Angular with Bootstrap, Data Binding

Presented by

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Installing Bootstrap in Angular App

- **Installing Bootstrap**
  - Navigate to angular app in command line.
  - Use npm to install Bootstrap 4 as follows :

```
npm install bootstrap
```

- **Adding Bootstrap to Your Angular Project**
  - Open angular.json and find styles array
  - Add the path to Bootstrap's CSS file as follows:

```
"styles": [
  "src/styles.css",
  "node_modules/bootstrap/dist/css/bootstrap.min.css"
],
```

Using Bootstrap in Angular?

- Use Bootstrap classes in html file.

```
<div class="container mt-5">
 <h1 class="text-center">Welcome to Angular with Bootstrap</h1>
  <div class="row">
   <div class="col-md-6">
```

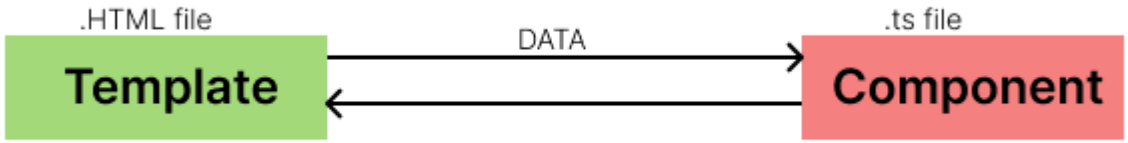
  - *Not adding <link> tag with CDN url*

- Navigate to *http://localhost:4200* in your browser, and you should see your Angular app styled with Bootstrap.

**Demo - Bootstrap with table data

What is Data Binding in Angular?

- Data binding is a mechanism that automatically synchronizes data between component's properties and the HTML template.
- In simpler terms, it's a way to bind the data (variables, objects, arrays, etc.) defined in your TypeScript code to your HTML template, and vice versa.



Types Data Binding in Angular

- **1. One-way binding :**
  - One-way data binding in Angular refers to the flow of data from the component to the view (or vice versa) in a single direction.
  - This approach ensures that changes in the component's data are reflected in the view, but not the other way around.
  - Types of One-Way Data Binding
    - Interpolation
    - Property Binding

Interpolation

- Interpolation :
  - Interpolation is used to display component data in the view.
  - It involves placing expressions within double curly braces ({{ }}) in the HTML template.

Interpolation …

- Component

Template

```ts
// app.component.ts
import { Component } from '@angular/core';

@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  message = 'Hello, Angular!';
}
```

```html
<!-- app.component.html -->
<p>{{ message }}</p>
```

** Demo

Property Binding

- Property binding is one way from component to view.
- It lets to set a property of an element in the view[html] to property in the component[xxx.component.ts].
- This is done using square brackets ([ ]).
- Ex:

```
export class AppComponent {
  title = 'angular-oneway-property-binding';
  name = 'Aarush';
  isDisabled=true;
}
```

```
<h1 [innerText]="name">Name is replaced here</h1>
<p>Hello, {{ name }}!</p>
<button [disabled]="isDisabled">I am disabled</button>
```

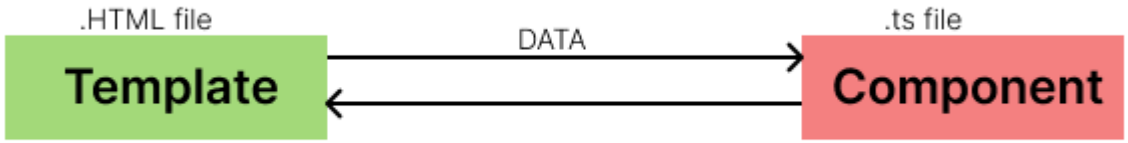
Property of <h1>

Property of <button>

** Demo

Two-way binding

- Two way binding allows to synchronize data between component's properties and the view in both directions.
- This means that any changes made to the component's property will be reflected in the view, and any changes made in the view will be updated in the component's property.
- It eliminates the need of manual updates



Two-way binding …

- The **[(ngModel)]** directive is used to establish two-way data binding between the name property of the component and the value attribute of the input element.
- Any changes made to the input field will be automatically reflected in the name property, and vice versa.
- Ex:
- app.component.ts

```
export class AppComponent {
  name = 'Arush';
}
```

app.component.html

```
<h1>Two-way Binding Example</h1>
<p>Enter User Name : <input [(ngModel)]="name" /> </p> <br/>
<p> Welcome, {{name}} </p>
```

** Demo

Event binding

- Event binding is a mechanism in Angular that allows you to bind component methods to HTML element events, i.e., click, keypress etc.
- When an event occurs on an HTML element, the specified component method is triggered, enabling you to perform actions based on the event.
- Method to trigger an event

```
clickCount=0;
  clickMe() {
    this.clickCount++;
  }
```

Event delegation

```
<button (click)="clickMe()">Click Me</button>
```

```
<span style="color: red">{{clickCount}} </span>
```

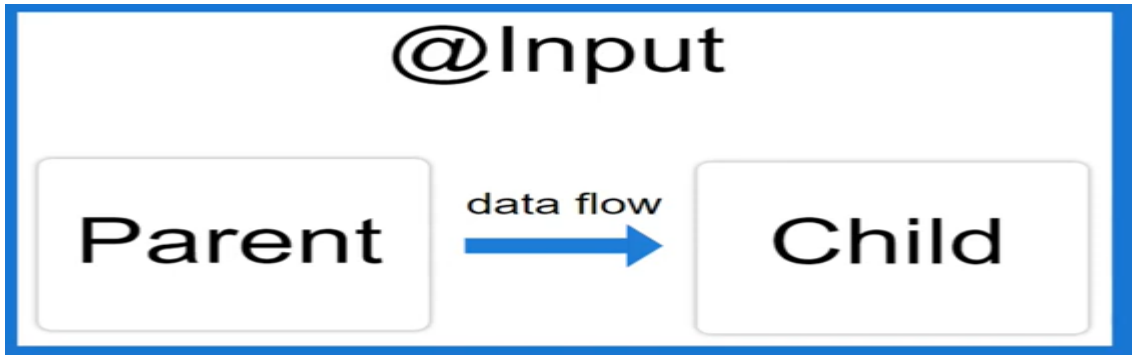
** Demo

Passing / Sharing data b/w components

- Data sharing between components in Angular refers to exchanging data between them.
- Components are usually required to communicate and exchange data to perform their functions.
- There are four Methods to Share Data between Angular Components:
  - Parent-to-Child: Sharing Data via **@Input**
  - Child-to-Parent: Sharing Data via **@Output** and **EventEmitter**

Parent to Child communication

- **1. Parent to Child Communication**
- Using **@Input** Decorator
- When you need to pass data from a parent component to a child component, you can use the **@Input** decorator.

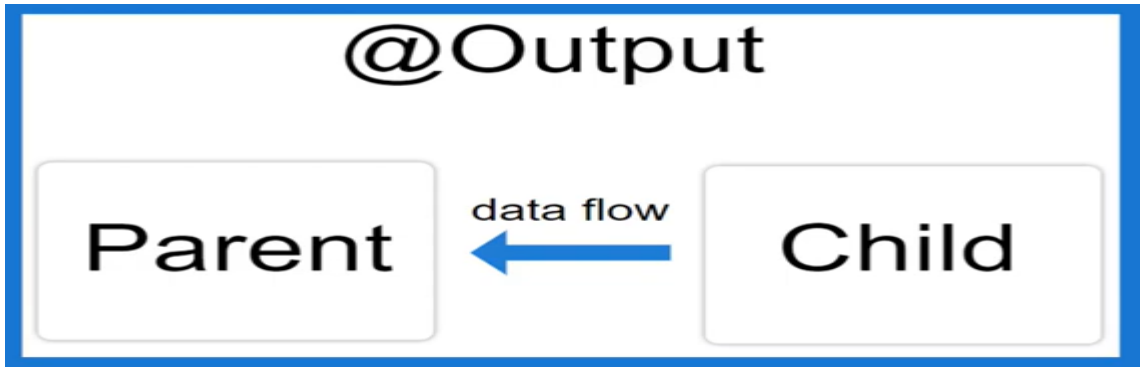


- C:\..\..>>**ng generate component child**

**Demo

Child to Parent Communication

- **2. Child to Parent Communication**
  - Using **@Output** Decorator and **EventEmitter**
- To send data from a child component back to the parent, use the **@Output** decorator and **EventEmitter.**



**Demo

Directives in Angular

Directives are classes that add behavior to elements in Angular applications.

1. **Structural Directives:** Change the DOM layout by adding or removing elements (e.g., *ngIf, *ngFor).

   These directives are prefixed with an asterisk (*) in the template.

   They are responsible for modifying the DOM structure.

   The most commonly used structural directives in Angular are *ngIf, *ngFor, and *ngSwitch

   ** Demo

Directives in Angular

1. **Attribute Directives:**

   Angular provides several built-in attribute directives, such as **ngClass**, **ngStyle**, **ngModel**, and more.

   These directives are used to apply classes, styles, and other attributes dynamically.

** Demo

Thank You