



ASTROLABS

navigating entrepreneurship in the arab world

AstroLabs Academy

Coding Bootcamp Introduction

Your Instructors



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To Get Maximum Benefit



- Ask lots of questions!
- Work closely with your group and team
- Submit your assignments on time
- View the course material and on:
<http://academy.astrolabs.com>
(you'll be added after today's workshop)
- Join our Slack group to keep up to date even after the program, connect to the community and learn about career opportunities: <http://astrolabsacademy.slack.com>
- Build your portfolio and keep in touch for career opportunities
- Tweet / Instagram us @AstroLabsME

Agenda



- Saturdays are workshop days *10am-4pm*
- Mondays are review and mentoring *6:30-9pm*
- Wednesday is for coding *6:30-9pm*

Week	Content
1	Intro to Coding, HTML, and CSS
2	Prototyping
3	JavaScript Programming
4	Backend Node JS, Express and Mongo DB
5	Backend Node JS, Express and Mongo DB
6	Frontend React JS
7	Frontend React JS
8	Final Project



You must finish them to get your final diploma

(some are individual some are group work)

Week	Item
1	1) Build a simple eCommerce site 2) Your own Portfolio site hosted online
2	1) A landing page for your project (all hosted online) 2) Mock design prototype for app (a homepage and one other page)
3	Finish 3 algorithm challenges in JavaScript
4	Create your own backend API
5	Create a secure API to register and login users with hashed passwords and hosted online on a remote server
6	Create your own React application
7	Connect your React application to the backend you created (logging in and registering users)
8	Final Project – Convert your landing page to an fullstack application, with login functionality and at least one separate function

What you need



Your Laptop

- Windows: Basic windows machine will do. You need to install Git Bash:
<https://git-scm.com/downloads>
- Mac: Comes with a *Terminal* just make sure it's activated

Both need to

- 1) Install a text editor: <https://code.visualstudio.com/>
- 2) Use either Chrome or Firefox as their browser
- 3) Download Node JS and Git

Learning To Code Can Be Complicated



- Learning to code can take a very long time! (the 10,000 hour rule)
- This program will teach you the basics, show you the paths, and give you the important must haves (the 80/20 rule)!
- This class is a crash course, how much you get out of it depends on your effort afterwards!

Main Coding Languages in the Industry



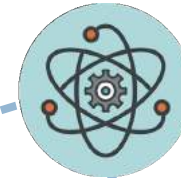
Web Development

- Must use HTML / CSS
- JavaScript / Ruby (on Rails) / Python (Django), PHP



Data Science / Machine Learning

Python, JavaScript



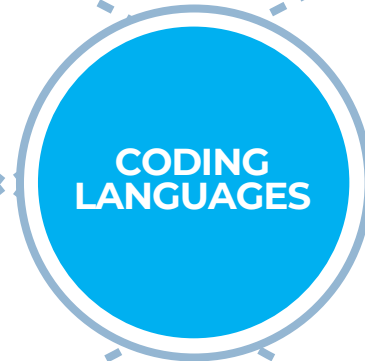
iOS

- Objective C
- Swift
- JavaScript



Android

- Java
- Kotlin
- JavaScript



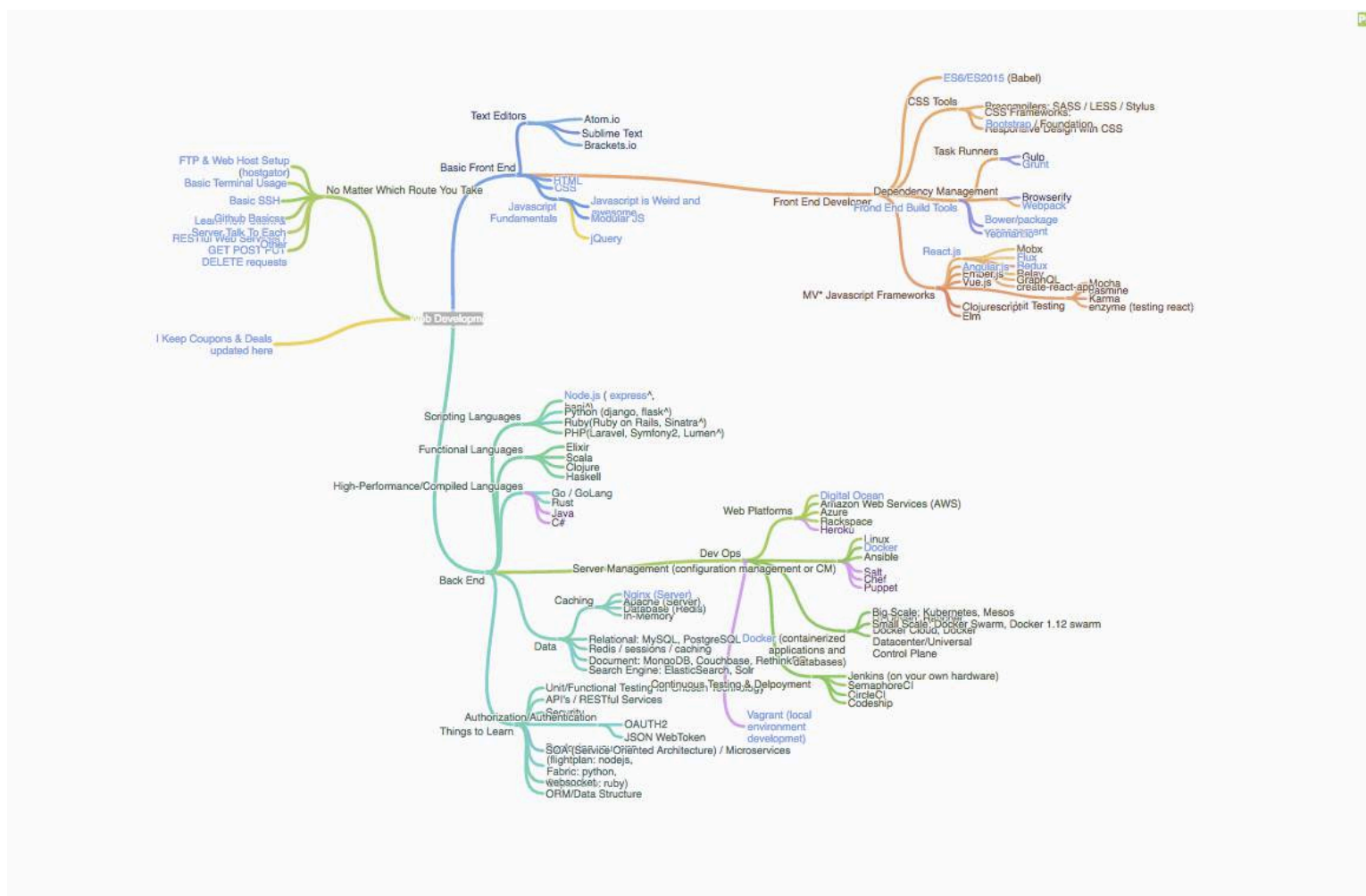
Focus on Web Development



- Is the easiest to get started with!
(can be coded in a text editor and run in the browser)
- Gives you immediate feedback and is fun to see results quickly!
- Is the most used and in-demand job / market skill (everyone needs a website)
- Even if you want to built an mobile app (or something else) later having a core competency of web development will help (shared backend across web and mobile, and developing basic programming skills)

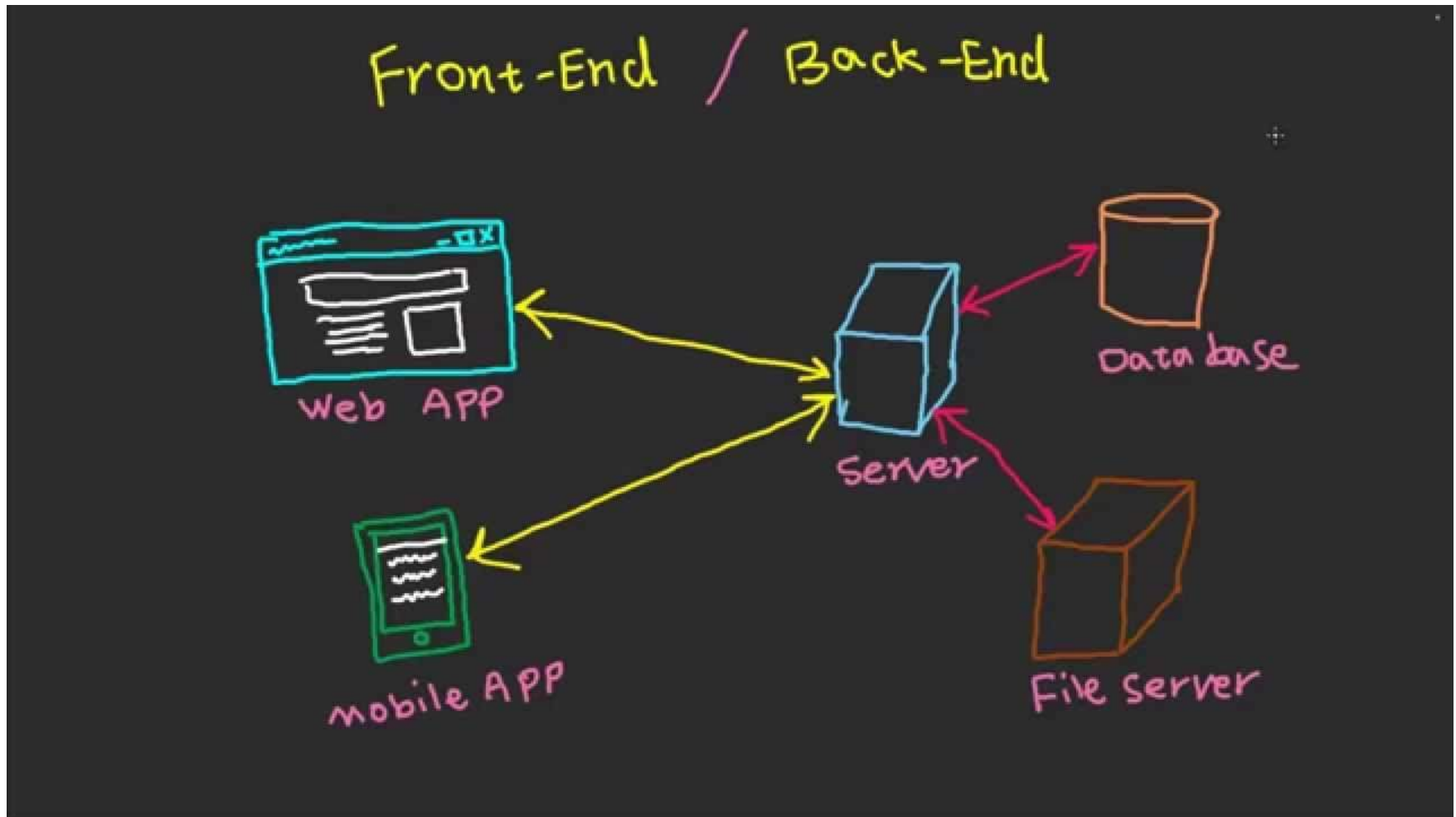


Web Development Is A Huge Field!



See full diagram at: <https://coggle.it/diagram/Vz9LvW8byvN0I38x>

The Components



HTML Code



```
<html> <head> <title>This is a title</title>  
</head> <body> <p>Hello world!</p> </body>  
</html>
```

- HyperText Markup Language
- This is where the content lives
- Let's try it ourselves!

HTML





➤ <tags> you should know

- <html> - tells the browser this is an html file
- <head> - the header (connects to libraries)
- <title> - the title in the browser tab
- <body> - your site lives here
- <a href> - links
- - images

➤ Let's build a simple site, with an image and a link

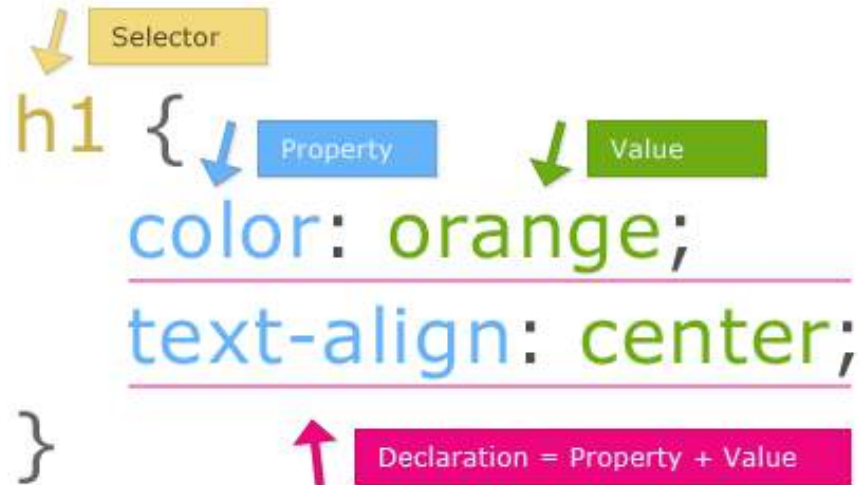


- This is what makes your site look nice
- “Templafies” your site
- Uses id’s and classes
- Let’s try this!





Anatomy of a CSS Rule



- Elements (tags `h1`, `p` etc.)
- Classes (identified with `.`)
- ID's (identified with `#`)

Web Development vs Web Design



What's the difference??



WEB
DEVELOPMENT



WEB
DESIGN



- This is the programming language of the web
- How your site interacts with your database and the world!
- Can be used for “everything”!



Web Design Principles



- UI – User Interface (how it looks)
- UX – User Experience (thinking of how users use it)
- Responsive Design
- Mobile First
- Check out: <https://design.google/> and <http://bradfrost.com/blog/post/atomic-web-design/>
- Use a library like Bootstrap, Material UI etc.
- Use a CMS theme

Front End Versus Backend



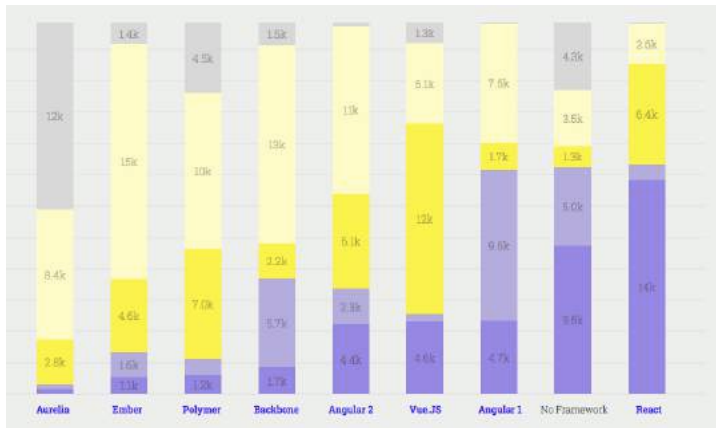
Front end vs. Back end.



- Why do we need it if we have HTML / CSS?
- Allows you to:
 - Have login features
 - Interactivity
 - Change page without reloading
 - Send data to database
 - Have “state management”

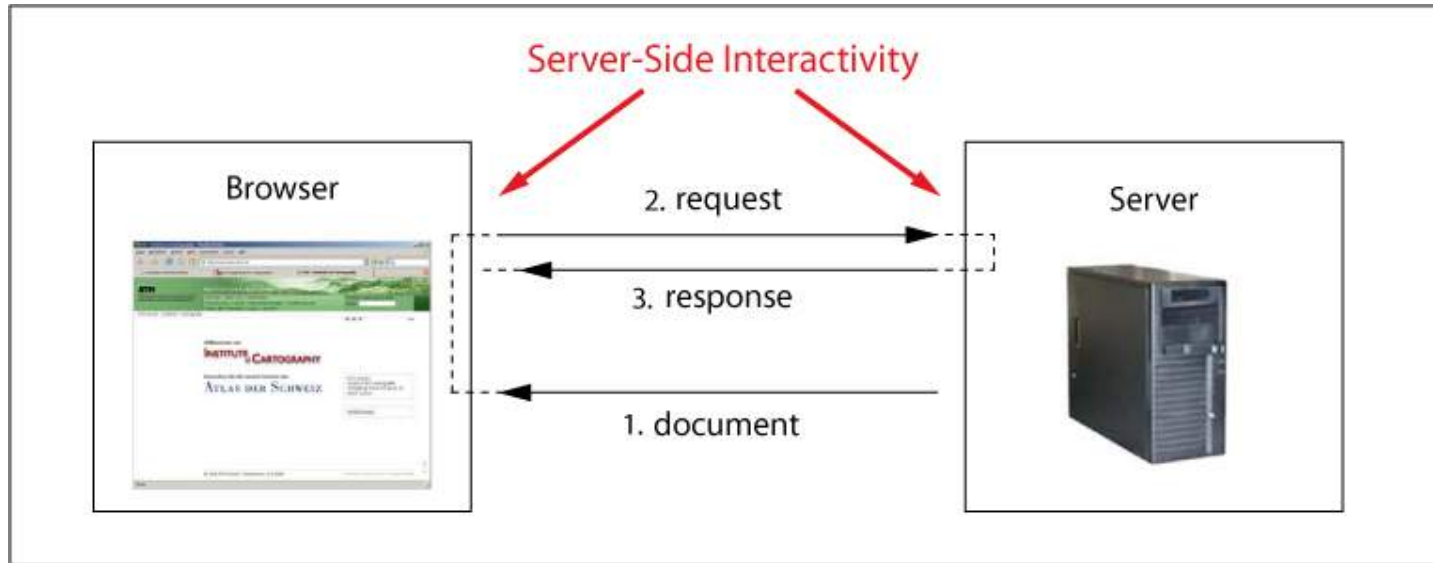


Front End Frameworks



- Learn about their popularity at:
<https://stateofjs.com/2017/introduction/>

Server Side Web Applications

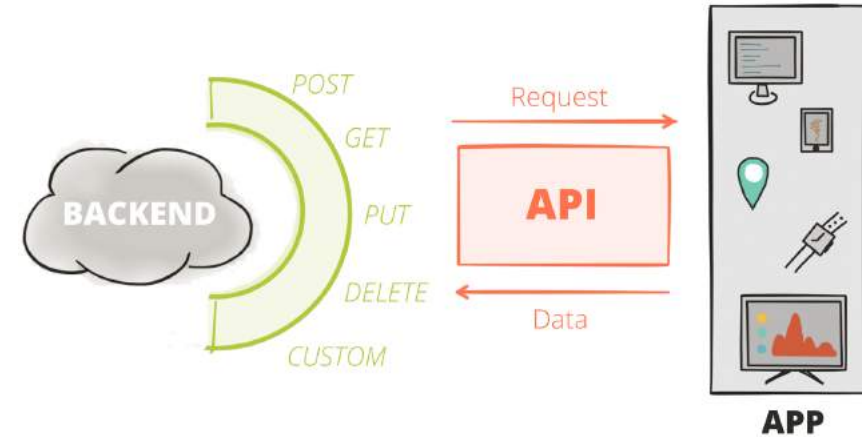


- JavaScript (NodeJS with Express)
- PHP (LAMP, WordPress)
- Django- Python
- Ruby On Rails - Ruby

API's



- Application Program Interface
- A way to connect with servers
- They give you data not for a website
- Usually in JSON form (JavaScript Object Notation)
- See examples at: <https://openclassrooms.com/courses/build-your-web-projects-with-rest-apis/examples-of-rest-apis>

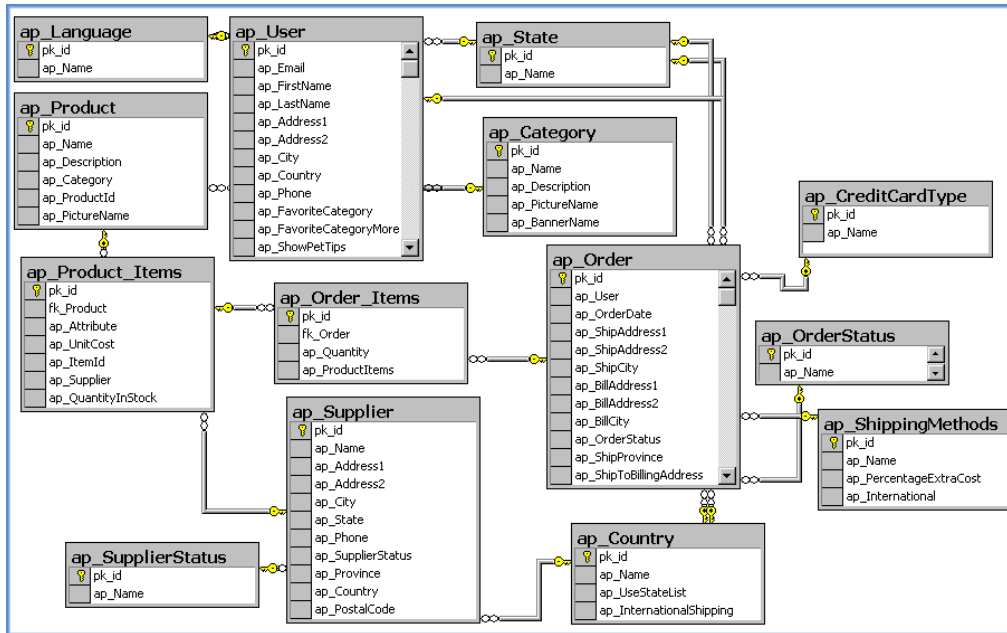




➤ Where your data is stored



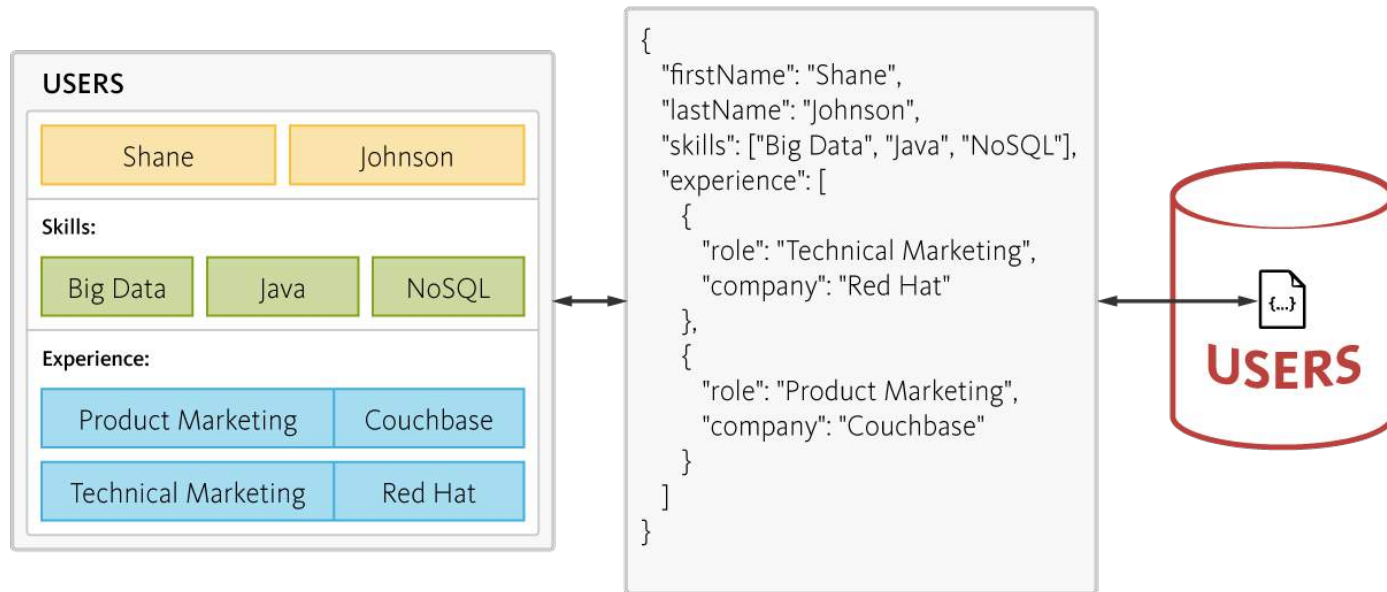
Basics of SQL



- Databases use the SQL language ADD, DROP, SELECT
- Tables within databases
- User data, CMS data is all stored here



- MongoDB
- Uses JavaScript 'Objects'



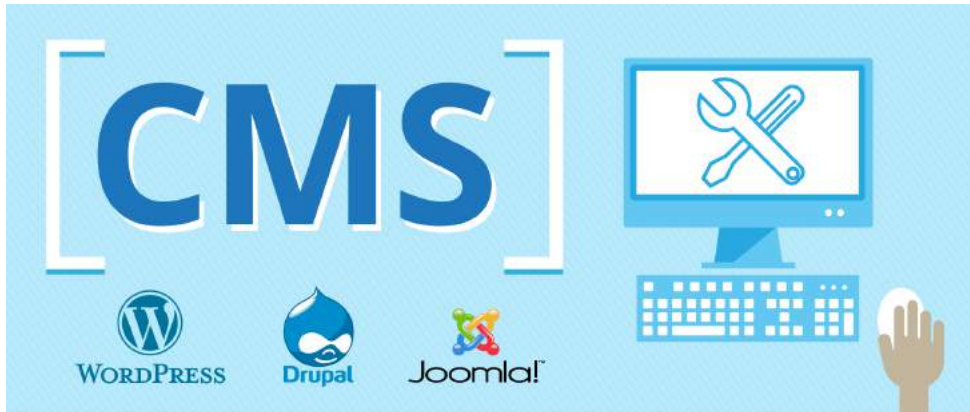
This is how hard it is to build a site on your own



This is building a site with a CMS

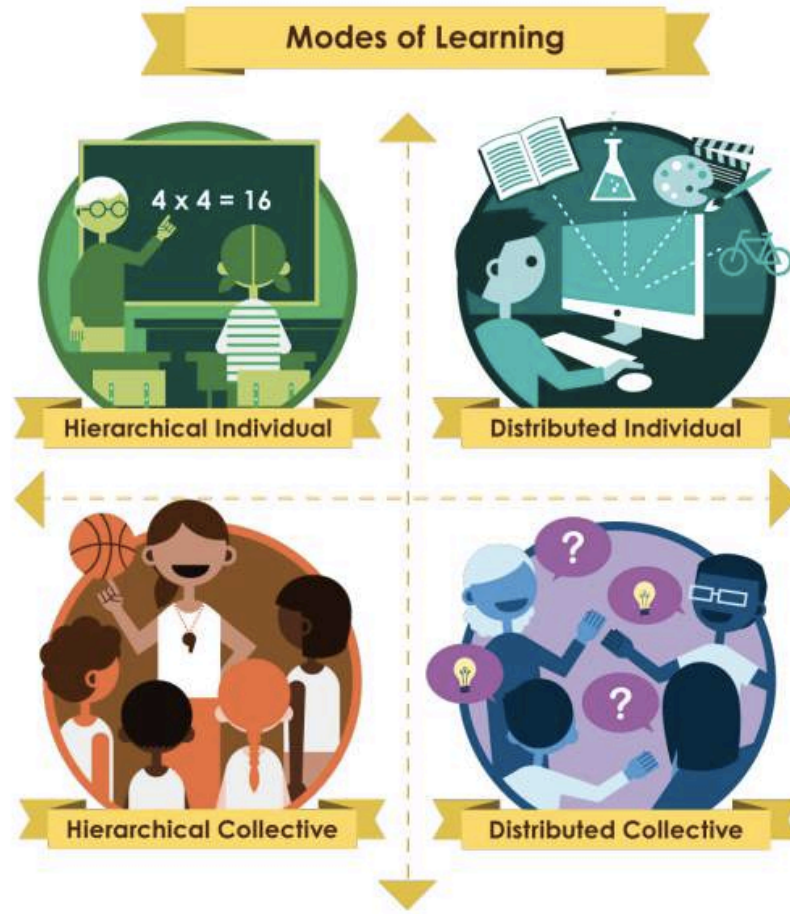


CMS – Content Management System



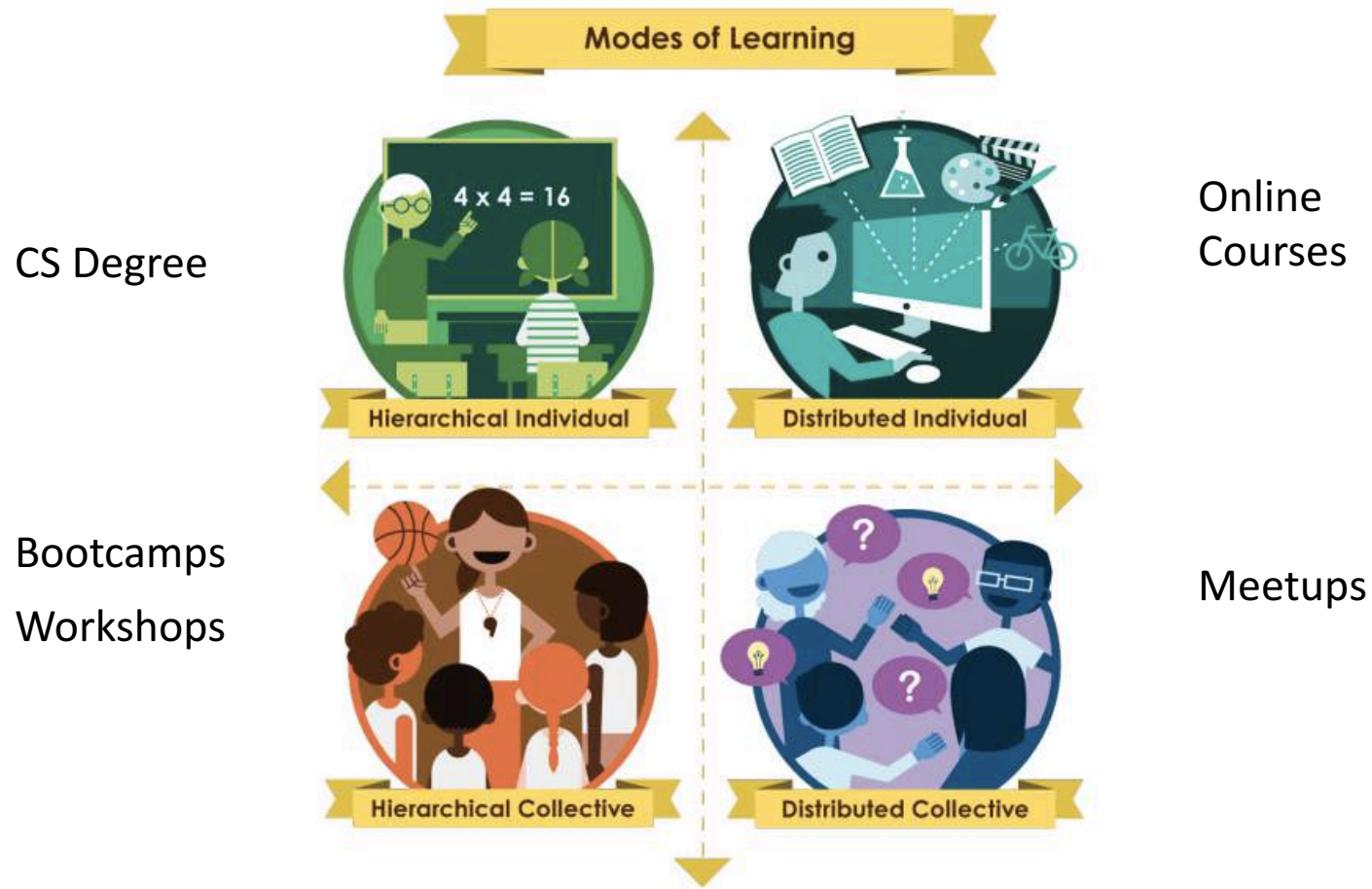
- Allows non-coders to easily make changes
- Adds another layer onto your site to customize easily
- Easily integrates the Web Development and Web Design of your site
- Allows multiple user permissions

4 Learning Paths

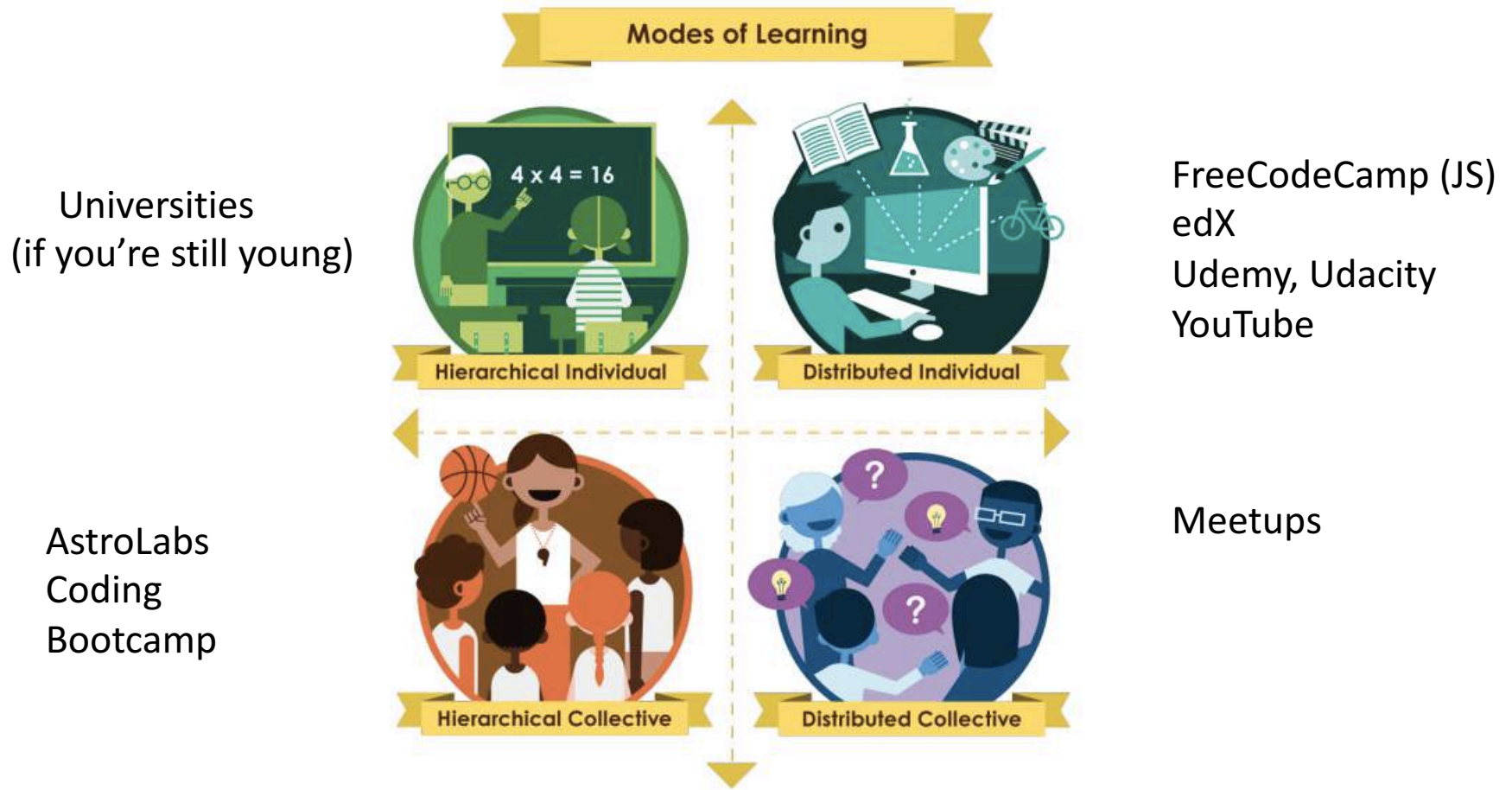


Harvard: Leaders of Learning on edX

For Coding



What About in the region?



Tips to be a better coder



- 1) Code every day
- 2) Hang out with people who code!
- 3) Have a bigger goal (building your dream project or getting a job)



Quincy Larson
-FreeCodeCamp



What To Choose?



➤ We recommend to focus on JavaScript because

1. “Any application that can be written in JavaScript, will eventually be written in JavaScript.” Jeff Atwood
2. JS is full stack, now with Progressive Web Apps (Google), Hybrid Apps (React Native – Facebook and Ionic / Cordova) , Desktop apps (Electron) and even Blockchain / VR.



The Power of JavaScript



- Web Apps
- Hybrid Apps (Build in JS & HTML, then transformed into iOS / Android). Can be done using *React Native* (gives you more control over the code), or through Hybrid App builders (like Ionic)
- Progressive Web Apps (take websites and give them 'mobile app' functionality):
 - Push notifications
 - Offline storage
 - App icons on homescreen

Free Resources I recommend you checkout



- <https://FreeCodeCamp.org>
<https://javascript30.com/>
- **Podcasts:** AstroLabs, CodeNewbie, FreeCodeCamp Podcast, Syntax, Front End Happy Hour, Software Engineering Daily, Build Your Saas, Startups For The Rest Of Us, Tropical MBA
- #100DayOfCode (follow the hashtag on twitter).