FRONT-END WEB DEVELOPMENT BOOTCAMP

CURRICULUM

Eight modules
4 hours/module

Master the basics of front-end web development in this 8-day intensive bootcamp. The bootcamp begins with the foundations of the web - HTML, CSS and JavaScript (including a brief introduction to jQuery), and then moves on to the very popular Bootstrap framework that helps create stunning websites and applications with ease. The web foundations along with Bootstrap, set the stage for the focus of the workshop - Google's Angular framework, a much sought after skill in the industry today. The bootcamp gets you prepared for an entry-level position as a front-end web application developer.

PREREQUISITES

(Apart form those common to other offerings)

- Knowledge of a programming language like C, C++ or Java.
- Basic algorithms knowledge

CHAPTERS AND TOPICS

GETTING STARTED

Introduction to the World Wide Web

- History of the Web
- Client-server Architecture
- Anatomy of a URL
- HTTP Basics
- Browser and its Developer Tools
- Introduction to Front-end Technologies

HTML BASICS

Organising the Content of a Web Page in HTML

- Basic Tags and Attributes - Adding Paragraphs, Heading and Links
- Block-level and Inline Container Tags
- Including Media Elements - Images, Audio, Video and the iframe Tag
- Creating Tables and Lists
- Adding Forms to Web Pages
- Form Validation (including usage of HTML5 input elements and attributes)
- Web Storage - Cookies, Local and Session Storage
- Web Hosting

CSS BASICS

Understanding the way CSS rules behave

- Various Ways of Applying Styles
- CSS Selectors
- Inheritance of Styles
- Selector Specificity and the Cascade

CSS Properties

- The Box Model and related properties
- Background related properties
- Text and font related properties
- Hiding and showing elements
- Handling horizontal and vertical overflow of content

Layout techniques

- The display Property

Floats

Positioning

Media Queries and Responsive Web Design

JAVASCRIPT BASICS

Introduction to JavaScript Language Fundamentals

Variables and Primitive Data Types

Variable Scopes, Scope chain

Using Arrays

Expressions, Operators and Operator Precedence

Control flow - Branching and Looping

Introduction to Functions

Function Declaration and Usage

Handling Variable Number of Arguments

Callbacks - Passing Functions as Arguments

Returning Functions

Closures

Introduction to Objects

Object Declaration using Literal Syntax

Accessing Properties and Methods

Adding and Deleting Properties

The Module Pattern

The *"Class" in JavaScript*

Functions Context (t*his* keyword) and the Constructor Function

Introduction to the Object Prototype and Prototype Chain

Basic Introduction to Built-in Classes and Objects in the JavaScript Language

call() and apply() as Methods of Functions

Array methods

Date methods

JSON

Introduction to Handling error scenarios

Strict Mode Execution

Exception Handling using *try..catch..finally* and *throw*

The Document Object Model (DOM)

Nodes and the DOM Tree

Node Relationships and DOM Tree Traversal

Methods for DOM Manipulation

Event Handling

Various Browser Events

Different Ways to Handle Events

Event Object Properties and Methods

JQUERY BASICS

Introduction to Basics of jQuery

Why jQuery?

DOM Manipulation in jQuery

Event Handling in jQuery

Ajax requests using jQuery

Important Utility Methods

BOOTSTRAP

Bootstrap Fundamentals

Introduction to Bootstrap

The grid system

Typography-related classes

Image helper classes

Responsive utilities

Using Glyph icons and Font awesome

Buttons

Tables

Dropdowns, input groups

Alerts

Advanced components

Forms

Navs and Navbar

Panels, collapsible panels and panel groups

Modal dialogs

Carousel

Theming

Introduction to Sass

Customizing Bootstrap

ANGULAR

Pre-requisites

Introduction to ES6

TypeScript Basics

Introduction to Angular

The SystemJS Universal Module Loader

Directives

Routing - Passing data, child routes and lazy-loading of modules

Dependency injection

Injectors and providers

Injecting the Http service

Communicating with the backend using Http

Hierarchy of injectors

Data binding

Binding events

Binding to properties and attributes

2-way data binding

Observables and observers

Communication between components

Communication patterns

Component lifecycle

Change detection

Capstone project

Building a blogging application using Angular