**Experiment No.: 03**

**Title:** Demonstrate data binding and event binding in angular

**Objectives:**

1. To demonstrate flow of data from component to template and from template to component.

**Theory:**

Data binding in Angular refers to the automatic synchronization of data between the model (component) and the view (template). There are mainly two types of data binding in Angular:

**1. One-way Data Binding:**

Data flows in one direction, from the component class to the template (view). There are two ways to send the data from component class to template.

**a. Interpolation:**

Interpolation is a way to bind data from the component class to the HTML template. It allows you to dynamically embed expressions into marked-up text by wrapping them in double curly braces {{ }}. Angular evaluates the expression within the braces and replaces it with the result. Interpolation is primarily used for one-way data binding from the component class to the template. Example:

*<p>Welcome, {{ userName }}</p>*

**b. Property Binding:**

Property binding allows you to set an element's property value dynamically from a component class property. It binds a property of an HTML element to a property of a component class. You use square brackets [] to denote property binding in the template. Property binding is primarily used for one-way data binding from the component class to the template. Example:

*<img [src]="imageUrl">*

Here, [src] is binding the src property of the img element to the imageUrl property in the component class.

Another concept, event binding enables the communication from the template (view) to the component class, allowing the component to respond to user actions.

**Event Binding:**

Event binding allows you to listen for and respond to DOM events, such as clicks, mouseovers, key presses, etc. It binds an event of an HTML element to a method in the component class. You use parentheses () to denote event binding in the template. When the event is triggered, the corresponding method in the component class is executed. Event binding is primarily used for handling user input and interaction. Example:

*<button (click)="onButtonClick()">Click Me</button>*

Here, (click) is binding the click event of the button element to the onButtonClick() method in the component class.

**2. Two-way Data Binding:**

Data flows in both directions, from the component class to the template, and vice versa. Example:

1. Component Class (app.component.ts):

*import { Component } from '@angular/core';*

*@Component({*

*selector: 'app-root',*

*templateUrl: './app.component.html',*

*styleUrls: ['./app.component.css']*

*})*

*export class AppComponent {*

*name: string = 'John Doe';*

*}*

2. Template (app.component.html):

<input type="text" [(ngModel)]="name" placeholder="Enter your name">

<p>Your name is: {{ name }}</p>

In this example, [(ngModel)]="name" is an example of two-way data binding. It binds the value of the input field to the name property in the component class. Any changes made to the input field will update the name property in the component class, and vice versa.

Both one-way and two-way data binding are powerful features of Angular that simplify the process of synchronizing data between the component class and the template, making it easier to build dynamic and responsive web applications.

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

**Steps:**

1. Create Angular App with name my-first-app.

2. In component.ts file define one variable url.

3. Display url value with interpolation

4. Bind the url with src property of img element.

5. Create one button in html page. Display ‘hello world’ message on console when user clicks on button.

5. Create one text box and show the typed content on html page as soon as user types in it.