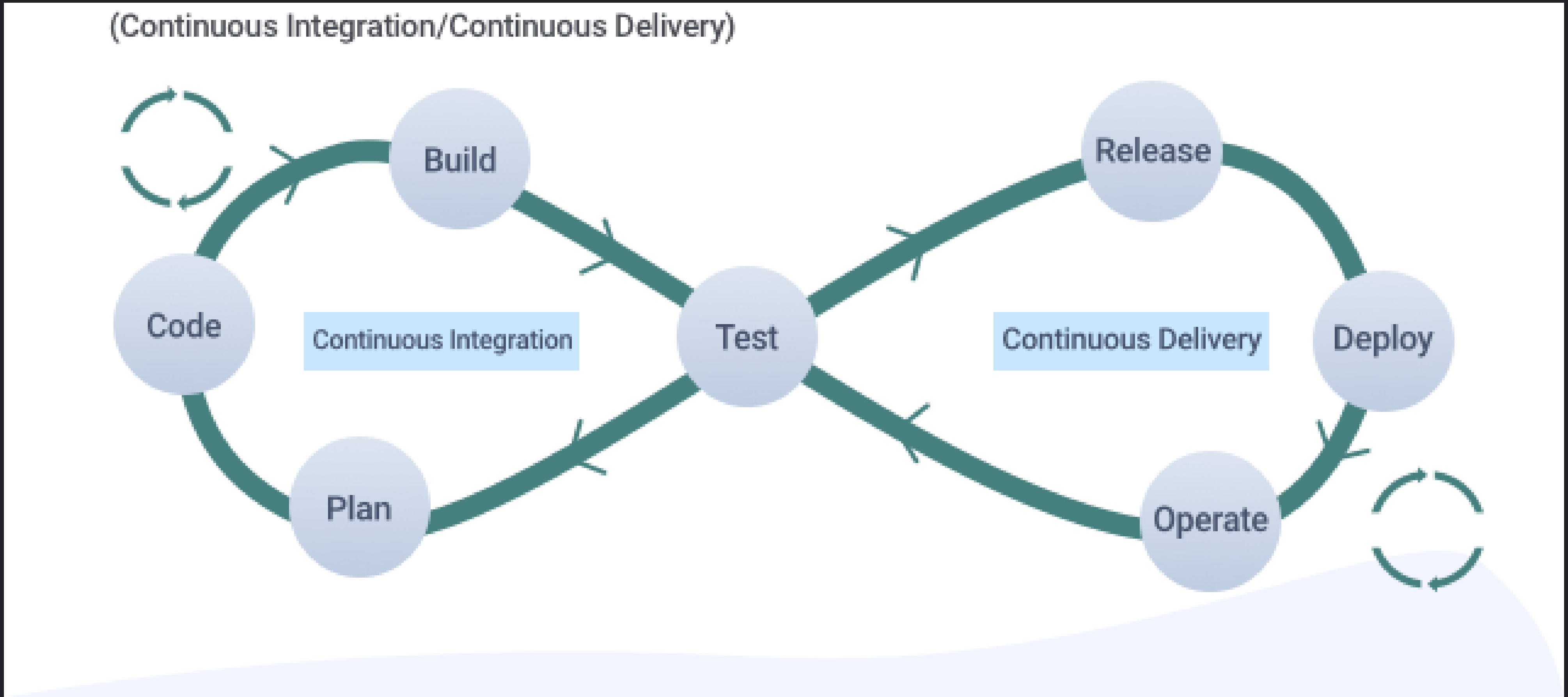
- Package system
  - Manifest (`package.json`)
    - Dependency
    - Makefile
  - `node_moudules`
  - Package manager (npm, yarn === pip)
  - ~1,894,242 packages on npmjs.com



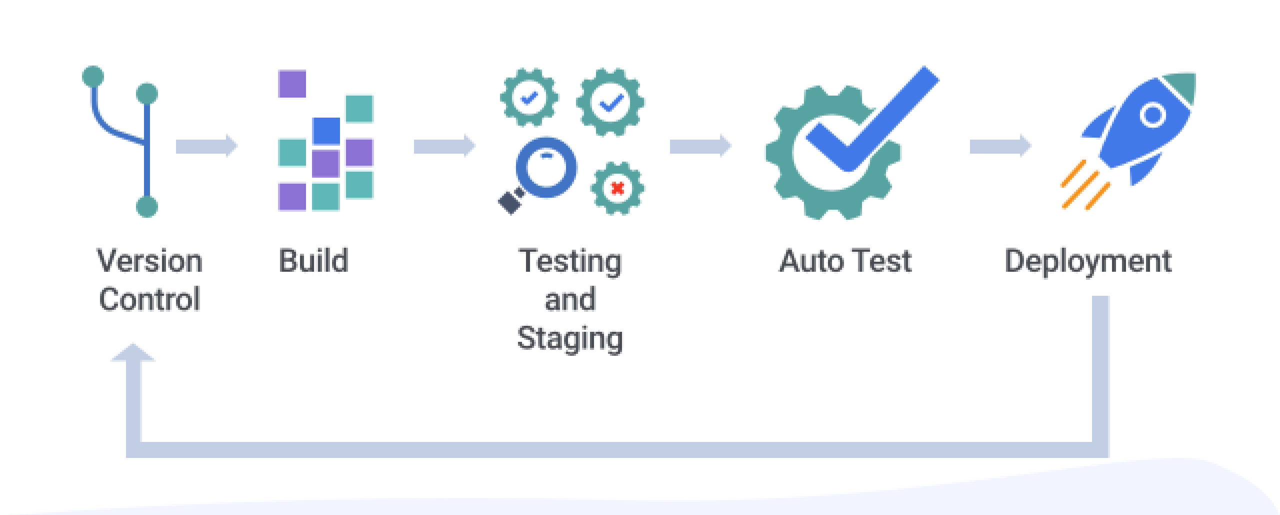
DevOps

A crash course

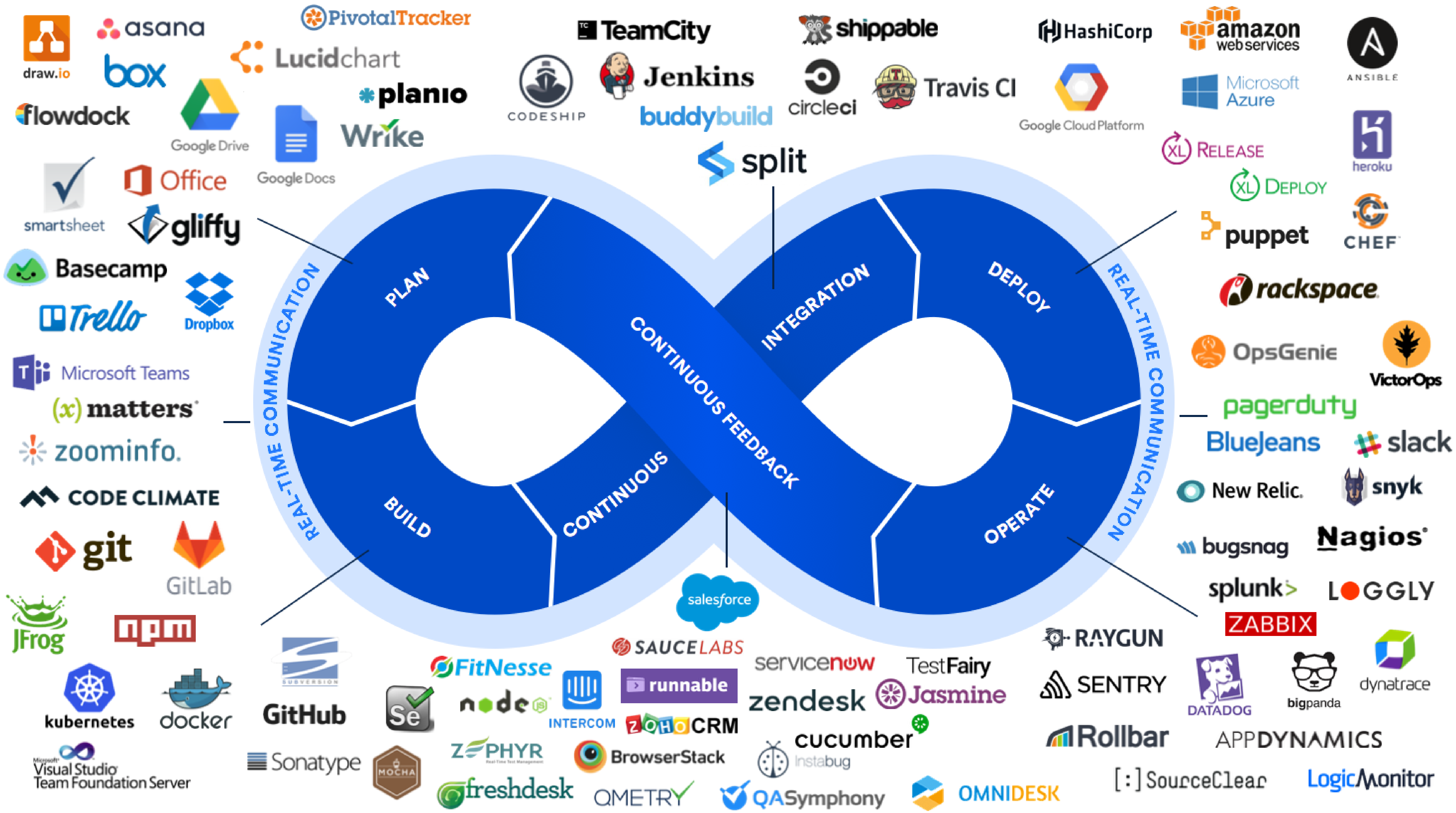
CI/CD


(Continuous Integration/Continuous Delivery)
Build
Release
Code
Continuous Integration
Test
Continuous Delivery
Deploy
Plan
Operate

CI/CD Pipeline



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


PLAN
BUILD
CONTINUOUS
CONTINUOUS FEEDBACK
INTEGRATION
DEPLOY
OPERATE
REAL-TIME COMMUNICATION
REAL-TIME COMMUNICATION
draw.io
asana
box
PivotalTracker
Lucidchart
planio
flowdock
Google Drive
Google Docs
Wrike
smartsheet
Office
gliffy
Basecamp
Trello
Dropbox
Microsoft Teams
(x) matters
zoominfo.
CODE CLIMATE
git
GitLab
JFrog
npm
kubernetes
docker
Visual Studio Team Foundation Server
TeamCity
CODESHIP
Jenkins
buddybuild
shippable
circleci
Travis CI
split
HashiCorp
amazon web services
ANSIBLE
Google Cloud Platform
Microsoft Azure
XL RELEASE
heroku
XL DEPLOY
puppet
CHEF
rackspace
OpsGenie
VictorOps
pagerduty
BlueJeans
slack
New Relic.
snyk
bugsnag
Nagios
splunk>
LOGGLY
ZABBIX
RAYGUN
SENTRY
DATADOG
bigpanda
dynatrace
Rollbar
APPDYNAMICS
[:] SourceClear
LogicMonitor
salesforce
SUBVERSION
GitHub
Sonatype
MOCHA
Se
FitNesse
node
INTERCOM
SAUCELABS
runnable
ZOHO CRM
ZEPHYR
BrowserStack
freshdesk
QMETRY
servicenow
TestFairy
zendesk
Jasmine
cucumber
Instabug
QASymphony
OMNIDESK

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 gloabl 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