Angular 2/4 Training - LP Venkat Shivan - 5 Days - 10 Sessions

Prerequisite : Basic Knowledge of Html, Css, Javascript

Day 1 - First Half

- Evolution of web technologies
- Intro to server/client rendered websites/apps
- What is SPA and Why SPA ?
- Introduction to Angular 2 (Next Generation Angular)
- Component Oriented Web Development - Introduction/Explanation
- Node and npm basics, Setting up Node/npm locally
- Angular 2 Fundamentals
- Why Angular and now Angular 2 ?
- Popular Editors/IDE used
- Building Blocks/Architecture of Angular 2
- Angular 2 website introduction/documentation/api reference guide
- Introduction to Angular CLI
- Angular CLI installation and starting a new project
- VS Code Installation and overview
- Angular CLI project core files and commands overview
- Introduction to Angular Components/Modules
- Templates/Styles demonstrated
- Hello world application
- Application Bootstrapping and demo

Day 1 - Second Half

- Quick brushup of Javascript
- Introduction to ES6/ES7 standards
- What is Typescript?
- Typescript Installation and Running
- Typescript Basics
- Built in data types in Typescript
- Difference between let and var
- Const and Template strings
- Fat arrow functions and usage
- Various for loop constructs
- Maps and Sets
- Asynchronous Programming and Callbacks

Day 2 - First Half

- Introduction to object oriented programming
- Functional vs object oriented programming
- Object Orientation in javascript
- Typescript classes
- Inheritance for reusing code
- Access Modifiers, constructor shortcut
- Interfaces and its use
- Decorators and arguments to decorators
- Introduction to modules in javascript
- Module loading, ES6 modules

- Exporting and Importing
- Default Exports
- Introduction to and usage of Generics
- Type Inference

Day 2 - Second Half
- Data Binding
- Interpolation (One way Binding)
- Property Binding
- Event Binding
- Two way Binding (NgModel)
- Nested Components (Parent/Child Component Relationship)
- Component communication using property/event binding
- Details and demo of Custom property Binding
- Details and demo of Custom Event Binding
- Directives Introduction
- Structural Directives
- NgFor and NgIf Demo
- Attribute Directives
- NgStyle and NgClass Demo
- Introduction to Pipes
- Build in pipes and demo
- Writing custom pipes for filtering data

Day 3 - First Half
- Setting up chrome debugger for Angular apps
- Installing and setting up Augury chrome extension for debuggin
- Introduction to Routing
- Browser's navigation model
- How urls work in real world
- Server side routing in MVC apps
- Why client side routing in Angular or any framework?
- Introduction to Angular routing
- Introduction to Router Module, Routes, ForRoot methods
- How to define the routes array and setup routing in a module
- Router Configuration - static/dynamic routes
- Default Routes, Fallback Routes
- RouterOutlet and RouterLink Directives
- RouterLinkActive and ActivatedRoute Service
- How to navigate to routes programmatically

Day 3 - Second Half
- How to group common routes using child routes
- Configuration and demo of child routes
- Route parameters - Reading Route params
- Query Params - Reading Query params
- Specifying Route/query params in links
- Programmatically navigating to routes with query/route params
- Introduction to Feature Modules
- Demo of having a separate module

- Setting up routing inside a new module, i.e per module routing
- Route Guards - CanActivate and CanDeactivate implementation
- Protect admin pages with Route Guards

Day 4 - First Half

- Introduction to Dependency Injection
- Dependency Injection in Angular 2
- @Inject() and @Injectable
- Introduction to Services
- Writing a service in Angular 2
- Injecting services in other components
- Observables
- Introduction to RxJs
- RxJs Operators and its use in Angular 2
- Working with Angular 2 Http service
- Http service observable handling
- Writing a simple Node backend for REST Apis
- Full CRUD demo using Angular's Http service
- Handling success and Error codes

Day 4 - Second Half

- Introduction to Forms
- FormsModule and NgModel explanation
- Template Driven Forms
- Template variables and its uses
- How Angular maintains form states
- How to do validation in template driven forms
- Model Driven or Reactive Forms
- Advantages of reactive forms
- FormBuilder and its usage
- Handling Form submission
- Form Controls and Form Groups
- Form Validations
- Input Validations
- Angular's inbuilt validators
- Styling form elements based on state
- Displaying Validation Messages

Day 5 - First Half

- Introduction to Authentication and Authorization
- A sample user login process
- Introduction to JWT and its usage in SPA apps
- How to store JWT in local storage
- How to generate JWT in Node.js or other backends
- Introduction to Authorization and demo
- How to use alert services for notifications
- Introduction to Subject in Rxjs

Day 5 - Second Half

- Introduction to production builds
- Difference between dev and production builds
- Creating production build using CLI command
- Deploying a production build to a backend server
- Various other options in the cloud for Node deployment of Angular apps
- AOT compilation
- Difference between JIT and AOT compiled apps
- Demo of how to use a 3rd party grid library
- Writing a custom angular library of our own
- Advantages and disadvantages
- Intro to how Angular can be used for Mobile or Desktop apps