

## Angular Pipes

- Pipe is used to transform data.
- Angular is used in front-end to consume and present the data coming from various data sources.
- The data type of source provided and the data types supported in TypeScript will not match.
- Hence the data is not displayed in the same format how we are expecting.
- Pipe can transform the data and display in desired format.
- Angular pipe is a class that implements “PipeTransform” base.
- The functionality of pipe is defined by using “transform()” method.
- You can create custom pipes or implement built-in pipes.

Syntax:

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

@Pipe({
  name: 'someNameforPipe'
})

export class YourPipeName implements PipeTransform
{
  transform(value) {
    //transforms your value
  }
}
```

```
        return value;
    }
}
```

- The pipes are applied to data in presentation by using “|”

Syntax:

```
{{ yourdata | pipeName:options }}
```

**// options are pipe parameters.**

**// You can chain Pipes** [Add multiple pipes]

- Angular pipes are by default “Pure” pipes.
- A “**Pure**” pipe will not change the value, it will just apply a format for value.
- If a Pipe can change the state and value then it is referred as “**Impure**” pipe.
- Angular built-in pipes are:
  - AsyncPipe
  - **CurrencyPipe**
  - **DatePipe**
  - **DecimalPipe**
  - **I18nPluralPipe**
  - **I18nSelectPipe**
  - **JsonPipe**
  - **KeyValuePipe**
  - **LowerCasePipe**
  - **UpperCasePipe**
  - **TitleCasePipe**

- **PercentPipe**
- **SlicePipe**

Pipe	Name	Description
UpperCase Pipe	uppercase	<p>It changes the capitalization of text by converting all letters into Upper Case letters.</p> <p>Ex:</p> <pre>public product = {   Name: 'samsung tv',   Price: 56000.50,   Mfd: new Date('2020-03-22') }; {{product.Name   uppercase}}</pre>
LowerCase Pipe	lowercase	<p>It converts all letters into lowercase letters.</p> <p>Ex:</p> <pre>public product = {   Name: 'samsung tv',   Price: 56000.50,   Mfd: new Date('2020-03-22') }; {{product.Name   lowercase}}</pre>
TitleCasePipe	titlecase	<p>It converts the first letter of every word in a sentence into upper case letter.</p> <p>Ex:</p> <pre>public product = {   Name: 'samsung tv',</pre>

		Price: 56000.50, Mfd: new Date('2020-03-22') }; {{product.Name   titlecase}}
DecimalPipe	number	<p>It is used to display numeric value with thousands separator and fractions.</p> <p>It comprises of digits information:</p> <p><b>Minimum-Integer-Digits</b></p> <ul style="list-style-type: none"> <li>- It specifies the number of digits to display before fraction.</li> <li>- It will not slice the digits, it just defines the rule for number of digits.</li> </ul> <p><b>Minimum-Fraction-Digits</b></p> <ul style="list-style-type: none"> <li>- It specifies the minimum number of fractions to define.</li> </ul> <p><b>Maximum-Fraction-Digits</b></p> <ul style="list-style-type: none"> <li>- It specifies the maximum number of fractions to define.</li> </ul> <p>Syntax:</p> <pre> {{ data   number }} {{ data   number: {minIntegerDigits}.{minFractionDigits}-{maxFractionDigits} </pre> <p>Ex:</p> <pre> public product = { </pre>

		<p>Name: 'samsung tv', Price: 56000.50, Mfd: new Date('2020-03-22') };</p> <p>{{product.Price}} → 56000.5 {{product.Price   number}} → 56,000.5 {{product.Price   number:'5.2-4'}} → 56,000.50</p>
CurrencyPipe	currency	<p>It is used to display number in a currency format, with fractions and currency symbol.</p> <p>Syntax: {{ data   currency: 'currencyFormat': 'digitsInfo' }}</p> <p>Ex: {{product.Price   currency:'INR':'5.4-4'}} {{product.Price   currency:'₹':'5.4-4'}}</p>
DatePipe	date	<p>It is used for display the date and time value in various date and time formats. You can use pre-defined formats for date or your can define custom format.</p> <p><b>Pre-defined Formats:</b></p>

		<ul style="list-style-type: none"> <li>- short</li> <li>- medium</li> <li>- long</li> <li>- full</li> <li>- shortDate</li> <li>- mediumDate</li> <li>- longDate</li> <li>- fullDate</li> <li>- shortTime</li> <li>- mediumTime</li> <li>- longTime</li> <li>- fullTime</li> </ul> <p>Syntax:</p> <pre>{{ yourDateValue   date: 'shortDate' }}</pre> <pre>{{product.Mfd   date:'longDate'}}</pre> <p><b>Custom Format:</b></p> <p>MM – 2 Digits Month</p> <p>MMM – Short Month Name</p> <p>MMMM – Long Month Name</p> <p>dd – 2 digits date</p> <p>d – 1 Digit date</p> <p>yy – 2 Digits Year</p> <p>yyyy – 4 Digits Year</p> <p>Syntax:</p> <pre>{{product.Mfd   date:'dd-MMMM- yyyy'}}</pre>
PercentPipe	percent	Transforms a number into percentage string.

		<p>Syntax:</p> <pre>{{ value   percent: 'digitsInfo' }}</pre> <p>Ex:</p> <pre>public product = {   Name: 'samsung tv',   Price: 56000.500,   Mfd: new Date('2020-03-22'),   Sales: 0.259 }; {{product.Sales   percent:'2.2-2'}}</pre>
SlicePipe	slice	<p>It creates a new Array or string containing a subset (sliced) of the elements.</p> <p>It can extract values within the specified index range and returns an array.</p> <p>Syntax:</p> <pre>{{ collection   slice: startIndex:   endIndex }}</pre> <p>Ex:</p> <pre>public products = ['TV', 'Mobile',   'Shoe', 'Watch'];</pre> <pre>&lt;ol&gt;   &lt;li *ngFor="let item of     products   slice:1:3"&gt;     {{item}}   &lt;/li&gt;</pre>

		</ol>
JsonPine	json	<p>It converts the data into JSON format.</p> <p>JSON formatted data is used to transport via API.</p> <p>Syntax:</p> <pre>{{ data   json }}</pre> <p>Ex:</p> <pre>public product = {   Name: 'samsung tv',   Price: 56000.500,   Mfd: new Date('2020-03-22'),   Sales: 0.259 };</pre> <pre>&lt;div&gt;   &lt;pre&gt;     {{product   json}}   &lt;/pre&gt; &lt;/div&gt;</pre> <p>O/P:</p> <pre>{   "Name": "samsung tv",   "Price": 56000.5,   "Mfd": "2020-03-22T00:00:00.000Z",   "Sales": 0.259 }</pre>
KeyValuePipe	keyvalue	It is used to transform an object or map into an array of key and value



		<p>pairs.</p> <p>It provides the properties:</p> <ul style="list-style-type: none"><li>- key: used to read all keys from collection</li><li>- value: used to read all values from collection</li></ul> <p>Syntax:</p> <pre>{{ *ngFor="item of data/collection   keyvalue" }}</pre> <p>Ex:</p> <pre>public products = ['TV', 'Mobile', 'Shoe', 'Watch']; public data: {[key:number]:string} = {   1: 'Samsung TV', 2: 'Nike Casuals' };</pre> <pre>&lt;ul class="list-unstyled"&gt;   &lt;li *ngFor="let item of products   keyvalue"&gt;     {{item.key}} : {{item.value}}   &lt;/li&gt; &lt;/ul&gt;</pre> <pre>&lt;ul class="list-unstyled"&gt;   &lt;li *ngFor="let item of data   keyvalue"&gt;     {{item.key}} - {{item.value}}   &lt;/li&gt;</pre>
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		</ul>
I18nSelect Pipe	i18Select	<ul style="list-style-type: none"> <li>- I18 is a community of Angular.</li> <li>- It designed a Pipe for angular.</li> <li>- It is a Generic selector that can make decision dynamically according to the state and situation, and define the result when the relative condition is matching.</li> <li>- In Early version we have to depend on lot of iterations and conditions.</li> </ul> <p>Syntax:</p> <pre>{{value_expression   i18Select: mapping }}</pre> <p>Ex:</p> <pre>export class PipedemoComponent{   public products = [     {Name: 'Samsung TV', City: 'Delhi'},     {Name: 'Nike Casuals', City: 'Hyderabad'},     {Name: 'Mobile', City: 'Mumbai'},     {Name: 'Watch', City: 'Goa'}   ];   public statusMessge = {     'Hyderabad': 'Delivery in 2 Days',     'Delhi': 'Delivery in 5 Days',     'Mumbai': 'Not Deliverable',</pre>

		<pre>       'other': 'Unkown - We Will Update'     };   }  &lt;div class="container-fluid"&gt;   &lt;h2&gt;Products Status&lt;/h2&gt;   &lt;table class="table table-hover"&gt;     &lt;thead&gt;       &lt;tr&gt;         &lt;th&gt;Name&lt;/th&gt;         &lt;th&gt;City&lt;/th&gt;         &lt;th&gt;Delivery Status&lt;/th&gt;       &lt;/tr&gt;     &lt;/thead&gt;     &lt;tbody&gt;       &lt;tr *ngFor="let item of products"&gt;         &lt;td&gt;{{item.Name}}&lt;/td&gt;         &lt;td&gt;{{item.City}}&lt;/td&gt;         &lt;td&gt;{{item.City   i18nSelect:statusM essge}}&lt;/td&gt;       &lt;/tr&gt;     &lt;/tbody&gt;   &lt;/table&gt; &lt;/div&gt; </pre>
I18PluralPi pe	i18nPlu ral	<ul style="list-style-type: none"> <li>- As per coding standards we use singular name for any reference that is storing single value and plural name for reference storing multiple</li> </ul>

		<p>values.</p> <p>Syntax:</p> <pre>product = { }; products = [];</pre> <ul style="list-style-type: none"><li>- Plural pipe can identify whether the object comprises of single or multiple values and defines a plural name dynamically.</li><li>- It can get collection count and display messages according to the count.</li><li>- It uses a map or object to verify the values.</li></ul> <p>Syntax:</p> <pre>{{ collection.length   i18nPlural:keyValueCollection}}</pre> <p>Ex:</p> <pre>export class PipedemoComponent{   public notifications = ['John Called', 'Sam Called', 'Raj Called'];   public notificationsMap:     {[key:string]:string} = {     '=0': 'No Missed Calls', '=1': 'One Missed Call', 'other': '# Missed Calls'   } }</pre>
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		<pre> &lt;div class="container-fluid"&gt;   &lt;h2&gt;Plural Demo&lt;/h2&gt;   &lt;span class="fa fa- phone"&gt;&lt;/span&gt;   &lt;sup&gt;{{notifications.length   i18nPlural: notificationsMap}}&lt;/sup&gt; &lt;/div&gt; </pre>
AsyncPipe	async	<ul style="list-style-type: none"> <li>- It handles asynchronous requests.</li> <li>- It can access content by using unblocking technique.</li> </ul>

### Which pipe we can name as “Impure Pipe”?

- I18nSelectPipe
- I18nPluralPipe
- SlicePipe

### Custom Pipe

- Angular allows to configure and create your own pipe that can server any specific situation in your application.
- Pipe is a class that implements “PipeTransform” base class, which is defined in “@angular/core”.
- Pipes related meta data is defined by using “@Pipe()” marker [directive]
- Pipes are defined with functionality by implementing “transform()” method of “PipeTransform” base.
- Every custom pipe you define must be registered in “app.module.ts”.

Syntax:

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

@Pipe(
  { name: 'selectorForPipe' }
)
export class YourPipeName implements PipeTransform
{
  transform() {
    return transformation;
  }
}
```

Ex:

1. Add a new folder by name "CustomPipes"
2. Add a new file into folder "sentencecase.pipe.ts"  
[>ng generate pipe pipeName]
3. "sentencecase.pipe.ts"

```
import { Pipe, PipeTransform } from '@angular/core';

@Pipe({
  name: 'sentencecase'
})
export class SentenceCasePipe implements
PipeTransform
```

```

{
  transform(data){
    let firstChar = data.charAt(0);
    let restChars = data.substring(1);
    let sentence = firstChar.toUpperCase() +
restChars.toLowerCase();
    return sentence;
  }
}

```

#### 4. Register Pipe in “app.module.ts”

```

import { SentenceCasePipe } from
'./CustomPipes/SentenceCase.pipe';

```

```

declarations: [
SentenceCasePipe,
]

```

#### 5. Apply to your data

```

public msg = 'weCOME to AnGular';
{{ msg | sentencecase }}

```

### Try:

- Create a pipe for sorting a list and printing the list of values from array.

```

someCollection = [ ];
{{ *ngFor="" | yourPipe }}

```

- Create a pipe for filtering the value and display only the value that match your word.

```
{{ collection | pipe: 'string' }}
```