Course duration

- 3 days

Course Benefits

- Develop single page Angular applications using Typescript.
- Set up a complete Angular development environment.
- Create Components.
- Work with Component Templates.
- Build Inter Component Communication.
- Create Template Driven Forms.
- Develop Reactive Forms.
- Services and Dependency Injection.
- Work with the HTTP Client.
- Work with Pipes and Data Formatting.
- Navigate between multiple view screens using the Angular component router.

Available Delivery Methods

Public Class
Public expert-led online training from the convenience of your home, office or anywhere with an internet connection. Guaranteed to run .

Private Class
Private classes are delivered for groups at your offices or a location of your choice.

Course Outline

1. Introducing Angular
    1. What is Angular?
    2. Central Features of the Angular Framework
    3. Appropriate Use Cases
    4. Building Blocks of an Angular Application
    5. Basic Architecture of an Angular Application
    6. Installing and Using Angular
    7. Anatomy of an Angular Application
    8. Running the Application
    9. Building and Deploying the Application

10. Angular for Native Mobile Apps

2. Introduction to TypeScript
    1. Programming Languages for Use with Angular
    2. TypeScript Syntax
    3. Programming Editors
    4. The Type System – Defining Variables
    5. The Type System – Defining Arrays
    6. Basic Primitive Types
    7. Type in Functions
    8. Type Inference
    9. Defining Classes
    10. Class Methods
    11. Visibility Control
    12. Class Constructors
    13. Class Constructors – Alternate Form
    14. Uninitialized Fields
    15. Interfaces
    16. Working with ES6 Modules
    17. var vs let
    18. Arrow Functions
    19. Arrow Function Compact Syntax
    20. Template Strings
    21. Generics in Class
    22. Generics in Function
3. Components
    1. What is a Component?
    2. An Example Component
    3. Creating a Component Using Angular CLI
    4. The Component Class
    5. The @Component Decorator
    6. Registering a Component to Its Module
    7. Component Template
    8. Example: HelloComponent Template
    9. Example: The HelloComponent Class
    10. Using a Component
    11. Run the Application
    12. Component Hierarchy
    13. The Application Root Component
    14. The Bootstrap File
    15. Component Lifecycle Hooks
    16. Example Lifecycle Hooks
    17. CSS Styles
4. Component Templates
    1. Templates
    2. Template Location
    3. The Mustache } Syntax
    4. Setting DOM Element Properties

5. Setting Element Body Text
6. Event Binding
7. Expression Event Handler
8. Prevent Default Handling
9. Attribute Directives
10. Apply Styles by Changing CSS Classes
11. Example: ngClass
12. Applying Styles Directly
13. Structural Directives
14. Conditionally Execute Template
15. Example: ngIf
16. Looping Using ngFor
17. ngFor Local Variables
18. Manipulating the Collection
19. Example - Deleting an Item
20. Item Tracking with ngFor
21. Swapping Elements with ngSwitch
22. Grouping Elements
23. Template Reference Variable

5. Inter Component Communication
    1. Communication Basics
    2. The Data Flow Architecture
    3. Preparing the Child to Receive Data
    4. Send Data from Parent
    5. More About Setting Properties
    6. Firing Event from a Component
    7. @Output() Example - Child Component
    8. @Output() Example - Parent Component
    9. Full Two Way Binding
    10. Setting up Two Way Data Binding in Parent
6. Template Driven Forms
    1. Template Driven Forms
    2. Importing Forms Module
    3. Basic Approach
    4. Setting Up a Form
    5. Getting User Input
    6. Omitting ngForm Attribute
    7. Initialize the Form
    8. Two Way Data Binding
    9. Form Validation
    10. Angular Validators
    11. Displaying Validation State Using Classes
    12. Additional Input Types
    13. Checkboxes
    14. Select (Drop Down) Fields
    15. Rendering Options for Select (Drop Down)
    16. Date fields

17. Radio Buttons

7. Reactive Forms
    1. Reactive Forms Overview
    2. The Building Blocks
    3. Import ReactiveFormsModule
    4. Construct a Form
    5. Design the Template
    6. Getting Input Values
    7. Initializing the Input Fields
    8. Setting Form Values
    9. Subscribing to Input Changes
    10. Validation
    11. Built-In Validators
    12. Showing Validation Error
    13. Custom Validator
    14. Using a Custom Validator
    15. Supplying Configuration to Custom Validator
    16. FormArray - Dynamically Add Inputs
    17. FormArray - The Component Class
    18. FormArray - The Template
    19. FormArray - Values
    20. Sub FormGroups - Component Class
    21. Sub FormGroups - HTML Template
    22. Why Use Sub FormGroups
8. Services and Dependency Injection
    1. What is a Service?
    2. Creating a Basic Service
    3. The Service Class
    4. What is Dependency Injection?
    5. Injecting a Service Instance
    6. Injectors
    7. Injector Hierarchy
    8. Registering a Service with the Root Injector
    9. Registering a Service with a Component's Injector
    10. Register a Service with a Feature Module Injector
    11. Where to Register a Service?
    12. Dependency Injection in Other Artifacts
    13. Providing an Alternate Implementation
    14. Dependency Injection and @Host
    15. Dependency Injection and @Optional
9. HTTP Client
    1. The Angular HTTP Client
    2. Using The HTTP Client - Overview
    3. Importing HttpClientModule
    4. Service Using HttpClient
    5. Making a GET Request
    6. What does an Observable Object do?

7. Using the Service in a Component
8. The PeopleService Client Component
9. Error Handling
10. Customizing the Error Object
11. Making a POST Request
12. Making a PUT Request
13. Making a DELETE Request

10. Pipes and Data Formatting
    1. What are Pipes?
    2. Built-In Pipes
    3. Using Pipes in HTML Template
    4. Chaining Pipes
    5. Internationalized Pipes (i18n)
    6. Loading Locale Data
    7. The date Pipe
    8. The number Pipe
    9. Currency Pipe
    10. Create a Custom Pipe
    11. Custom Pipe Example
    12. Using Custom Pipes
    13. Using a Pipe with ngFor
    14. A Filter Pipe
    15. Pipe Category: Pure and Impure
    16. Pure Pipe Example
    17. Impure Pipe Example
11. Introduction to Single Page Applications
    1. What is a Single Page Application (SPA)
    2. Traditional Web Application
    3. SPA Workflow
    4. Single Page Application Advantages
    5. HTML5 History API
    6. SPA Challenges
    7. Implementing SPA's Using Angular
12. The Angular Component Router
    1. The Component Router
    2. View Navigation
    3. The Angular Router API
    4. Creating a Router Enabled Application
    5. Hosting the Routed Components
    6. Navigation Using Links and Buttons
    7. Programmatic Navigation
    8. Passing Route Parameters
    9. Navigating with Route Parameters
    10. Obtaining the Route Parameter Values
    11. Retrieving the Route Parameter Synchronously
    12. Retrieving a Route Parameter Asynchronously
    13. Query Parameters

14. Supplying Query Parameters
15. Retrieving Query Parameters Asynchronously
16. Problems with Manual URL entry and Bookmarking

Class Materials

Each student will receive a comprehensive set of materials, including course notes and all the class examples.

Class Prerequisites

Experience in the following *is required* for this Angular class:

- Web development experience using HTML, CSS, and JavaScript. Prior Angular experience, with AngularJS or the current version of Angular, is not required.

Experience in the following *would be useful* for this Angular class:

- Knowledge of the browser DOM.

Follow-on Courses

- Intermediate Angular Programming