

An introduction to backend

Exploring APIs, working with data and building a Flask server

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whoami

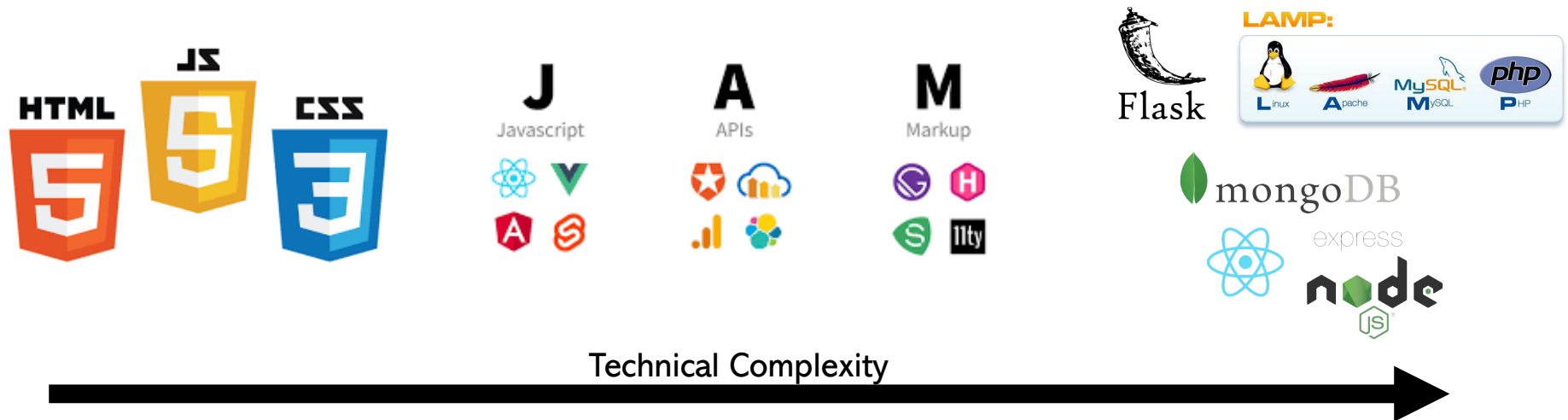
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- Worked @ Microsoft, Intel as a Data Scientist, ML intern

What to expect from this talk:

- Live coding presentation in Python.
 - Students can join in and build a Flask server within this presentation.
- Catered to three (3) different levels (**Beginner**, **Intermediate**, **Advanced**) throughout the presentation different sections will be highlighted for each group.
- Four (4) parts:
 1. Background: Using the right technologies and not reinventing the wheel.
 2. API: A programmer's best friend. What it is and how to use one.
 3. Data: Creating, storing and pulling data.
 4. Server: Demystifying and deploying a simple server with filtering functionality.

Background



Keep it simple! Don't reinvent the wheel

Mind the Gap! Be careful



- With skill comes responsibility!
- As engineers, we must hold ourselves to a high ethical standard!
- <https://engineering.asu.edu/honor-code/>
 - #12: Act at all times with integrity, as the true professional that I am to become.
- With that said, there are malicious actors out there and we need to be mindful.
- **This is for your safety!**
- Be aware of what code you post on Github (passwords, IP addresses, etc.)
- Be careful of any publicly exposed IP endpoints, even for a second.
 - **Never run a publically exposed server from your home Internet network.**

API Exploration

- An API stands for an (A) application (P) program (I) interface.
 - It is a connection built with software between two computers.
 - It is a programmer's best friend.
- Today, we will be exploring APIs and learning how to work with them.
 - Beginner will learn the basic ideas of API and the requests library.
 - Intermediate will learn API exploration techniques.
 - Advanced will learn the basics of web scraping from websites without an API.

Working with Data

- Once we identify the data we care to use for our application, we need to store it for use.
- Today, we will be learning the basics of gathering and storing data:
 - Beginner will learn the different methods for storing data.
 - Intermediate will learn I/O of CSV files
 - Advanced will be exposed to SQLite, Chomsky normal form, and working with large amounts of data.

Building a Flask server

- Here, we will build a basic Flask Python server to serve our data as an API.
 - Beginner will learn what a server is and what it does.
 - Intermediate will learn how to build a basic serve with proper responses.
 - Advanced will learn how to filter API responses.

Closing thoughts

Thank you!

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