FULLSTACK DEVELOPMENT BOOTCAMP

by

TECH SWAMY

TRAINING AND MENTORSHIP

Bootcamp Curriculum

● **Git and GitHub**
  ○ **Learn about version control systems**
  ○ **Learn Git and basic commands**
  ○ **Learn how to collaborate with team members using GitHub**

● **Front End Development**

  • **HTML & CSS**
  • **JavaScript - In this section we go in depth into the JavaScript language.**
    ○ **Variable assignments**
    ○ **Object and Arrays**
    ○ **Functions**
    ○ **Closure and scope**
    ○ **Callbacks**
    ○ **Promises and async / await**
    ○ **The event loop**
    ○ **Exceptions and exception handling**
  • **jQuery**
  • **Javascript & DOM**
  • **ReactJS**
  • **Practice projects : One, Two & Three**

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Back End Development

In this section, you will learn how to the internet works, how to create a web server using NodeJS, how to structure your web applications to scale, how to work with databases and how to use Docker to ease development.

- **How the internet works**
  - **Learn about DNS**
  - **Learn about network protocols - TCP/IP and HTTP**
  - **Lean how servers work**
- **NodeJS - JavaScript on the backend**
  - **How NodeJS works**
  - **Why NodeJS is used by modern start ups to build high performant applications**
- **Express JS**
  - **Request and Response**
  - **Routing**
  - **Templating**
  - **Middleware**
  - **Sessions and cookies**
  - **JWT Authentication**
- **Scaling backend applications**
  - **Performance best practices**
  - **Security best practices**

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Back End Development

- **SQL and Databases**
  - **Learn to store & retrieve data from a database**
  - **Learn data modelling techniques in Relational Database Management Systems (RDBMS)**
  - **Object Relational Mapping (ORM)**
- **MVC Architecture**
  - **Object oriented programming**
  - **SOLID principles**
- **Practice project 1 (server rendered)**
- **REST API design**
  - **How to build JSON REST APIs using ExpressJS**
  - **How to protect JSON REST APIs using JWT authentication**
- **Practice project 2 (API)**
- **Testing principles and philosophy**
  - **Why is testing crucial**
  - **Test pyramid**
  - **Unit testing**
    - **Fakes**
    - **Mocks**
    - **Spies**
    - **Stubs**
  - **Integration Testing**
  - **End to End testing**

● Algorithms & Data Structures 101

You won't have to deal with boring, dry theory. In this section you will get a feel of why data structures and algorithms are important concepts to know, where they apply and the most important techniques that you will use the most in your day-to-day. we look at practical applications of data structures and algorithms.

- **Big O**
- **Common Big O's you should know**
  - $O(1)$
  - $O(n^2)$
  - $O(\log n)$
  - $O(2^n)$
- **Arrays**
- **Linked Lists**
- **Hash Map**
- **Queues**

● Containerisation

- **What is Docker**
- **What are images and containers**
- **How to run images**
- **How to create your own image**

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Cloud 101

- **What is the cloud and what are cloud vendors**
- **SSH & How to navigate a remote linux server**
- **How to create a server in the AWS**
- **Deploy your application to AWS**

Capstone project

- **Real time chat app (WhatsApp clone)**
- **Music streaming application (YouTube music / Spotify)**
- **Movies listing application (The movies database)**
- **Food delivery app**
- **e-commerce store**
- **Workout tracker**

You can choose any one from the above as per your interest & liking as your capstone project.

- **Content Management System**
- **This is a special project. If you choose to do this, you will pair with Vijay and once complete, the app will be released to the world to use. This is a great project for those that have dreams of building their own SaaS product**

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