Advance Angular

1. **Course Name:** Angular 12

2. **Summary:** Training aimed at imparting knowledge to build Rich Internet Application (RIA) using Angular to the participants who are already familiar with Angular basics . This training will cover some key fundamentals in JavaScript OOPS, TypeScript and advanced topics of Angular.

3. **Complexity Level of the Course**: Medium to High

4. **Prerequisite:** Participants must have intermediate web development experience in JavaScript, HTML and OOPs concepts with basics of Angular framework.

5. **Lab Need :**
   - NodeJS
   - SublimeText / VSCode
   - Chrome
   - Windows / Linux or MacBook with minimum 8GB RAM

6. **Course Outline:**

<mark>Day One</mark>
1: Basic Fundamentals

- JavaScript (as a scripting language)
- OOPs in JavaScript
- JavaScript Fundamental Ps in JavaScript
- Event handling in JavaScript
- DOM (Document Object Model)
- Design pattern in JavaScript
- Node / NPM and package.json
- Setting up Angular10 project
- Angular CLI

2: Basic TypeScript

Types and Interfaces

3: Building with Components

- Nested Components
- Deeper Nesting

- Binding and Events

- Dependency Injection and services

- Dependency Injection in depth(providers, useclass, use values etc)

- Directives

- @Input
- @Output

4: Routing

- Introduction and Use
- Creating and configuring Routes
- Imperative Routing
- Routing Parameters
- Child Routes
- Routing Lifecycle Hooks

5: HTTP, Promises, and Observables

- Understanding Observables
- Promises - still available, still useful
- HTTP POST Request
- HTTP GET Request
- Calling an API via HTTP
- Introduction to Observables

6: Introduction to RxJS

- Understanding Observables
- Promises - still available, still useful
- HTTP POST Request
- HTTP GET Request
- Calling an API via HTTP
- Introduction to Observables
- Subject
- Behavior subject

Operators:
- forkJoin,
- zip
- combineLatest
- withLatestFrom

- Use of State Management (ngRx)
- Store
- Action
- Reducer
- Integration of ngRx with Angular

7: Advanced

- Lazy Loading
- Guards
- View encapsulation(virtual DOM and shadow DOM)
  Inspecting generated CSS
  Mixing encapsulation modes
- Change detection and on-push change detection
- Change Detection Strategy
- Improving performance of angular app.

8: Content Projection
- Single-slot content projection
- Multi-slot content projection
- Conditional content projection

9: Testing
- Code Coverage
- Testing services
- Testing Attribute Directives
- Testing Pipes
- Debugging tests
- Testing Utility APIs

10: New features in Angular12/13