SSGMCE	SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGG.	LABORATORY MANUAL
	PRACTICAL EXPERIMENT INSTRUCTION SHEET	
	EXPERIMENT TITLE: WORKING WITH ANGULAR DIRECTIVES.	

EXPERIMENT NO.: **SSGMCE-WI-**IT-5IT09-05	ISSUE NO.: 00	ISSUE DATE: 30-07-2023
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1.0) AIM: To study and implement different Angular directives such as ngIf, ngFor, ngClass, and ngStyle for dynamic rendering and styling of HTML elements.

2.0) SCOPE:

The purpose of this experiment is to understand how Angular directives can control the structure, iteration, and styling of DOM elements. This includes structural directives like ngIf and ngFor, and attribute directives like ngClass and ngStyle.

3.0) FACILITIES/ APPARATUS:

i)Hardware: I3 Processor, 8GB RAM, HD Monitor, Windows 10, Internet connectivity

ii) Software: Updated Web browser, Node js, Angular CLI, VS Code.

4.0) THEORY:

Angular directives are special instructions in the DOM. They are used to manipulate the DOM by adding, removing, or modifying elements and their properties.

- **ngIf:** Conditionally includes a template based on a Boolean expression.
- **ngFor:** Repeats a template for each item in a list.
- **ngClass:** Adds or removes CSS classes dynamically.
- **ngStyle:** Applies inline styles dynamically.

1. **Create a new Angular project**:

```
ng new directives-demo
cd directives-demo
ng serve
```

2. **Implement different directives in the component** :

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

@Component({
  selector: 'app-directives',
  standalone: true,
  templateUrl: './directives.html',
  styleUrls: ['./directives.css']
})
```

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```
export class DirectivesComponent {
  showMessage = true;
  items = ['Angular', 'React', 'Vue'];
  isSpecial = true;
  myStyles = {
    'color': 'white',
    'background-color': 'green',
    'padding': '5px'
  };
}
import { Component } from '@angular/core';
```

3. **Bind data to directives in the HTML template.**

```
<div style="text-align:center; margin-top:20px;">
  <h1>Angular Directives Example</h1>
  <!-- ngIf -->
  <p *ngIf="showMessage">This message is conditionally displayed using ngIf.</p>
  <!-- ngFor -->
  <ul>
    <li *ngFor="let item of items">{{ item }}</li>
  </ul>
  <!-- ngClass -->
  <p [ngClass]="{'special-class': isSpecial}">This text has dynamic class.</p>
  <!-- ngStyle -->
  <p [ngStyle]="myStyles">This text has dynamic styles.</p>
</div>
```

4. **Run the application using:**

   ng serve:

5. **Observe how directives control the DOM dynamically:**

   - When **`ngIf`** is applied, the HTML element is **completely removed or added** to the DOM depending on the condition's Boolean value.
   - The **`ngFor`** directive generates **a separate DOM element for each item** in the provided list and updates the list dynamically when the data array changes.
   - Using **`ngClass`**, CSS classes are **added or removed in real time** based on the component property values, allowing style changes without reloading the page.
   - **`ngStyle`** dynamically changes the **inline styles** of an element whenever the corresponding data in the component changes.
   - • Any change in component data instantly reflects in the DOM **without manual DOM manipulation**, showing Angular's reactive data-binding capability.

5.0) Conclusion:

The experiment successfully demonstrated the use of Angular directives. We implemented ngIf for conditional rendering, ngFor for iteration, ngClass for dynamic class binding, and ngStyle for applying styles dynamically.

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