

# AngularJS

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- AngularJS is a Javascript framework
- Adds more attributes to HTML elements (Extends HTML)
- Suitable for creating single page applications (SPA)
- Supports RESTful services.
- Supported and maintained by google
- Developers can implement MVC / MVVM pattern in web app development.
- Supports two way data binding.
- More functionality at client side.
- Simplifies form validation.
- Includes unit testing framework.
- Supports dependency injection

# AngularJS - basic directives

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## Angular JS key directives

- **ng-app** - This directive defines and links an AngularJS application to HTML.
- **ng-model** - This directive binds the values of AngularJS application data to HTML input controls.
- **ng-bind** - This directive binds the AngularJS Application data to HTML contents.
- **ng-controller** - Core component in an angular webpage.



ng stands for **Angular** JS

## Google CDN

```
<script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
```



# AngularJS – Simple binding

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="">
    <p>Input something in the input box:</p>
    <p>Name: <input type="text" ng-model="name"></p>
    <p ng-bind="name"> </p>
  </div>
</body>
</html>
```

Angularjs application which lies inside the div section

text element is the model for the application

Model content is lively bounded with the paragraph content

**Note:** ng-app should be empty string for application without modules

# AngularJS – init directives

---

```
<html>  
<script src=  
"http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>  
<body>
```

init directive is used to create variables

```
<div ng-app="" ng-init="firstName='John'">  
<p>The name is <span ng-bind="firstName"></span></p>  
</div>
```

Variables can be used at later stage

```
</body>  
</html>
```

# AngularJS – expressions

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AngularJS supports developers to use expressions inside the script


Expressions are enclosed between two consecutive braces

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```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="">
    <p>Sum of 2 and 3 is </p>
    {{ 2 + 3 }} </div>
  </body>
</html>
```

---

```
<html>
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="" ng-init="message='Hello'">
    <p>Name: <input type="text" ng-model="name"></p>
    <p>{{message + ' ' + name}}</p>
  </div>
</body>
</html>
```



Variables & Models can be used in expression

# AngularJS – arrays

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>

  <div ng-app="" ng-init="a=[10,20,30,40,50]">

    <p>The third result is {{ a[2] }}</p>

  </div>

</body>
</html>
```

# AngularJS – creating objects

---

```
<html>  
<script src=  
"http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>  
<body>
```

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

Access objects in expression

```
<p>The name is {{ person.lastName }}</p>
```

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

Accessing while binding

```
</div>
```

```
</body>
```

```
</html>
```



# AngularJS vs JavaScript expressions

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AngularJS Expression	JavaScript Expression
Can be written inside html tags	Only along with script region
No if condition, loops	JavaScript can have control structures
Support filters	Not supported

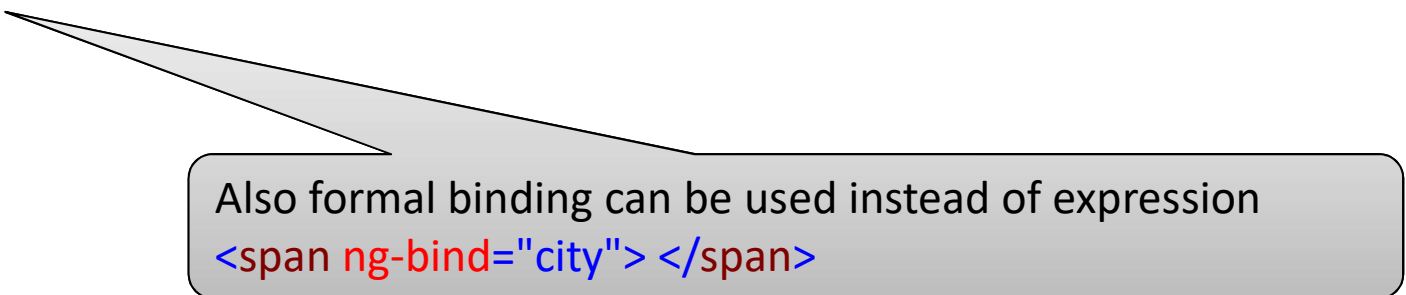
# AngularJS – repeat directive

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>

<div ng-app="" ng-init="cities=['Chennai','Delhi','Mumbai','Kolkotta']">
  <p>Looping with ng-repeat:</p>
  <ul>
    <li ng-repeat="city in cities">
      {{ city }}
    </li>
  </ul>
</div>

</body>
</html>
```



Also formal binding can be used instead of expression  
<span ng-bind="city"> </span>

# AngularJS – repeat directive

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>

  <div ng-app="" ng-init="cities=[
    {name:'Delhi',country:'India'},
    {name:'Tokyo',country:'Japan'},
    {name:'Paris',country:'France'},
    {name:'Manila',country:'Philippines'}]">

    <p><b>Cities</b></p>
    <ol>
      <li ng-repeat="city in cities">
        {{ city.name + ', ' + city.country }}</li>
    </ol>

  </div>

</body>
</html>
```

# AngularJS – Controllers

Controllers controls the flow of data in the angular js application

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <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 = "Xavier";
      $scope.fullName = function() {
        return $scope.firstName + " " + $scope.lastName;
      };
    });
  </script>
</body>
</html>
```

Controller controls the data in App

Module is collection of controllers

Controller defines the data and functions

scope is the object connecting the page data with controller (two way)

# AngularJS – Controllers – Binding a function

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="TaxApp" ng-controller="TaxController">
    Your Income: <input type="text" ng-model="income"><br>
    <br>
    Tax: {{tax()}}
  </div>
  <script>
    var app = angular.module('TaxApp', []);
    app.controller('TaxController', function($scope) {
      $scope.income = 0;
      $scope.tax = function() {
        return $scope.income*10/100;
      };
    });
  </script>
</body>
</html>
```

# AngularJS – Controllers – Binding an event

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="TaxApp" ng-controller="TaxController">
    Your Income: <input type="text" ng-model="income">
    <button ng-click="calculate()"> Calculate </button>
    <br>
    Tax: {{tax}}
  </div>
  <script>
    var app = angular.module('TaxApp', []);
    app.controller('TaxController', function($scope) {
      $scope.income = 0;
      $scope.tax = 0;
      $scope.calculate=function() {
        $scope.tax = $scope.income*10/100;
      };
    });
  </script>
</body>
</html>
```

# AngularJS – Controllers (binding object array)

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <p> <b> Cities </b> </p>
  <div ng-app="myApp" ng-controller="cityCtrl">
    <ul>
      <li ng-repeat="city in cities"> {{ city.name + ', ' + city.country }} </li>
    </ul>
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('cityCtrl', function($scope) {
      $scope.cities=[
        {name:'Delhi',country:'India'},
        {name:'Tokyo',country:'Japan'},
        {name:'Paris',country:'France'},
        {name:'Manila',country:'Philippines'}}
    });
  </script>
</body>
</html>
```

# AngularJS – Filters

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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.
uppercase	Format a string to upper case.
orderBy	Orders an array by an expression.



# AngularJS – Filters (uppercase/lowercase)

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <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: {{ firstName | uppercase }}
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('personCtrl', function($scope) {
      $scope.firstName = "Mark";
      $scope.lastName = "Casper";
      $scope.fullName = function() {
        return $scope.firstName + " " + $scope.lastName;
      }
    });
  </script>
</body>
</html>
```



Works like pipe

## AngularJS – Filters (currency)

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="myApp" ng-controller="amtCtrl">
    Amount: <input type="number" ng-model="amount">
    <p>Amount = {{ (amount) | currency:"Rs." }}</p>
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('amtCtrl', function($scope) {
      $scope.amount = 100;
    });
  </script>
</body>
</html>
```

# AngularJS – Filters (orderBy)

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <p> <b> Cities </b> </p>
  <div ng-app="myApp" ng-controller="cityCtrl">
    <ul>
      <li ng-repeat="city in cities|orderBy:'country'"> {{ city.name + ', ' + city.country }} </li>
    </ul>
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('cityCtrl', function($scope) {
      $scope.cities=[
        {name:'Delhi',country:'India'},
        {name:'Tokyo',country:'Japan'},
        {name:'Paris',country:'France'},
        {name:'Manila',country:'Philippines'}}
    });
  </script>
</body>
</html>
```

# AngularJS – Filters (filter)

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <p> <b> Cities </b> </p>
  <div ng-app="myApp" ng-controller="cityCtrl">
    <p> Filter by Country: </p>
    <p><input type="text" ng-model="myFilter.country"></p>
    <ul> <li ng-repeat="city in cities | filter:myFilter | orderBy:'country'">
      {{ city.name + ', ' + city.country }} </li> </ul>
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('cityCtrl', function($scope) {
      $scope.cities=[
        {name:'Delhi',country:'India'},
        {name:'Tokyo',country:'Japan'},
        {name:'Paris',country:'France'},
        {name:'Manila',country:'Philippines'}}
    });
  </script>
</body>
</html>
```

# AngularJS – Forms

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="myApp" ng-controller="personCtrl">
    First Name: <input type="text" ng-model="user.firstName"><br>
    Last Name: <input type="text" ng-model="user.lastName"><br>
    <br> <button ng-click="reset()">RESET</button>
    <br> Full Name: {{user.firstName + ' ' +user.lastName}}
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('personCtrl', function($scope) {
      $scope.master = {firstName:"Mark", lastName:"Casper"};
      $scope.reset = function() {
        $scope.user = angular.copy($scope.master);
      };
      $scope.reset();
    });
  </script>
</body>
</html>
```

master object is defined in scope

Copy back master to user

# AngularJS –ng-show, ng-hide

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="myApp" ng-controller="personCtrl">
    First Name: <input type="text" ng-model="user.firstName"><br>
    Last Name: <input type="text" ng-model="user.lastName"><br>
    Special User: <input type="checkbox" ng-model="user.splUser"><br>
    <span ng-show="user.splUser"> You are a special user </span>
    <br> <button ng-click="reset()">RESET</button>
    <br> Full Name: {{user.firstName + ' ' +user.lastName}}
  </div>
  <script>
var app = angular.module('myApp', []);
app.controller('personCtrl', function($scope) {
  $scope.master = {firstName:"Mark", lastName:"Casper",splUser:false};
  $scope.reset = function() {
    $scope.user = angular.copy($scope.master);
  };
  $scope.reset();
});
</script>
</body> </html>
```

span is visible only if  
splUser is true

# AngularJS – ng-if

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="myApp" ng-controller="personCtrl">
    First Name: <input type="text" ng-model="user.firstName"><br>
    Last Name: <input type="text" ng-model="user.lastName"><br>
    Special User: <input type="checkbox" ng-model="user.splUser"><br>
    <span ng-if="user.splUser"> You are a special user </span>
    <br> <button ng-click="reset()">RESET</button>
    <br> Full Name: {{user.firstName + ' ' +user.lastName}}
  </div>
  <script>
    var app = angular.module('myApp', []);
    app.controller('personCtrl', function($scope) {
      $scope.master = {firstName:"Mark", lastName:"Casper",splUser:true};
      $scope.reset = function() {
        $scope.user = angular.copy($scope.master);
      };
      $scope.reset();
    });
  </script>
</body> </html>
```

span is removed from  
DOM if splUser is false

# AngularJS – ng-switch

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
<div ng-app="myApp" ng-controller="personCtrl">
First Name: <input type="text" ng-model="user.firstName"><br>
Last Name: <input type="text" ng-model="user.lastName"><br>
User type: <input type="text" ng-model="user.userType"><br>
<br> <button ng-click="reset()">RESET</button>
<br> Full Name: {{user.firstName + ' ' +user.lastName}}
<br> User Type:
<div ng-switch="user.userType">
<div ng-switch-when="1" style="width: 50px; background-color: red; text-align:
center;">1</div>
    <div ng-switch-when="2" style="width: 50px; background-color: green; text-align:
center;">2</div>
    <div ng-switch-when="3" style="width: 50px; background-color: yellow; text-align:
center;">3</div>
<div ng-switch-default style="width: 50px; background-color: lightgray; text-align:
center;">Invalid</div>
</div>
</div>
```



# AngularJS – ng-switch

---

```
<script>
var app = angular.module('myApp', []);
app.controller('personCtrl', function($scope) {
    $scope.master = {firstName:"Mark", lastName:"Casper",userType:1};
    $scope.reset = function() {
        $scope.user = angular.copy($scope.master);
    };
    $scope.reset();
});
</script>
</body>
</html>
```

# AngularJS – ng-include

---

```
<html>
<script src= "http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
<body>
  <div ng-app="myApp" ng-controller="personCtrl">
    First Name: <input type="text" ng-model="user.firstName"><br>
    Last Name: <input type="text" ng-model="user.lastName"><br>
    Special User: <input type="checkbox" ng-model="user.splUser"><br>
    <div ng-include src="user.splUser? 'spluser.html' : 'normaluser.html'"> </div>
    <br> <button ng-click="reset()">RESET</button>
    <br> Full Name: {{user.firstName + ' ' +user.lastName}}
  </div>
  <script>
var app = angular.module('myApp', []);
app.controller('personCtrl', function($scope) {
  $scope.master = {firstName:"Mark", lastName:"Casper",splUser:true};
  $scope.reset = function() {
    $scope.user = angular.copy($scope.master);
  };
  $scope.reset();
});
</script>
</body> </html>
```

# AngularJS – ng-include

---

## **spluser.html**

<b> You are a special user </b>

## **normaluser.html**

<b> You are a normal user </b>