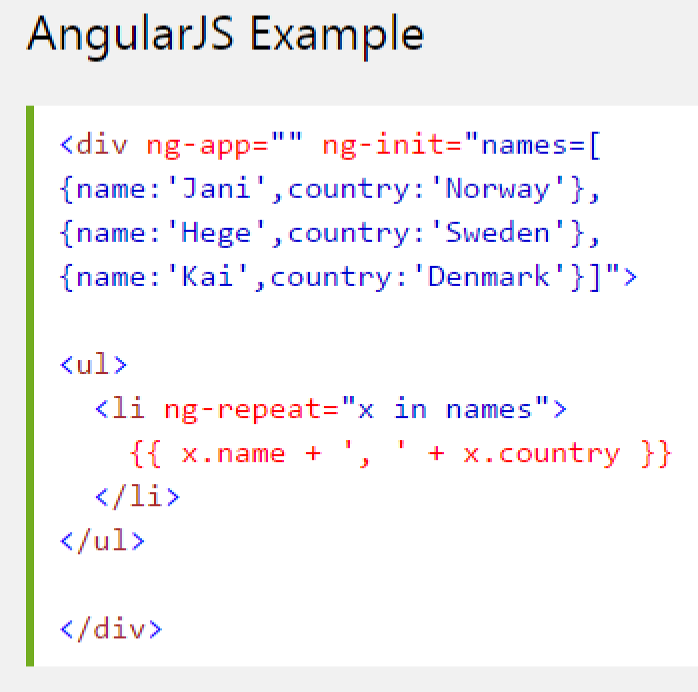
Angular is a client-side JavaScript Framework for adding interactivity to HTML.

A Directive is a marker on HTML tag that tells Angular to run or reference some JavaScript code.

Directive

- The **ng-model** directive binds the value of HTML controls (input, select, textarea) to application data.
- The **ng-app** directive defines an AngularJS application.
- The **ng-init** directive initializes application data.
- The **ng-bind** directive binds application data to the HTML view.
- The **ng-repeat** directive repeats an HTML element:



AngularJS Example

```
<div ng-app="" ng-init="names=[
{name:'Jani',country:'Norway'},
{name:'Hege',country:'Sweden'},
{name:'Kai',country:'Denmark'}]">

<ul>
  <li ng-repeat="x in names">
    {{ x.name + ', ' + x.country }}
  </li>
</ul>

</div>
```

- The **ng-controller** directive defines the application controller.

Modules

- Where we write pieces of our Angular application
- Makes our code more maintainable, testable ,and readable
- Where we define dependencies for our app

Create our first module with the file **app.js**

```
var app=angular.module('store',[]);
```

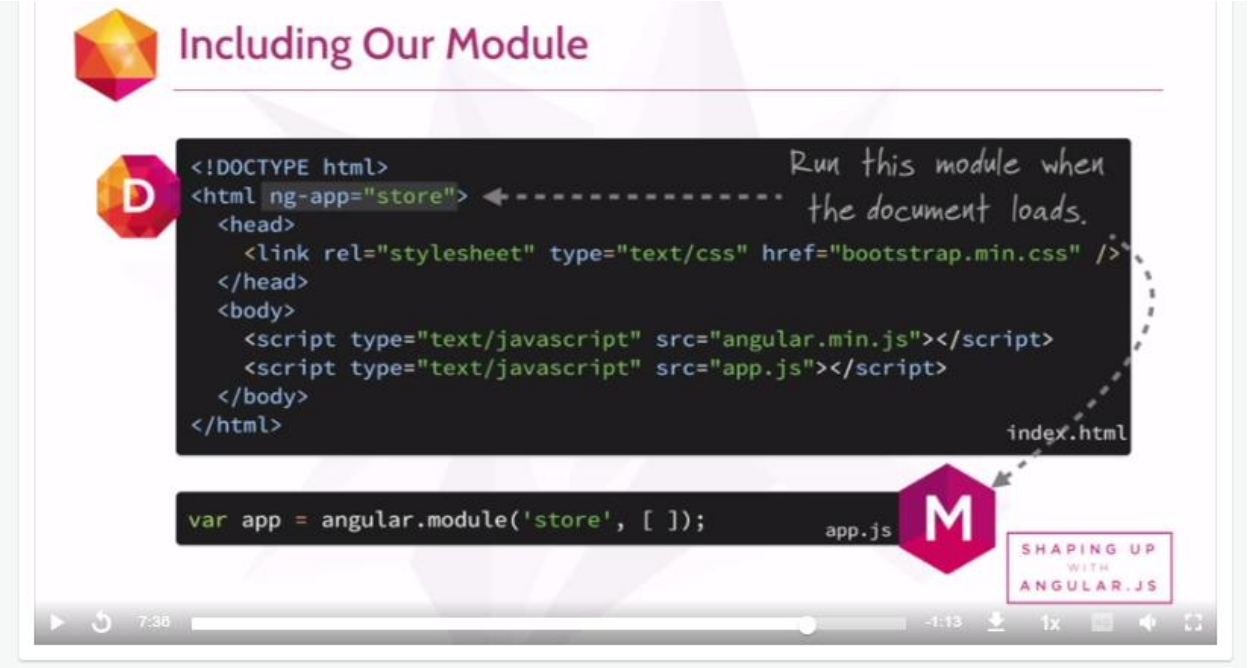
store is an Application Name, [] describe the dependencies

We should include app.js file into the html file ,by using the following line

<script type="text/javascript" src="app.js"></script>

Using the **ng-app** directive to run this module when the document loads

<html ng-app="store">



Including Our Module

```
<!DOCTYPE html>
<html ng-app="store">
  <head>
    <link rel="stylesheet" type="text/css" href="bootstrap.min.css" />
  </head>
  <body>
    <script type="text/javascript" src="angular.min.js"></script>
    <script type="text/javascript" src="app.js"></script>
  </body>
</html>
```

index.html

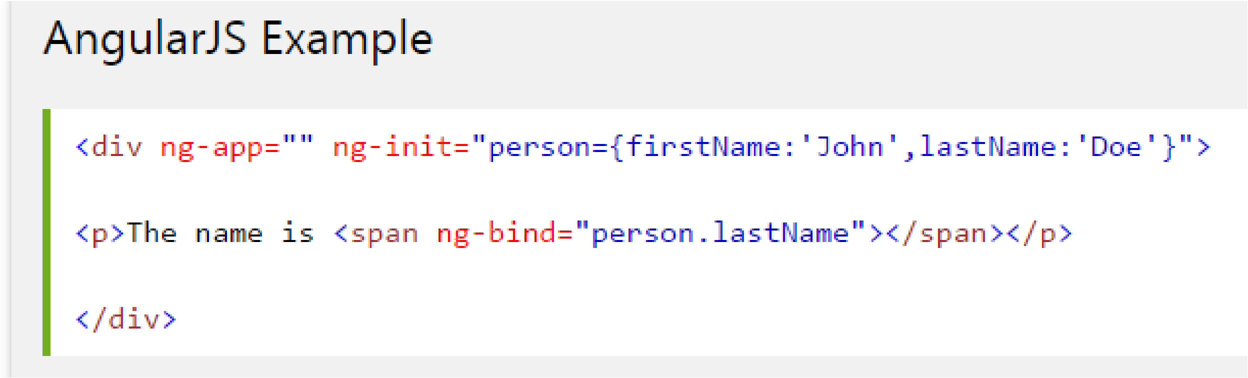
Run this module when the document loads.

```
var app = angular.module('store', [ ]);
```

app.js

Expressions

Allow you to insert dynamic values into your HTML.



AngularJS Example

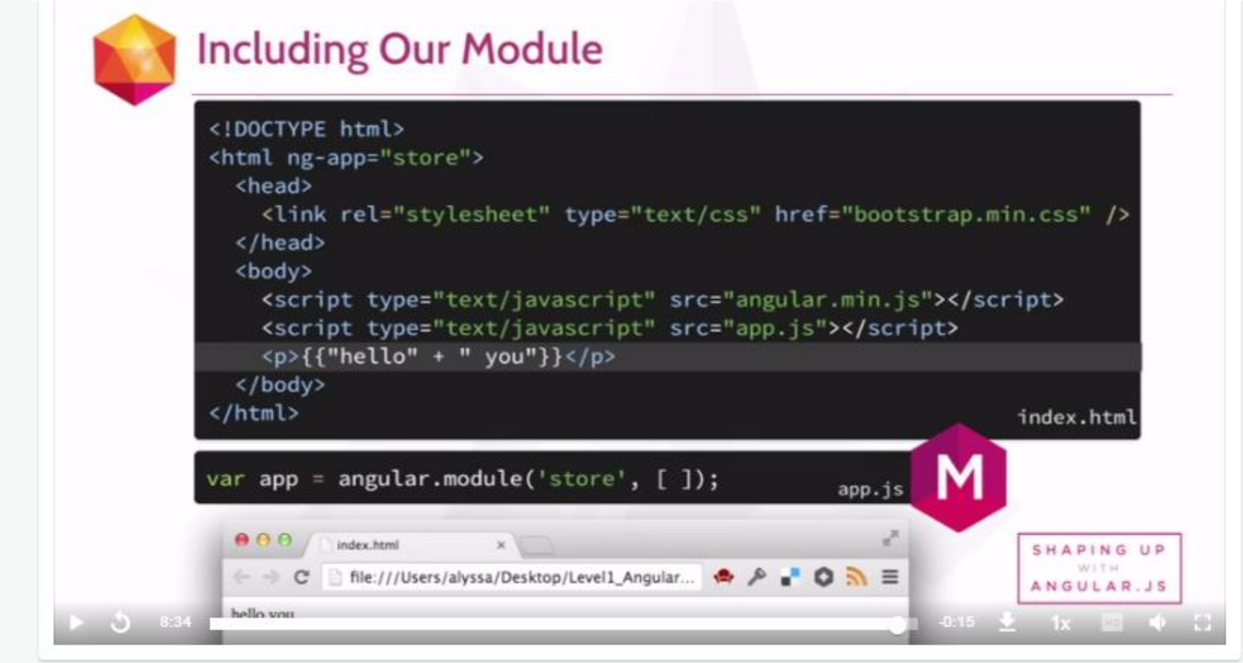
```
<div ng-app="" ng-init="person={firstName:'John',lastName:'Doe'}">

<p>The name is <span ng-bind="person.lastName"></span></p>

</div>
```

More Operations:

http://docs.angularjs.org/guide/expression



Including Our Module

```
<!DOCTYPE html>
<html ng-app="store">
  <head>
    <link rel="stylesheet" type="text/css" href="bootstrap.min.css" />
  </head>
  <body>
    <script type="text/javascript" src="angular.min.js"></script>
    <script type="text/javascript" src="app.js"></script>
    <p>{{"hello" + " you"}}</p>
  </body>
</html>
```

index.html

```
var app = angular.module('store', [ ]);
```

app.js

```
hello you
```

M
index.html
file:///Users/alyssa/Desktop/Level1_Angular...
SHAPING UP WITH ANGULAR.JS
8:34
-0:15
1x

Controllers

Controllers are where we define our apps behaviour by defining functions and values

AngularJS controllers **control the data** of AngularJS applications.

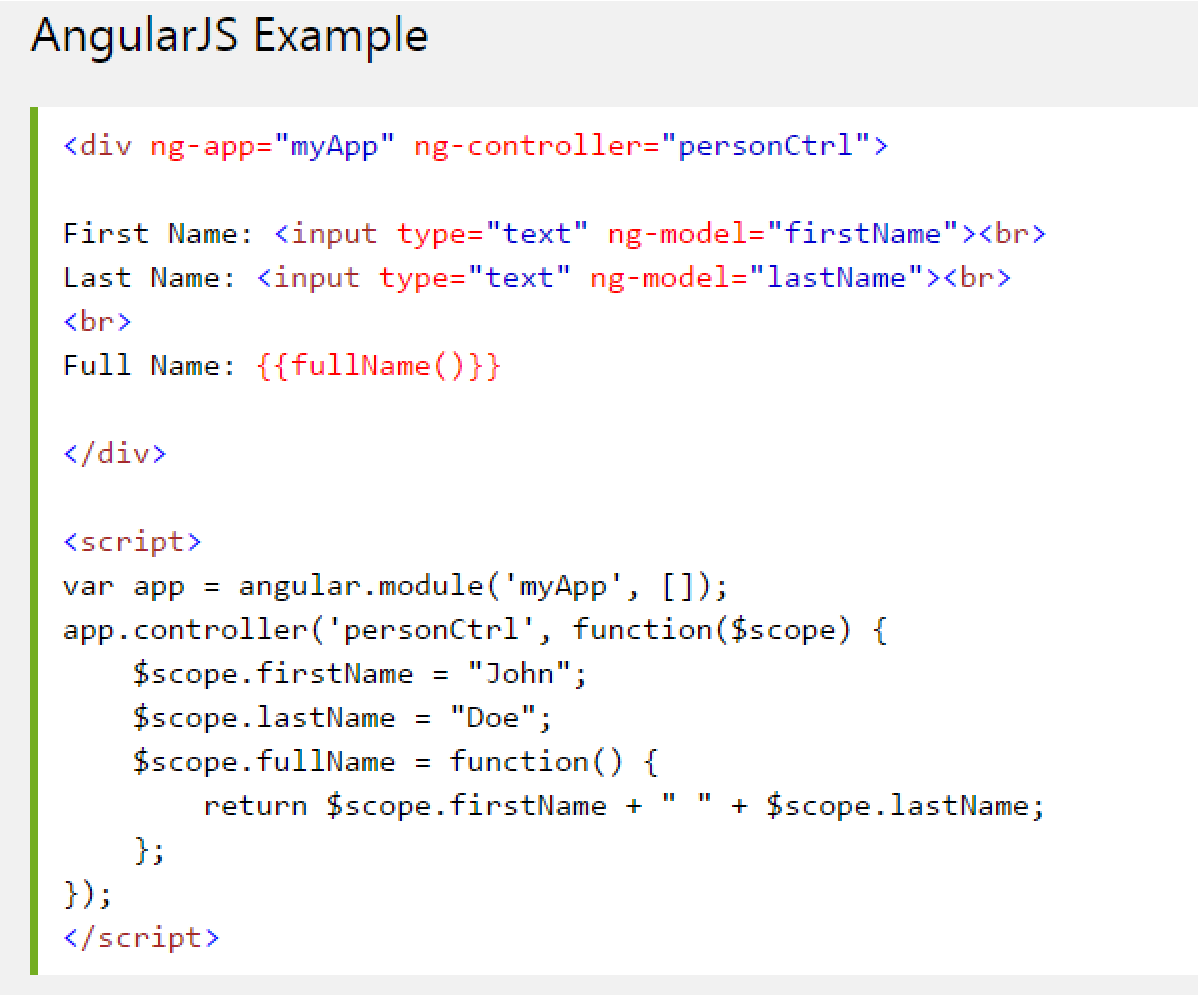
AngularJS controllers are regular **JavaScript Objects**.

Wrapping your Javascript in a closure is a good habit

Notice that Controller is attached to inside our app.

In AngularJS, **$scope** is the application object (the owner of application variables and functions).

Controller Methods



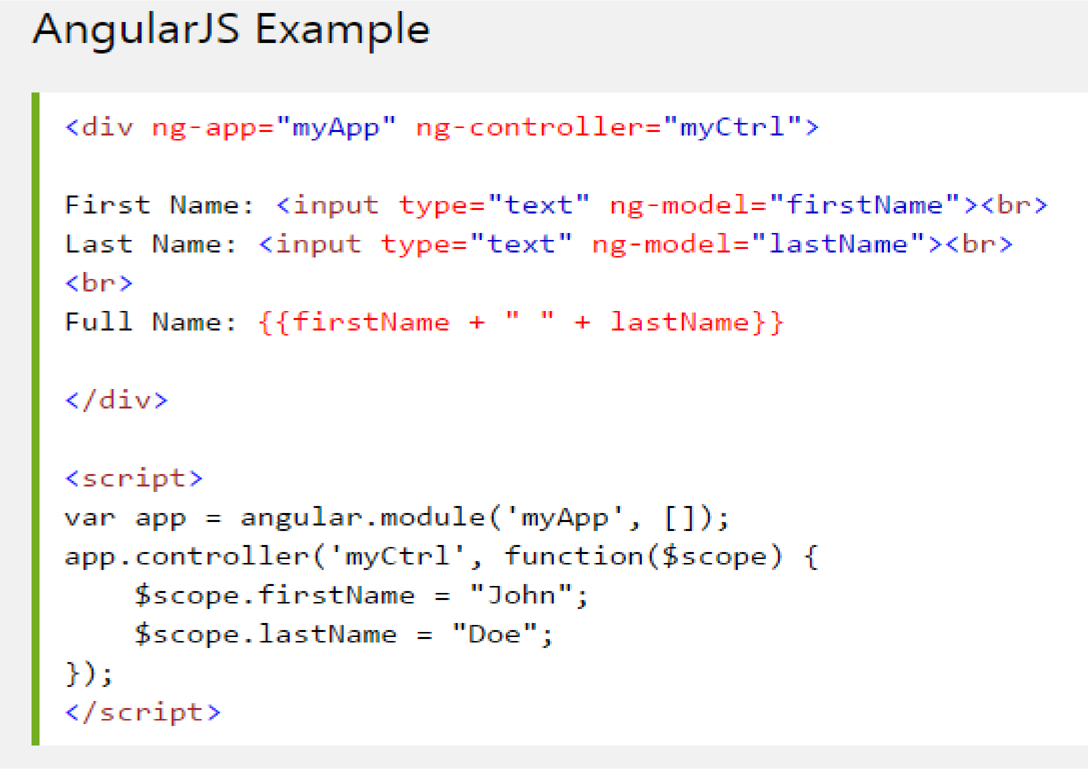
AngularJS Example

```
<div ng-app="myApp" ng-controller="personCtrl">

First Name: <input type="text" ng-model="firstName"><br>
Last Name: <input type="text" ng-model="lastName"><br>
<br>
Full Name: {{fullName()}}

</div>


<script>
var app = angular.module('myApp', []);
app.controller('personCtrl', function($scope) {
    $scope.firstName = "John";
    $scope.lastName = "Doe";
    $scope.fullName = function() {
        return $scope.firstName + " " + $scope.lastName;
    };
});
</script>
```



AngularJS Example

```
<div ng-app="myApp" ng-controller="myCtrl">

First Name: <input type="text" ng-model="firstName"><br>
Last Name: <input type="text" ng-model="lastName"><br>
<br>
Full Name: {{firstName + " " + lastName}}

</div>

<script>
var app = angular.module('myApp', []);
app.controller('myCtrl', function($scope) {
    $scope.firstName = "John";
    $scope.lastName = "Doe";
});
</script>
```

Application explained:

The AngularJS application is defined by **ng-app="myApp"**. The application runs inside the <div>.

The **ng-controller="myCtrl"** attribute is an AngularJS directive. It defines a controller.

The **myCtrl** function is a JavaScript function.

AngularJS will invoke the controller with a **$scope** object.

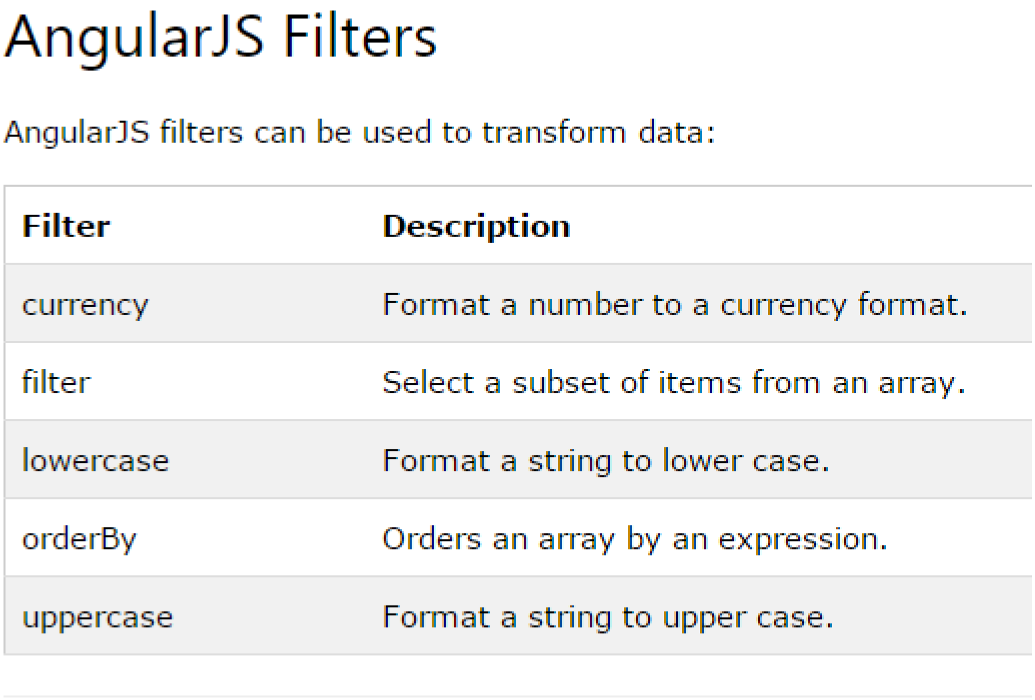
In AngularJS, $scope is the application object (the owner of application variables and functions).

The controller creates two properties (variables) in the scope (**firstName** and **lastName**).

The **ng-model** directives bind the input fields to the controller properties (firstName and lastName).

Filters

Filters can be added to expressions and directives using a pipe character.



AngularJS Filters

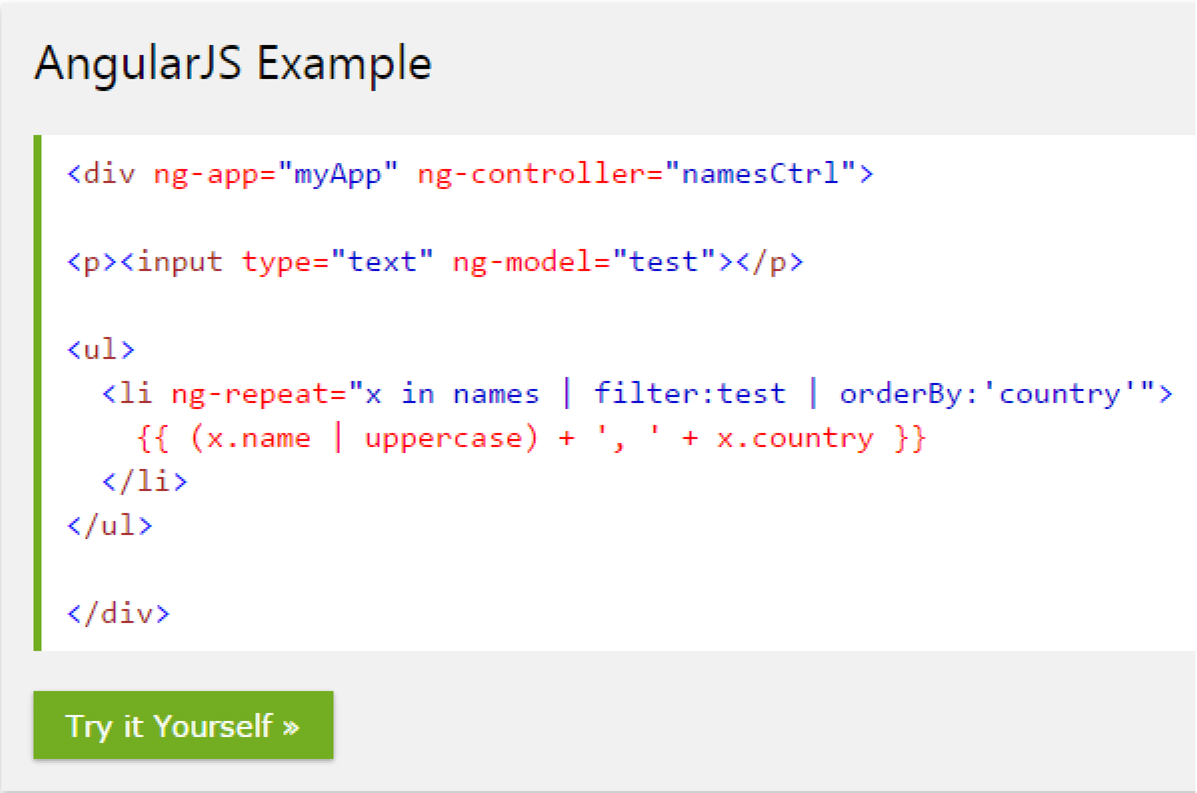
AngularJS filters can be used to transform data:

Filter	Description
currency	Format a number to a currency format.
filter	Select a subset of items from an array.
lowercase	Format a string to lower case.
orderBy	Orders an array by an expression.
uppercase	Format a string to upper case.

Filtering Input

An input filter can be added to a directive with a pipe character (|) and filter followed by a colon and a model name.

The **filter** filter selects a subset of an array:



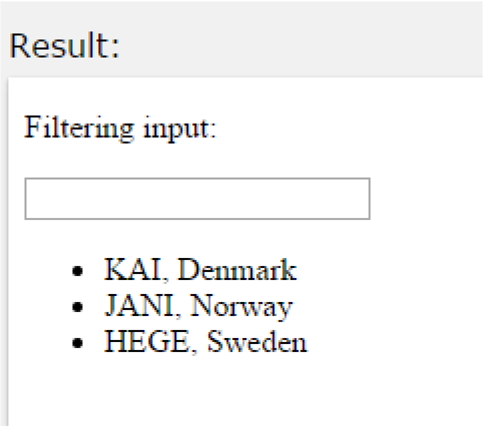
AngularJS Example

```
<div ng-app="myApp" ng-controller="namesCtrl">

<p><input type="text" ng-model="test"></p>

<ul>
  <li ng-repeat="x in names | filter:test | orderBy:'country'">
    {{ (x.name | uppercase) + ', ' + x.country }}
  </li>
</ul>

</div>
```



Result:

Filtering input:

- KAI, Denmark
- JANI, Norway
- HEGE, Sweden

Http

$http is an AngularJS service for reading data from remote servers.

Providing Data

The following data can be provided by a web server:

http://www.w3schools.com/angular/customers.php

```
{
"records": [
  {
    "Name" : "Alfreds Futterkiste",
    "City" : "Berlin",
    "Country" : "Germany"
  },

  {
    "Name" : "Vaffeljernet",
    "City" : "Århus",
    "Country" : "Denmark"
  },
  {
    "Name" : "Wolski Zajazd",
    "City" : "Warszawa",
    "Country" : "Poland"
  }
]
}
```

AngularJS $http

AngularJS **$http** is a core service for reading data from web servers.

$http.get(url) is the function to use for reading server data.

AngularJS Example

```
<div ng-app="myApp" ng-controller="customersCtrl">

<ul>
  <li ng-repeat="x in names">
    {{ x.Name + ', ' + x.Country }}
  </li>
</ul>

</div>
```

```
<script>
var app = angular.module('myApp', []);
app.controller('customersCtrl', function($scope, $http) {
    $http.get("http://www.w3schools.com/angular/customers.php")
    .then(function(response) {$scope.names = response.data.records;});
});
</script>
```

Try it Yourself »

Application explained:

The AngularJS application is defined by **ng-app**. The application runs inside a <div>.

The **ng-controller** directive names the **controller object**.

The **customersCtrl** function is a standard JavaScript **object constructor**.

AngularJS will invoke customersCtrl with a **$scope** and **$http** object.

$scope is the **application object** (the owner of application variables and functions).

$http is an **XMLHttpRequest object** for requesting external data.

$http.get() reads **JSON data** from http://www.w3schools.com/angular/customers.php.

On success, the controller creates a property (**names**) in the scope, with JSON data from the server.