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ANGULAR COURSE OUTLINE

Duration   *:* 10 days / 40Hrs (04Hrs/day)

Prerequisites   *:* experienced JavaScript developers with a fairly advanced understanding of JavaScript, including prototypes and functions as first-class citizens.

Software/Hardware   :
- ✓ Windows 10
- ✓ Node Installer
- ✓ 8GB RAM
- ✓ Latest Browser: Chrome, Firefox
- ✓ Any preferred IDE (Sublime, VS Code, Atom etc.)
- ✓ Internet Connection
- ✓ Permission to download and install libraries on participants' machine

Course Outline:

Day 01

1 - Introduction to Angular

- What is Angular?
- Central Features of the Angular Framework
- Why Angular?
- Scope and Goal of Angular
- Angular vs. AngularJS
- Installing and Using Angular
- Adding Angular and Dependencies to Your App
- Building Blocks of and Angular Application
- A Basic Angular Application

2 - Introduction to TypeScript and ES6+

- Programming Languages for Use with Angular
- TypeScript Syntax
- The Type System
- Destructuring – Objects & Arrays
- Class Constructors
- Interfaces
- Parameter and Return Value Types
- Working with Modules
- TypeScript Transpilation
- Arrow Functions
- Template Strings

Day 02

3 - Components in Angular

- What is a Component?
- An Example Component
- Component Starter
- Developing a Simple Login Component
- Component Decorator Properties
- Component Lifecycle Hooks
- Using a Lifecycle Hook: OnInit

4 - Data and Event Binding

- Binding Syntax
- One-Way Output Binding
- Binding Displayed Output Values
- Two-Way Binding of Input Fields
- Input Binding Examples
- Binding Events
- Setting Element Properties

Day 03

5 - Structural Directives

- Structural Directives
- Adding and Removing Elements Dynamically
- Creating Tables/Lists with ngFor
- ngSwitch & ngIf/else

6 - Attribute Directives and Property Bindings

- What are Directives
- Directive Types
- Apply Styles by Changing Classes
- Changing Classes - Example
- Applying Styles Directly
- Directives and Property Binding
- Controlling Element Visibility
- Setting Image Source Dynamically

Day 04

7 - Forms

- Template Driven Forms
- A Basic Angular Form
- Binding Input Fields
- Accessing the Form Object
- Binding the Form Submit Event

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- Basic HTML5 Validation - "required" Attribute
- HTML5 vs. Angular Validation
- Angular Validations
- Displaying Form Validation State
- Displaying Field Validation State
- Displaying Validation State Using Classes
- Disabling Submit when Form is Invalid
- Submitting the Form
- Binding to Object Variables
- Reactive Forms

8 - Pipes and Data Formatting

- What are Pipes?
- Formatting Changes in Angular
- Using a Built-in Pipe
- Using Pipes in HTML
- Chaining Pipes
- Decimal Pipe
- CurrencyPipe
- Custom Pipes

Day 05

9 - Service and Dependency Injection

- What is a Service?
- Creating a Service
- What is Dependency Injection?
- Injecting Services
- Using a Service in a Component: Dedicated Instance
- Using onInit to Initialize Component Data
- Using a Shared Service Instance
- Multi-modules
- Lazy Loading of Module
- Exporting Modules
- Exporting Services

Day 06
- Introduction to RxJS
- Observable Overview
- Working with Operators
    - Creational Operators
    - Filtering Operators
    - Transforming Operators
    - Combination Operators
    - Error Handling
- Subjects
    - Behaviour
    - Replay
    - Async

Day 07

10 - HTTP Client

- The Angular HTTP Client
- Using The HTTP Client - Overview
- Setting up the Root Component
- Service Using Http Client
- Interceptors
- Importing Individual HTTP Providers into Services
- Service Imports
- The Observable object type
- Making a HTTP GET Call
- Using the Service in a Component
- Importing Observable Methods
- Enhancing the Service with .map() and .catch()
- REST API Calls -Json-server
- GET/POST/PATCH/DELETE Request

Day 08

11 - Introduction to Single Page Application

- What is a Single Page Application (SPA)
- SPA Workflow
- Traditional Web Application Capabilities
- Single Page Application Advantages
- Implementing SPA's Using Angular
- Simple SPA Using Visibility Control
- SPA Using Angular

12 - The Angular Component Router

- Routing and Navigation
- The Component Router
- Traditional Browser Navigation
- Component Router Terminology
- Setting up the Component Router
- Configuring Routes
- Bootstrapping Routing
- Programmatic Navigation
- Creating Routes with Route Parameters
- Navigating with Route Parameters
- Using Route Parameter Values
- Retrieving the Route Parameter
- Query Parameters
- Guards at Gate / Authentication

App Preparation & Deployment

Day 09

13 - Unit Testing
- Setting up test environment
- Understanding Karma
- Understanding Jasmine
- Matchers
- Writing Test
- Testing Components
- Testing Services
- Testing Pipes

Day 10

- Tips and Tricks
- Practice
- FAQs
- Conclusion

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