Course Plan

HTML5, CSS3, Bootstrap, Essential JS (EMCAScript 2015), TypeScript, Angular 13

Duration

25 Half Days

Audience

This course is for Web Developers who have little or no experience in front end

Objectives

- Learn and master the fundamentals of Web Technologies such as HTML, CSS, JS, and JS Libraries and Frameworks
- Making single page application using the one of the top SPA frameworks of 2022– Angular
- Become Advanced Angular Developer after completing this course.

Prerequisites

- Minimum 6 months of experience in Web Development is good to have.
- This course is targeted at web developers .
- Laptop with minimum of 8GB RAM and NodeJS and Visual Studio Code Editor Preinstalled.

Course Outline

Day 1 (4 Hours)

Introduction to Web

Introduction to Web Apps Development
- **Module 1: HTML & HTML 5 (Essential HTML for Angular and NodeJS JS Dev)**
    - HTML Elements
    - Block and Inline Elements

Day 2 (4 Hours)
    - HTML5 Elements
    - Creating Layout
    - Making Company Website in HTML and HTML 5

Day 3 (4 Hours)
- **Module 2: CSS & CSS3 (Essential CSS for Angular and React JS App Dev)**
    - Understanding CSS
    - Implementing CSS in the website developed
    - Adding CSS to the HTML Layout

- Selectors
- Box Model

Day 4 (4 Hours)

- Quick Intro to CSS3
- Styling Company Website in CSS and CSS3
- Understanding Media Query for RWD
- Understanding SASS

Day 5 (4 Hours)

- **Module 3: Bootstrap**
  - Bootstrap Introduction
  - What, Why Where and How
  - Purpose and Advantages
  - Developing Website with Bootstrap
  - Responsive Website with Bootstrap

Day 6 (4 Hours)

- **Module 4: JavaScript**
  - **ESSENTIAL JS**
    - Variables and Data Typing in JS
    - JS Fundamentals
      - If / else, switch / case, for
      - Array
      - Object
    - Window & 'this' keyword
    - Variable Hoisting

Day 7 (4 Hours)

- Functions
- Invoking function
- Named Functions
- Function Hoisting
- Anonymous Functions
- IIFE
- Function as Event Handlers
- Functions as Objects
- Arguments Objects
- HTML DOM and BOM
- Events
  - Attach events and detach

- Bubbling
- Canceling

Day 8 (4 Hours)

- DOM Manipulation
- Exceptions and Debugging
- JSON
- Async Communication
- AJAX thru JavaScript
- JSON
- JSON Stringify and Parse

Day 9 (4 Hours)

- HTML 5 JS API - Demo
- Drag and Drop
- Local Storage, Session Storage
- Geolocation
- Web Worker

Day 10 (4 Hours)

- **Understanding of call stack,**
- **heap memory,**
- **callback queue,**
- **micro tasks queue**

Day 11 (4 Hours)

- **Module 5: ECMAScript 2015**
  - What's ECMAScript 2015?
  - Difference between ES5 / ES2015
  - ES2015 – Browser Compatibility
  - How to use ES2015 today?
    - o Babel
  - Variables
    - o let & its scope
    - o const
    - o Variable hoisting and let
    - o let in for loops

- Template Literals
- Functions
    - Arrow / Fat arrow Functions
    - Arrow functions and Lexical 'this' Keyword
    - Default parameters

Day 12 (4 Hours)

- Introducing Classes in JavaScript
    - Class
    - Expressions
    - Inheritance with derived class
    - Prototypes
- Modules in ES6
    - Exporting Classes
    - Import and Export
- Promises
- De-structuring in Objects and Arrays
- REST pattern,
- Nullish Coalescing operator,
- optional chaining (ES 2020) etc.

Day 13 (4 Hours)

Module 6: NodeJS Ecosystem
- Modern web app Development
- Big picture of SPA Frameworks and JS libraries.
- Introduction to Angular 2+ (Angular 13)
- Introduction to NodeJS as runtime and Ecosystem

Module 7: TypeScript
- Introduction to TypeScript
    - Typings, Variables and Functions
    - Arrow Functions
    - Classes
    - Inheritance
    - Understanding Imports and Exports
    - Type Annotations
    - Type Inference
    - Grammar

- Static and Dynamic Typing

Day 14 (4 Hours)

Module 8:

- o Angular 13
    - Angular Dev Environment Setup
    - Angular CLI
    - Components – Introduction
    - Create New Angular Project
    - Project Structure
    - Understanding App code
    - How does Angular App Start?
    - Introduction to Webpack
    - Introduction to Components
        - App Module
        - App Component
        - Component Decorator

Day 15 (4 Hours)

- Deep Dive into Components
- Custom Components
    - Generating Components using CLI
    - Understanding Components
    - Component with inline Templates and CSS
    - Flat Components
- Multiple/Inner Components
    - Content Projection
    - Conditional Content Projection
- Using Bootstrap in Angular Project

Day 16 (4 Hours)

- o Angular Routing
- o Single Page Application using Angular Router
    - Understanding Router

- Setting up URL and Configuring Router
- Changing component using router-outlet and changing page title
- Making active menu
- Understanding Router params
- Child Routing
- Routing through Typescript
- Route Params, Query Params
  - Data Binding
    - String Interpolation
    - Property Binding
    - Event Binding
    - Two way Binding

Day 17 (4 Hours)

- Cross Component Interaction
  - Custom Property Binding
  - Custom Event Binding
  - Using @ViewChild()
  - Any to Any component Communication Intro
  - Directives
    - Attribute Directives
      - ngClass, ngStyle
    - Structural Directives
      - *ngIf, *ngFor, ngSwitch

Day 18 (4 Hours)

- Custom Attribute Directives
  - Generating Directives using CLI
  - Debugging
  - Preparing layouts and routing for CRUD App
  - Bootstrap based UI for CRUD App

Day 19 (4 Hours)

  - Working on to Complete CRUD App
  - Angular Forms
    - Template Driven Forms
    - Validating Forms

- Reactive Forms
- Submitting Form data to services
- Services and Dependency Injections
  - Dependency Injection – Intro
  - Configuring Injector and Injectable Decorators
- HTTP Services – GET, POST, PUT, DELETE
  - Generating Services using CLI
  - Setting up services
  - Completing Create New User/Contact

Day 20 (4 Hours)

- Listing all Users/Contacts
- Fetching User/Contact Details
- Updating User/Contact
- Deleting User/Contact
- Completing CRUD app

Day 21 (4 Hours)

- Angular Lifecycle Hooks
  - ngOnInit
  - ngOnDestroy
- RxJS – Intro
- Observables
  - Understanding Observables
  - Http vs HttpClient
  - Subscribing and Unsubscribing
  - Promise

Day 22 (4 Hours)

- Interfaces
- Models
- Feature Modules
  - Creating feature modules for our application
  - Creating Feature Routing Module
  - Lazy Loading a Module
- Polishing the Angular App using Bootstrap
- Using jQuery inside Angular App

Day 23 (4 Hours)

- o Router Guard
    - ▪ Auth and Route Protection and Redirection
    - ▪ Protecting routes with Login Page
    - ▪ Working on Authentication
    - ▪ Signup using Firebase
    - ▪ Login using Firebase
    - ▪ Authentication using HttpInterceptor

Day 24 (4 Hours)
- o Using Custom Directives (Datatables)
- o Introduction to Pipes
    - o Pure Pipes
    - o Impure Pipes
    - o Parameterized pipes
    - ▪ Creating Custom Pipe for our app
- o Using Custom Modules to enrich the Angular App
- o Deploying App
- o Unit Testing (2 Hours)

Day 25 (4 Hours)
- o Demo Day
    - o All participants should demo their apps
    - o App Review and Code Review
    - o Best Practices
    - o Tips and Tricks
- o Q & A

Course Materials

- • **Demo Apps** – Source Code in github.com
- • **Reference Materials in PDF**