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COURSE NAME
Angular

LAB SETUP
<u>Hardware</u> Minimum 4 GB Machines <u>Software</u> Visual Studio Code to be installed Chrome Browser required Node JS Latest Version to be installed Open Internet connectivity

DURATION
5 Days

COURSE CURRICULM

1. **Working with ES6 Features**
    a. Working with Arrow Functions
    b. Working with "let" and "const"
    c. Understanding Spread and Rest Operators
    d. Understanding the "yield" keyword
    e. Working with Generators
    f. Working with ES6 Export and Imports
    g. Working with Classes in JavaScript
    h. Working with Promises
    i. Working with Arrays
    j. Working with New Data Types: Enum, Tuples
    k. Working with "for-of" and "for-in"
    l. Working with Functions

2. **Working with TypeScript**
    a. Understanding JavaScript Object-Oriented Architecture
    b. Working with TypeScript Classes
    c. Public and Private Access Modifiers
    d. Inheritance in TypeScript
    e. Working with Generics
    f. Understanding TypeScript Interfaces
    g. TypeScript to JavaScript Equivalent

3. **Getting Started with Angular**
   a. Setting the Environment
   b. Setting up an Angular Application
   c. Installing an Angular Application
   d. Running an Angular Application
   e. Adding Bootstrap to Angular

4. **Introduction to Components**
   a. What Is a Component?
   b. Creating the Component Class
   c. Defining the Metadata with a Decorator
   d. Understanding Different Component Decorators
   e. Adding Style Urls
   f. Adding Template String
   g. Adding Global Styles to Component
   h. Adding Bootstrap for Styling

5. **Templates, Interpolation, and Directives**
   a. Building a Template File
   b. Using a Component as a Directive
   c. Binding with Interpolation
   d. Adding Logic with Directives: ngIf
   e. Adding Logic with Directives: ngFor
   f. Creating Custom Structural Directives

6. **Data Binding & Pipes**
   a. Property Binding
   b. Handling Events with Event Binding
   c. Handling Input with Two-way Binding
   d. Transforming Data with Pipes

7. **Components, Interfaces, and Lifecycle Hooks**
   a. Defining Interfaces
   b. Encapsulating Component Styles
   c. Using Lifecycle Hooks
   d. Building Custom Pipes
   e. Filtering a List of Data

8. **Working with Nested Components**
   a. Building a Nested Component
   b. Using a Nested Component

     c.   Passing Data to a Nested Component Using @Input
     d.   Passing Data from a Component Using @Output

9. **Services and Dependency Injection**
     a.   Building a Service
     b.   Registering the Service
     c.   Injecting the Service

10. **Retrieving Data Using HTTP**
     a.   Observables and Reactive Extensions
     b.   Sending an HTTP Request
     c.   Exception Handling
     d.   Subscribing to an Observable

11. **Working With SIngle Page Application**
     a.   Understanding Client-Server Architecture
     b.   Advantages of Single Page Application
     c.   Disadvantages of Single Page Application
     d.   Understanding Use Cases for Single Page Applications

12. **Navigation and Routing Basics**
     a.   How Routing Works
     b.   Configuring Routes
     c.   Tying Routes to Actions
     d.   Passing Parameters to a Route
     e.   Activating a Route with Code
     f.   Protecting Routes with Guards

13. **Working with ViewChild and ViewChildren**
     a.   Working with ViewChild
     b.   Using ViewChildren
     c.   ViewChild and Angular Forms

14. **Working with ContentChild and ContentChildren**
     a.   Working with ContentChild
     b.   Using ContentChildren
     c.   Understanding Host Element Binding

15. **Communicating with a Child Component**
     a.   Building Child Components
     b.   Parent to Child Communication
     c.   Input Property
     d.   Watching for Changes
     e.   Template Reference Variable

16. Working with Forms
   a. Creating Forms
   b. Two Way binding Angular Components
   c. Validating Angular Forms
   d. Working with Reactive Forms

17. Communicating Through Observables
   a. Understanding Observables
   b. Working with Subjects
   c. Angular Communication with Subjects

18. Prefetching Data Using Route Resolvers
   a. Providing Data with a Route
   b. Using a Route Resolver
   c. Building a Route Resolver Service
   d. Resolver Error Handling
   e. Adding a Resolver to a Route Configuration

19. Authorization and Authentication
   a. Understanding Authorization and Authentication
   b. Adding Authorization and Authentication to Angular Pages

20. Lazy Loading Components
   a. Building and Serving Our Files
   b. Preparing for Lazy Loading
   c. Lazy Loading
   d. CanLoad Guard
   e. Preloading Feature Modules
   f. Custom Preloading Strategy
   g. Virtual Scrolling of List

21. Building and Deploying with the CLI
   a. Angular CLI Overview
   b. Working with Angular Build
   c. Deploying build to Apache Servers

22. Working with Angular CLI
   a. Commands for Angular Application Creation
   b. Generating and Customizing Applications
   c. Configuring Angular CLI
   d. Common Application Generations Flags
   e. Generating Angular Components with CLI

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23. Working with Test Cases and Sonarqube
    a.   Testing Angular Components
    b.   Understanding Sonar Cube
    c.   Integrating Sonarqube

24. Other Topics
    a.   Migrating Angular Code