**Experiment No.: 02**

**Title:** Create a simple web app using angular.

**Objectives:**

1. To explain different basic building blocks of angular application.

**Theory:**

Angular is a popular open-source web application framework maintained by Google and a community of developers. It's used for building dynamic, single-page web applications (SPAs) and progressive web apps (PWAs). Angular provides a comprehensive set of tools and libraries for simplifying the development and testing of complex web applications.

**Key features of Angular include:**

1. Component-Based Architecture: Angular applications are built using components, which are reusable and encapsulate both the UI and the logic of a specific part of the application.
2. Two-Way Data Binding: Angular's data binding system automatically synchronizes data between the model and the view, making it easy to build responsive and interactive user interfaces.
3. Dependency Injection: Angular's dependency injection system allows components and services to be loosely coupled, making it easier to manage dependencies and write testable code.
4. Directives: Angular provides a variety of built-in directives that allow you to extend HTML with new behavior and functionality. Directives like ngFor, ngIf, and ngModel are commonly used in Angular applications.
5. Services and Dependency Injection: Angular encourages the use of services to encapsulate shared logic and data across multiple components. Dependency injection allows services to be easily injected into components, making it easy to write modular and reusable code.
6. Routing: Angular's built-in router allows you to define navigation paths and route parameters, making it easy to create multi-page applications with different views and URLs.
7. Forms: Angular provides powerful features for building and validating forms, including template-driven forms and reactive forms.
8. HTTP Client: Angular includes a built-in HTTP client module for making HTTP requests to a server, making it easy to work with RESTful APIs and other backend services.

**Installation Steps:**

Here's a step-by-step procedure to create a basic Angular app:

1. Install Angular CLI: First, you need to have Node.js installed on your machine. Then, you can install Angular CLI globally by running the following command in your terminal:

*npm install -g @angular/cli*

1. Create a new Angular project: Once Angular CLI is installed, you can create a new Angular project using the following command:

*ng new my-angular-app*

This will create a new directory named my-angular-app and scaffold a new Angular project inside it.

1. Navigate to your project directory: Move into your project directory using the cd command:

*cd my-angular-app*

1. Serve the application: Run the following command to start the development server and serve your Angular application:

*ng serve*

This will compile your Angular app and make it available at http://localhost:4200/ by default.

**Folder Structure:**

* src: This folder contains the source code for your Angular project.
* app: This folder contains the main application code.
* assets: This folder contains static files like images, fonts, and other assets.
* environments: This folder contains environment-specific configuration files.

Inside the src folder, the app folder contains your project's logic and data. Angular components, templates, and styles go here.

|  |  |
| --- | --- |
| **File** | **Purpose** |
| app/app.config.ts | Defines the application config logic that tells Angular how to assemble the application. As you add more providers to the app, they must be declared here. |
| app/app.component.ts | Defines the logic for the application's root component, named AppComponent. The view associated with this root component becomes the root of the [view hierarchy](https://angular.io/guide/glossary#view-hierarchy) as you add components and services to your application. |
| app/app.component.html | Defines the HTML template associated with the root AppComponent. |
| app/app.component.css | Defines the base CSS stylesheet for the root AppComponent. |
| app/app.component.spec.ts | Defines a unit test for the root AppComponent. |

**Key Concept:** Angular, Angular CLI, npm

**Steps:**

1. Install Nodejs on your machine

2. Install angular cli using command *npm install –g @angular/cli*

3. Create a sample angular app using *ng new my-first-app*

4. Navigate to my-first-app and specify command *ng serve.*

5. Check the result in browser with url http://localhost:4200