



by **Kunal Sir**

Angular Directives

❖ What is Directives in Angular?

In Angular, Directives are nothing but classes that extend the existing behaviour of an element in the template.

Directives are also used for conditional rendering of elements.

Directives add power to the HTML element with new syntax.

In Angular there are three types of directives.

1. Component Directive.
2. Structural Directive.
3. Attribute Directive.
4. Custom Directive.

1. Component Directives :-

Angular Component are the special directive in Angular, as they are capable to define part of DOM object or manipulate DOM object.

2. Structural Directives:-

Structural directives are used to make changes in the layout of the DOM. Elements can be added or removed, hence changes in DOM structure happen.

There are several built-in structural directives as below.

1. *ngIf
2. *ngFor
3. *ngSwitch



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1. ***ngIf :-** this build in directive allows us to achieve expression based rendering of an elements.

Example:

◆ Snippet of app.component.ts .

```
src > app > app.component.ts > AppComponent > student > "marks"
1  import { Component } from '@angular/core';
2
3  @Component({
4    selector: 'app-root',
5    templateUrl: './app.component.html',
6    styleUrls: ['./app.component.css']
7  })
8  export class AppComponent {
9
10     student:any={
11         "rollno":101,
12         "name":"xyz",
13         "marks":23
14     }
15
16 }
```

◆ Snippet of app.component.html

```
src > app > app.component.html > ...
Go to component
1  |
2  <h1 *ngIf="student.marks>35 ;else fail">
3  |   Congratulations ...!
4  </h1>
5  <ng-template #fail>
6  |   <h1> Better Luck Next Time..!</h1>
7  </ng-template>
8  |
```



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Note:- ng-template defines the template that doesn't render by default.

◆ Example Snap:-

The screenshot shows the Visual Studio Code editor with a project named 'directivesProject'. The Explorer panel on the left shows the file structure, with 'src/app/module1/structural-directives/structural-directives.component.ts' selected. The main editor displays the content of this file, which is a TypeScript class 'StructuralDirectivesComponent' implementing 'OnInit'. The code includes imports for 'Component' and 'OnInit' from '@angular/core', a component decorator with 'selector', 'templateUrl', and 'styleUrls', and an 'ngOnInit' method that initializes 'names' and 'months' arrays. The terminal at the bottom shows the Windows PowerShell prompt with the current directory set to 'G:\CJC\Angular Learning\AngularWorkspace\directivesProject'.

```
src > app > mod > module1 > structural-directives > TS structural-directives.component.ts > StructuralDirectivesComponent > choice
1 import { Component, OnInit } from '@angular/core';
2
3 @Component({
4   selector: 'app-structural-directives',
5   templateUrl: './structural-directives.component.html',
6   styleUrls: ['./structural-directives.component.css']
7 })
8 export class StructuralDirectivesComponent implements OnInit {
9
10  constructor() { }
11
12  ngOnInit(): void {
13  }
14
15  names:number[]=[1,2,3,4,5];
16  months:number[]=[];
17
18  choice!:string;
19 }
20
```

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS G:\CJC\Angular Learning\AngularWorkspace\directivesProject>



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```
src > app > mod > module1 > structural-directives > structural-directives.component.html > div > div
1 <p>structural-directives works!</p>
2
3 <!-- if block only -->
4 <div *ngIf="names.length>0">
5   <div *ngFor="let e of names">
6     {{e}}
7   </div>
8 </div>
9
10 <!-- If else block -->
11 <div *ngIf="months.length>0, else abc">
12   <div *ngFor="let e of months">
13     {{e}}
14   </div>
15 </div>
16 <ng-template #abc>Array is empty</ng-template>
17
18 <!-- Finding index of array -->
19 <h3>Finding index of array:</h3>
20 <div *ngFor="let e of names, index as i">
21   Index is: {{i}} and Data is: {{e}}
22 </div>
23
24
25 <h3>Finding EVEN index of array:</h3>
26 <div *ngFor="let e of names, index as i, even as ei">
27   <div *ngIf="ei" style="color: red;">
28     {{i}} {{e}}
29   </div>
30 </div>
```



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```
25 <h3>Finding EVEN index of array:</h3>
26 <div *ngFor="let e of names, index as i, even as e1">
27   <div *ngIf="e1" style="color: red;">
28     {{i}} {{e}}
29   </div>
30 </div>
31
32 <h3>Finding ODD index of array:</h3>
33 <div *ngFor="let e of names, index as i, odd as e1">
34   <div *ngIf="e1" style="color: blue;">
35     {{i}} {{e}}
36   </div>
37 </div>
38
39 <h3>Finding First index of array:</h3>
40 <div *ngFor="let e of names, index as i, first as f">
41   <div *ngIf="f" style="color: crimson;">
42     {{i}} {{e}}
43   </div>
44 </div>
45
46 <h3>Finding LAST index of array:</h3>
47 <div *ngFor="let e of names, index as i, last as f">
48   <div *ngIf="f" style="color: darkviolet;">
49     {{i}} {{e}}
50   </div>
51 </div>
52
```

1) Attribute Directive

i)ngStyle

ii)ngClass



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```
src > app > mod > module1 > attribute-directive > attribute-directive.component.html > div
1  <p>attribute-directive works!</p>
2
3
4  <div [ngStyle]="{'color':'red'}">
5    | Angular Directive example
6  </div>
7
8  <div [ngClass]="{'abc':true}">
9    | Angular Directive second example
10 </div>
11
12 <div [ngStyle]="{'color':'red'}" [ngClass]="{'abc':true}">
13 | Angular Directive Third example
14 </div>
15
16 <div [ngStyle]="getColor()" [ngClass]="{'abc':true}">
17 | Angular Directive Third example
18 </div>
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
CREATE src/app/mod/module1/struct-directive/struct-directive.component.css (0 bytes)
UPDATE src/app/mod/module1/module1.module.ts (746 bytes)
PS G:\CJC\Angular Learning\B135\FirstAngularDemo> ng g c mod/module1/attribute-directive
CREATE src/app/mod/module1/attribute-directive/attribute-directive.component.html (34 bytes)
CREATE src/app/mod/module1/attribute-directive/attribute-directive.component.spec.ts (711 bytes)
CREATE src/app/mod/module1/attribute-directive/attribute-directive.component.ts (326 bytes)
CREATE src/app/mod/module1/attribute-directive/attribute-directive.component.css (0 bytes)
UPDATE src/app/mod/module1/module1.module.ts (904 bytes)
PS G:\CJC\Angular Learning\B135\FirstAngularDemo>
```




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```
src > app > mod > module1 > attribute-directive > # attribute-directive.component.css > ...
1
2   .abc {
3     font-style: italic;
4     background-color: yellow;
5   }
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE
CREATE src/app/mod/module1/struct-directive/struct-directive.component.css (0 bytes)
UPDATE src/app/mod/module1/module1.module.ts (746 bytes)
PS G:\CJC\Angular Learning\B135\FirstAngularDemo> ng g c mod/module1/attribute-directive
CREATE src/app/mod/module1/attribute-directive/attribute-directive.component.html (34 bytes)
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UPDATE src/app/mod/module1/module1.module.ts (904 bytes)
PS G:\CJC\Angular Learning\B135\FirstAngularDemo>
```

```
src > app > mod > module1 > attribute-directive > TS attribute-directive.component.ts > AttributeDirectiveComponent
1 import { Component, OnInit } from '@angular/core';
2
3 @Component({
4   selector: 'app-attribute-directive',
5   templateUrl: './attribute-directive.component.html',
6   styleUrls: ['./attribute-directive.component.css']
7 })
8 export class AttributeDirectiveComponent implements OnInit {
9
10  constructor() { }
11
12  ngOnInit(): void {
13  }
14
15  getColor(){
16    return {'color':'blue'}
17  }
18
19 }
```