



Angular (Part – 2)

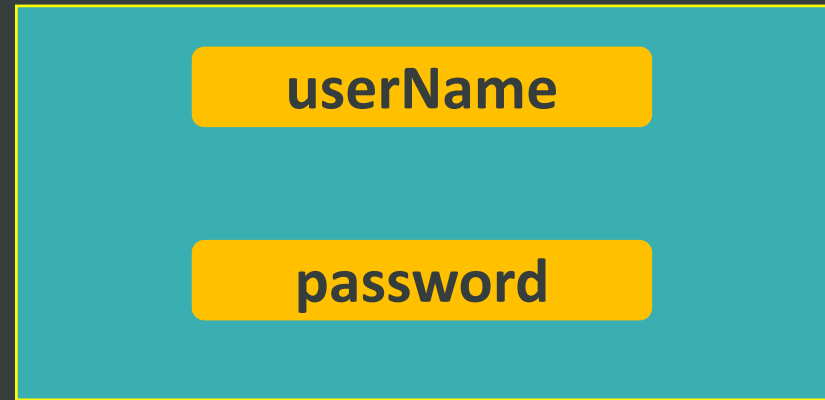
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Content

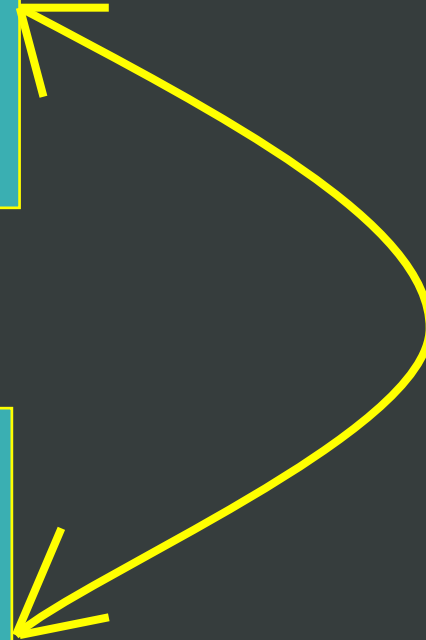
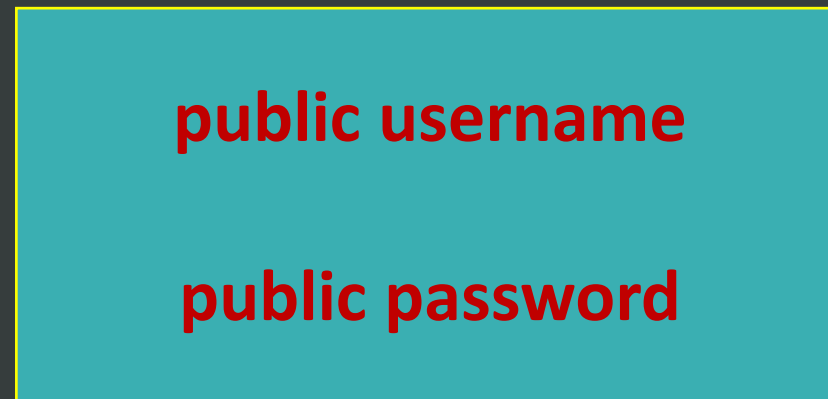
- Two-way Binding
- Pipes
- Structural Directives
- Custom Attributes

Two Way Binding

View



Class



Two Way Binding ([(ngModel)])



Banana in a Box

```
<input [(ngModel)]="username">
```

```
<p>Hello {{username}}!</p>
```

app.module.ts

```
import { FormsModule } from '@angular/forms';
@NgModule({
  ...
  imports: [
    BrowserModule,
    FormsModule           //contains ngModel
  ],
  ...
})
```

Two Way Binding (without ngModel)

Model to View
(property binding)

View to Model
(event binding)

<input

[value]="username"

(input)="username = \$event.target.value"

>

<p>Hello {{username}}!</p>

Pipes (|)

- Every application starts out with:
 - get data
 - transform them, and
 - show them to users
- A **pipe** takes in data as **input** and **transforms** it to a **desired output**

Pipes (|)

```
<h2> {{ birthday }} </h2>
```

```
public birthday : Date = new Date(1979, 6, 30);
```

```
//JavaScript counts months from 0 to 11
```

Mon Jul 30 1979 00:00:00 GMT+0530 (India Standard Time)

Pipes (|)

```
<h2> {{ birthday | date }} </h2>
```

```
public birthday : Date = new Date(1979, 6, 30);
```

```
//JavaScript counts months from 0 to 11
```

Jul 30, 1979

Pipes (|)

```
<h2> {{ birthday | date : 'd/M/y' }} </h2>
```

```
public birthday : Date = new Date(1979, 6, 30);
```

```
//JavaScript counts months from 0 to 11
```

30/7/1979

Chaining of Pipes (|)

```
<h2> {{ birthday | date | uppercase }} </h2>
```

JUL 30, 1979

Built-in Pipes (|)

CurrencyPipe

DatePipe

DecimalPipe

JsonPipe

LowerCasePipe

UpperCasePipe

PercentPipe

SlicePipe

AsyncPipe

Pipes Examples (|)

{{ 1234.56 | currency : 'INR' }} **₹1,234.56**

{{ 0.123456 | percent : '2.1-3' }} **12.346%**

{{ [1, 2, 3, 4, 5, 6] | slice : 1 : 3 }} **2,3**

Custom Pipes (|)

Run following angular-cli command in the component directory where you wish to use pipe

ng g p mypower

g – generate

p – pipe

mypower – name of the pipe

app.module.ts

...

```
import { MypowerPipe } from './test/mypower.pipe';
@NgModule({
  declarations: [
    AppComponent, TestComponent, MypowerPipe
  ],
  imports: [ BrowserModule, FormsModule ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

mypower.pipe.ts

```
import { Pipe, PipeTransform } from '@angular/core';  
  
@Pipe({  
  name: 'mypower'  
})  
  
export class MypowerPipe implements PipeTransform {  
  transform(value: number, exponent?: string): number {  
    let exp = parseFloat(exponent)  
    return Math.pow(value, isNaN(exp) ? 1 : exp)  
  }  
}
```

<h3> {{ 2 | mypower : '6' }} </h3>

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Directives

Directives is a class, which is declared as **@Directive**. We have 3 directives in Angular.

1. **Component Directives**: directives with a template (**app-root**)
2. **Structural Directives**: change the DOM layout by adding and removing DOM elements (e.g. ***ngIf**, ***ngFor**, ***ngSwitch**)
3. **Attribute Directives**: change the appearance or behaviour of an element, component, or another directive (built-in : **ngStyle**, **ngClass**, **ngModel**)

Structural Directives

- Add/remove HTML elements to/from DOM
- `ngIf`
- `ngSwitch`
- `ngFor`

*ngIf Directive

```
<h2 *ngIf = "true"> Good Morning</h2>
```

OR

```
<h2 *ngIf = "isMorning"> Good Morning</h2>
```



Class Property

*ngIf with else

```
<h2 *ngIf = "isMorning; else elseBlock">
```

Good Morning

```
</h2>
```

```
<ng-template #elseBlock>
```

```
<h2>
```

Good day!

```
</h2>
```

```
</ng-template>
```

*ngIf with then and else

```
<div *ngIf = "isMorning; then thenBlock else elseBlock"> </div>
```

```
<ng-template #thenBlock>
```

```
  <h2>    Good Morning!    </h2>
```

```
</ng-template>
```

```
<ng-template #elseBlock>
```

```
  <h2>    Good day!    </h2>
```

```
</ng-template>
```

*ngSwitch



```
<div [ngSwitch]="color">
```

```
<h2 *ngSwitchCase="red"> You picked up red </h2>
```

```
<h2 *ngSwitchCase="green">You picked up green </h2>
```

```
<h2 *ngSwitchCase="blue">You picked up blue </h2>
```

```
<h2 *ngSwitchDefault>Pick again </h2>
```

```
</div>
```

***ngFor**



```
<div *ngFor = "let color of colors">
```

```
  <h2> {{ color }} </h2>
```

```
</div>
```

*ngFor



```
<div *ngFor = "let color of colors; index as i">
```

```
  <h2> {{ i }} {{ color }} </h2>
```

```
</div>
```


*ngFor



```
<div *ngFor = "let color of colors; first as f">
```

```
  <h2> {{ f }} {{ color }} </h2>
```

```
</div>
```

*ngFor



```
<div *ngFor = "let color of colors; last as I">
```

```
  <h2> {{ I }} {{ color }} </h2>
```

```
</div>
```

*ngFor



```
<div *ngFor = "let color of colors; odd as o">
```

```
  <h2> {{ o }} {{ color }} </h2>
```

```
</div>
```

*ngFor



```
<div *ngFor ="let color of colors; even as e">
```

```
  <h2> {{ e }} {{ color }} </h2>
```

```
</div>
```

Built-in Attribute Directives

- Attribute directives listen to and modify the behaviour of other
 - HTML elements,
 - attributes,
 - properties, and
 - Components
- They are usually applied to elements as if they were HTML attributes, hence the name.
- e.g. `ngStyle`, `ngModel`, `ngClass`

Creating Custom Attribute Directive

- Create the directive class file in a terminal window with this CLI command.

ng g d highlight

g – generate

d – directive

highlight – name of directive

app.module.ts

...

```
import { HighlightDirective } from './highlight.directive';
@NgModule({
  declarations: [ AppComponent, TestComponent,
    MypowerPipe, HighlightDirective ],
  imports: [   BrowserModule,   FormsModule ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

highlight.directive.ts (generated code)

```
import { Directive } from '@angular/core';  
  
@Directive({  
    selector: '[appHighlight]'  
})  
  
export class HighlightDirective {  
    constructor() { }  
}
```


highlight.directive.ts (edited code)

```
import { Directive, ElementRef } from '@angular/core';
```

```
@Directive({  
  selector: '[appHighlight]'  
})
```

```
export class HighlightDirective {  
  constructor(el: ElementRef) {  
    el.nativeElement.style.backgroundColor = 'yellow';  
  }  
}
```

test.component.ts

```
<h2 appHighlight>highlight me </h2>
```

highlight me

References

- <https://angular.io/docs>