**Course Name: Angular 8**

**Course Duration: 3-days**

## Overview

Angular is one of the most popular client-side JavaScript frameworks. It is used to create dynamic, interactive and responsive cross platform applications. It is a full-featured Single Page Application (SPA) framework.

This workshop is designed for software professionals who want to learn the basics of Angular and its building blocks in simple and easy steps. It follows a hands-on approach. It is structured around a small sample application. Different concepts will be explained in detail as they are introduced in the application.

## Participants' Profile

The participant should have a good working knowledge of HTML, CSS and JavaScript. Knowledge of Bootstrap is a plus, but not mandatory.

## Benefits

## At the end of this course, the participant will:

- Understand the key building blocks of an Angular application
- Learn to build interactive, single page applications using Angular
- Understand and appreciate the application of emerging concepts like MVC, MVVM, DI, REST, etc.
- Be able to use various Angular features including modules, components, directives, services, pipes and routers

## Sessions Covered:

- Need for frameworks
- Introducing Angular
- Architecture overview
- Typescript
- Setting up Development Environment
- Components & Templates
- Data Binding

- Directives

- Pipes

- Services & Dependency Injection

- Understanding Observables

- Forms & Validation

- Building Single Page Apps using Routing

- Server Communication using Http Client

**Course Content:**

**Day 1:**

**Session 1: Need for frameworks**

- Why do we need a framework?

- Benefits of a framework

**Session 2: Introducing Angular**

- What is Angular?

- Angular versions

- Advantages of Angular

- Traditional web app – Request & response

- Angular app – Request & response

- Where does Angular fit within a modern web app?

**Session 3: Architecture overview**

- Introduction to key building blocks of Angular

**Session 4: Type Script**

- What is Type Script?

- Why Type Script?

**Session 5**: **Setting up Development Environment**

- Introduction to Angular CLI

- Setting up Angular

- Creating an app using Angular CLI

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- Setting up Bootstrap for styling
- How an Angular app gets loaded and started?

**Day 2:**

**Session 6: Components & Templates**

- What is a Component? What are its benefits?
- The Root component
- What are Decorators?
- Understanding the component decorator
- Creating and using components
- Component templates
- Component styles
- Lifecycle Hooks

**Session 7: Data Binding**

- What is Data Binding?
- Interpolation
- Property binding
- Event binding
- Passing and using event data
- Two-way data binding
- Component interaction
    - Parent to child interaction
    - Child to parent interaction

**Session 8: Directives**

- Understanding Directives
- ngIf – Outputting data conditionally
- ngStyle – Styling elements dynamically
- ngClass – Applying CSS classes dynamically
- ngFor – Outputting lists
- Creating custom directives

**Session 9: Pipes**

- Introduction to Pipes
- Using pipes
- Parameterizing pipes
- Chaining multiple pipes
- Creating custom pipes

**Session 10: Services & Dependency Injection**

- Need for a Service
- Creating a service
- Understanding Dependency Injection (DI) and its benefits
- Using a service within a component
- Using a service within another service
- Cross component interaction using a service

**Day 3:**

**Session 11: Understanding Observables**

- Introduction to Reactive Extensions (RxJS)
- Observables
- Creating Observables
- Using Observable operators
- Transforming Observables
- Cancelling Subscriptions

**Session 12: Forms & Validation**

- Template-driven forms vs Reactive forms
- Building a form
- Registering form controls
- Submitting the form
- Understanding form state
- Adding form validation
- Outputting Validation Error messages

- Using two-way binding

- Grouping form controls

- Resetting forms


## Session 13: Building Single Page Apps using Routing

- Need for a Router

- Setting up and loading routes

- Navigating with router links

- Styling active links

- Navigating programmatically

- Passing parameters to routes

- Fetching route parameters

- Passing query parameters

- Retrieving query parameters

- Setting up nested routes


## Session 14: Server Communication

- Introduction to Angular Http Client service

- Sending requests to server

- Getting data from the server

- Sending data to the server

- Handling Http errors

- Adding headers

- URL parameters

- Introduction to interceptors