The Valley Bootcamp

Full-Stack Web Development Course

Overview

The Valley Bootcamp is a coding boot camp based out of Bangalore. We excel in providing high quality, hands on training by industry experts. Our students undergo rigorous training in software development and advanced topics. We try to bridge the growing gap between graduation and employment.

Goals

- Develop a strong foundation in programming fundamentals.
- Understand the concepts of object oriented programming.
- Understand, develop and architect API's.
- Become an expert in databases and ORM (object relational mapping.)
- Learn MVC, most of the webapps are built around this architecture.
- Build, execute and deploy web applications.
- Learn the intricacies of coding and how it fits into different scheme of things.
- Study most of the fundamentals of computer science.
- Become an expert in data structures and algorithms.
- Become an algorithm expert.

Syllabus

The Full Stack Web Development course is aimed at teaching you the technologies that are used to build powerful, multi-user web applications. We will cover Reactjs on the front-end and NodeJS + MongoDB on the backend. We will go through how a rest api works, how APIs are used all over the web today to power multi-platform applications and build a few along the way.

Week	Topic
Week 1	Install Ubuntu / VirtualBox Explore Linux commands and shell scripting Introduction to HTML and CSS. Setup Slack, GitHub, Google Drive
Week 2	Object Orientation ● Get some experience with oops concepts. ● Learn how JavaScript is not a classic Object Oriented language. ● Learn how we can share functionality with prototypal inheritance.
Week 3	Object relational mapping and NoSQL
Week 4	Introduction to backend MVC architecture, HTTP
Week 5	NodeJS ● This part is dedicated to teach students about http and how internet works around it. ● In this week, students learn how http servers are built and learn about status codes, http request/response objects etc. ● Create servers that listen to HTTP requests and respond with well-formed HTML responses.
Week 6	Express JS ● Express is an MVC framework for NodeJS that makes it very easy to build web applications and http APIs on using Node JS. ● In this week, we explore the Express framework, learn about templates, middleware, sessions and authentication. ● Gain exposure to design patterns in web applications.
Week 7	Building Web Apps ● With a foundation in Express as well as the architecture of the web application backends, we build a fairly complex, functional web application from the ground up.

	● Further learn about the file structure of Express, how to use MongoDB and connect it with our web application, dynamic routing etc... ● Learn about handling form submissions that take user input and make our web application dynamic.
Week 8	React ● Using plain JavaScript with large web applications quickly becomes unruly and unmanageable. Initially created by Facebook, React is the premier JavaScript framework for building fast web user interfaces. ● Learn the fundamentals of components.
Week 9	Building Apps With React ● Learn how to build a webapp using react. ● Build applications that effortlessly consume APIs, render data quickly, and scale as application complexity increases. ● Discover how to design, build, test and deploy a RESTful api using Node.js and mongo. Learn about data modelling, querying data with mongoose, using json web token, and more.
Week 10	Data Structures and Algorithms. ● At this point of time, we dive into interview preparation mode. ● We cover all data structures like Trees, Linked List, Stack etc. ● We go through all important coding questions. ● We also help you understand some of the important algorithms which are needed to crack interviews.
Week 11	Cloud Computing and AWS. ● We go through the basics of cloud computing. Advantages and disadvantages of it etc. ● You will deploy your webapps in EC2 instances, use dynamoDb for persistence. ● We will also use S3 and Lambda.
Week 12	Final Project Demo

Prerequisites

1. HTML & CSS fundamentals - Students must have a basic understanding of HTML, CSS, DOM (Document Object Model) and the Box Model. Please read [HTML & CSS by Job Duckett](#) to understand how HTML and CSS work together to create beautiful user interfaces. Reading the entire book is **not required**; the only serves as a means of getting a good grasp on HTML and CSS and may be used as reference when required.
2. Javascript Basics - Students must have a familiarity with the javascript language - variable definition and assignment, functions, loops and callbacks. [This excellent guide on github](#) will get your hands dirty with JavaScript and introduce fundamental concepts. *Parts I & II of the book are required.* **Part III may be skipped**.
3. After going through the above material, students will have the knowledge to create static HTML pages with styling and know how to work with the DOM using javascript.
4. Extra credit - Having a minimal understanding / familiarity of the jQuery library and how it helps can take you a long way in excelling at this bootcamp.

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