**AngularJS**

AngularJS is an open source JavaScript MVC framework for web application or web sites. It extends the HTML and makes it dynamic. AngularJS can be used to create Single Page Applications. It was originally developed in 2009 by Misko Hevery and Adam Abrons. AngularJS is a client side JavaScript MVC framework to develop a dynamic web application. AngularJS was originally started as a project in Google but now, it is open source framework.

AngularJS is entirely based on HTML and JavaScript, so there is no need to learn another syntax or language. Its latest version is 1.4.3.

This line demonstrates two core features of Angular's templating capabilities:

* A binding, denoted by double-curlies: {{ }}
* A simple expression used in this binding: 'yet' + '!'

## Features

* AngularJS is a powerful JavaScript based development framework to create RICH Internet Application(RIA).
* AngularJS provides developers options to write client side application (using JavaScript) in a clean MVC(Model View Controller) way.
* Application written in AngularJS is cross-browser compliant. AngularJS automatically handles JavaScript code suitable for each browser.
* AngularJS is open source, completely free, and used by thousands of developers around the world. It is licensed under the Apache License version 2.0.

Overall, AngularJS is a framework to build large scale and high performance web application while keeping them as easy-to-maintain.

## Advantages of AngularJS

* AngularJS provides capability to create Single Page Application in a very clean and maintainable way.
* AngularJS provides data binding capability to HTML thus giving user a rich and responsive experience
* AngularJS code is unit testable.
* AngularJS uses dependency injection and make use of separation of concerns.
* AngularJS provides reusable components.
* With AngularJS, developers write less code and get more functionality.
* In AngularJS, views are pure html pages, and controllers written in JavaScript do the business processing.

On top of everything, AngularJS applications can run on all major browsers and smart phones including Android and iOS based phones/tablets.

**Disadvantages of AngularJS**

Though AngularJS comes with lots of plus points but same time we should consider the following points −

• **Not Secure** − Being JavaScript only framework, application written in AngularJS are not safe. Server side authentication and authorization is must to keep an application secure.

• **Not degradable** − If your application user disables JavaScript then user will just see the basic page and nothing more.

Following Table Shows Different tags used in angular JS

|  |  |
| --- | --- |
| **ng-app** | The ng-app directive is a starting point of AngularJS Application. It initializes the AngularJS framework automatically. This directive defines and links an AngularJS application to HTML. |
| **ng-model** | With the ng-model directive you can bind the value of an input field to variable created in AngularJS. Binds HTML control's value to a property on the $scope object. |
| **ng-bind** | This directive binds the AngularJS Application data to HTML tags. |
| **ng-init** | This directive initializes application data. It is used to put values to the variables to be used in the application |
| **ng-repeat** | This directive repeats html elements for each item in a collection.Following example will showcase all the above mentioned directives. |
| **Example**<html><title>AngularJS Directives</title><body><h1>Sample Application</h1><div ng-app="" ng-init="countries=[{locale:'en-US',name:'United States'}, {locale:'en-GB',name:'United Kingdom'}, {locale:'en-FR',name:'France'}]"><p>Enter your Name: <input type="text" ng-model="name"></p><p>Hello <span ng-bind="name"></span>!</p><p>List of Countries with locale:</p><ol><li ng-repeat="country in countries"> {{ 'Country: ' + country.name + ', Locale: ' + country.locale }}</li></ol></div><script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script></body></html> |
| **ng-controller** | The controller in AngularJS is a JavaScript function that maintains the application data and behavior using $scope object. |
| **angular.module** | angular.module() method creates an application module, where the first parameter is a module name which is same as specified by ng-app directive.The second parameter is an array of other dependent modules []. |
| **Example:**Create Controller Module<html ><head> <script src="~/Scripts/angular.js"></script></head><body ng-app="myApp"> <div ng-controller="myController"> {{message}} </div> <script> var myApp = angular.module("myApp", []);  myApp.controller("myController", function ($scope) { $scope.message = "Hello Angular World!"; }); </script></body> </html> |
| **ng-disabled** | The ng-disabled directive binds AngularJS application data to the disabled attribute of HTML elements.**Example** <button ng-disabled="mySwitch">Click Me!</button> |
| **ng-show** | The ng-show directive shows or hides an HTML element.**Example**<p ng-show="true">I am visible.</p><p ng-show="false">I am not visible.</p> |
|  **ng-hide** | The ng-hide directive hides or shows an HTML element.**Example**.<p ng-hide="true">I am not visible.</p><p ng-hide="false">I am visible.</p> |
| **$scope** | A scope can be seen as the glue which allows the template, model, and controller to work together. Angular uses scopes, along with the information contained in the template, data model, and controller, to keep models and views separate, but in sync. |
| **Example**<html ><head> <title>AngualrJS $scope object</title> <script src="~/Scripts/angular.js"></script></head><body ng-app="myNgApp"> <div ng-controller="myController"> Message: <br /> {{message}}<br /> <span ng-bind="message"></span> <br /> <input type="text" ng-model="message" />  </div> <script> var ngApp = angular.module('myNgApp', []); ngApp.controller('myController', function ($scope) { $scope.message = "Hello World!";  }); </script></body></html> |
| **ng-options** | Fill options in a dropdown list by using the items of an array. The ng-options directive fills a <select> element with <options>.**Example:**<div ng-app="myApp" ng-controller="myCtrl"><select ng-model="selectedName" ng-options="item for item in names"></select></div> |
| **ng-click** | The ng-click directive defines an AngularJS click event.Example: $scope.count = 0; <div ng-app="myApp" ng-controller="countController"> <button ng-click="count = count + 1">Increment</button> {{ count }} </div> |
| **Validations****@*Required*****@*E-mail*** | AngularJS offers client-side form validation. It monitors the state of the form and input fields (input, text area, select), and lets you notify the user about the current state. Also holds information about whether they have been touched, or modified, or not.**$dirty** − states that value has been changed.**$invalid** − states that value entered is invalid.**$error** − states the exact error.Use the HTML5 attribute required to specify that the input field must be filled out.**Example:**<form name="myForm"><input name="myInput" ng-model="myInput" required></form><p>The input's valid state is:</p><h1>{{myForm.myInput.$valid}}</h1>This directive used for the input field has to be an e-mail**Example:**<form name="myForm"><input name="myInput" ng-model="myInput" type="email"></form><p>The input's valid state is:</p><h1>{{myForm.myInput.$valid}}</h1> |
| **ng-include** | With AngularJS, you can include HTML content using the **ng-include** directive.**Example:**<body ng-app=""><div ng-include="'myFile.htm'"></div></body> |
| **Filters*****@uppercase@lowercase******@currency******@filter******@orderby*** | Filters can be added in AngularJS to format data.Converts a text to upper case text.Converts a text to lower case text.Formats text in a currency format.Filter the array to a subset of it based on provided criteria.Orders the array based on provided criteria. |
| **Example:**<html><script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script><body><div ng-app="myApp" ng-controller="personCtrl"><p>The name is {{ lastName | uppercase }}</p><p>The name is {{ lastName | lowercase }}</p><h1>Price: {{ price | currency }}</h1><li ng-repeat="x in names | filter : 'i'"> {{ x }}</div><p>Click THE TEXT NAME TO CHANGE THE ORDER</p><div ng-app="myApp" ng-controller="namesCtrl"><p ng-click="orderByMe('name')">Name</p><p ng-repeat="x in names | orderBy:myOrderBy">{{x.name}}</p></div><script>angular.module('myApp', []).controller('personCtrl', function($scope) { $scope.firstName = "John", $scope.lastName = "Doe", $scope.price = 58; $scope.names = [ 'Jani', 'Margareth',  'Kai' ]; $scope.names = [ {name:'Jani',country:'Norway'}, {name:'Carl',country:'Sweden'}, {name:'Margareth',country:'England'}, ]; $scope.orderByMe = function(x) { $scope.myOrderBy = x; }});</script></body></html> |