무료 전자 책

배우기 AngularJS

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#angularjs

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AngularJS . Angular 2 Angular 1.x Angular 2 Stack Overflow .

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1.3.0-β.13	2014-06-16
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1.3.0-beta.10	2014-05-24
1.3.0-beta.9	2014-05-17
1.3.0-beta.8	2014-05-09
1.3.0-beta.7	2014-04-26
1.3.0-beta.6	2014-04-22
1.2.16	2014-04-04
1.3.0-beta.5	2014-04-04
1.3.0-beta.4	2014-03-28
1.2.15	2014-03-22
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1.3.0-beta.2	2014-03-15
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1.2.12	2014-02-08
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1.2.8	2014-01-10
1.2.7	2014-01-03
1.2.6	2013-12-20
1.2.5	2013-12-13
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1.2.0-rc.2	2013-09-04
1.0.8	2013 8 22
1.2.0rc1	2013 8 13
1.0.7	2013-05-22
1.1.5	2013-05-22
1.0.6	2013-04-04
1.1.4	2013-04-04
1.0.5	2013-02-20
1.1.3	2013-02-20
1.0.4	2013-01-23
1.1.2	2013-01-23
1.1.1	2012-11-27
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v1.0.0rc9	2012-05-15
v1.0.0rc8	2012-05-07

v1.0.0rc7	2012-05-01
v1.0.0rc6	2012-04-21
v1.0.0rc5	2012-04-12
v1.0.0rc4	2012-04-05
v1.0.0rc3	2012-03-30
v1.0.0rc2	2012-03-21
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g3-v1.0.0-rc2	2012-03-16
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Examples

HTML .

```
<!DOCTYPE html>
<html ng-app>
<head>
  <title>Hello, Angular</title>
  <script src="https://code.angularjs.org/1.5.8/angular.min.js"></script>
</head>
<body ng-init="name='World'">
  <label>Name</label>
  <input ng-model="name" />
  <span>Hello, {{ name }}!</span>
  <p ng-bind="name"></p>
</body>
</html>
```

`Hello, World!  Hello, World!.  .`

:

1. .

   ```
   <script src="https://code.angularjs.org/1.5.8/angular.min.js"></script>
   ```

2. `ng-app` HTML Angular .

   ```
   <html ng-app>
   ```

3. `ng-init name` .

```
<body ng-init=" name = 'World' ">
```

ng-init . .

4. HTML . `ng-model name <input>` .

```
<input ng-model="name" />
```

5. `{{ }}`

```
<span>Hello, {{ name }}</span>
```

6. `name` handlebars `"{{ }}" ng-bind ng-bind` .

```
 <span ng-bind="name"></span>
```

. .

`ng-bind` . `Hello, {{name}}` (`Hello, {{name}} ng-bind` .. `ng-cloak` .

.

AngularJS .

```
<!DOCTYPE html>
<html ng-app="myDemoApp">
  <head>
    <style>.started { background: gold; }</style>
    <script src="https://code.angularjs.org/1.5.8/angular.min.js"></script>
    <script>
      function MyDataService() {
        return {
          getWorlds: function getWorlds() {
            return ["this world", "another world"];
          }
        };
      }

      function DemoController(worldsService) {
        var vm = this;
        vm.messages = worldsService.getWorlds().map(function(w) {
          return "Hello, " + w + "!";
        });
      }

      function startup($rootScope, $window) {
        $window.alert("Hello, user! Loading worlds...");
        $rootScope.hasStarted = true;
      }

      angular.module("myDemoApp", [/* module dependencies go here */])
        .service("worldsService", [MyDataService])
        .controller("demoController", ["worldsService", DemoController])
        .config(function() {
```

```
          console.log('configuring application');
        })
        .run(["$rootScope", "$window", startup]);
    </script>
  </head>
  <body ng-class="{ 'started': hasStarted }" ng-cloak>
    <div ng-controller="demoController as vm">
      <ul>
        <li ng-repeat="msg in vm.messages">{{ msg }}</li>
      </ul>
    </div>
  </body>
</html>
```

.

1. `ng-app="myDemoApp"` , DOM `"myDemoApp"` `angular.module` ngApp .
2. `<script src="angular.min.js">` AngularJS .

(`MyDataService` , `DemoController` `startup`) .

3. `angular.module(...)` . . `module(...)` .
4. `.service(...)` .
5. `.controller(...)` .
6. `.config(...)` .
7. `.run(...)` . .
   - Angular `startup` `$rootScope` `$rootScope` .
   - Angular `startup` `$window` .
   - `startup` .
8. `ng-class` `class` ngClass `hasStarted` `$rootScope` `hasStarted`
9. `ng-cloak` Angular Angular html (: " `{{ msg }}` ") .
10. `ng-controller` Angular DOM .
11. `ng-repeat` Angular DOM .
12. `{{ msg }}` : ;

Angular HTML Javascript **ng-app** , **ng-controller** **ng-if** , **ng-repeat** . new **controllerAs** Angular `$scope` .

`$scope` . .

.

:

```
<div ng-app="myApp">
 <h1>Hello {{ name }}</h1>
</div>
```

?

Angular `$rootScope` `$rootScope` . **name** `$rootScope` .

```
angular.module("myApp", [])
  .run(function($rootScope) {
    $rootScope.name = "World!";
  });
```

Javascript `$rootScope` .

. Angular `$scope` . " ".

, :

```
<div ng-app="myApp">
  <div ng-controller="MyController">
    <h1>Hello {{ name }}</h1>
  </div>
</div>
```

`$scope` .

```
angular.module("myApp", [])
  .controller("MyController", function($scope) {
    $scope.name = "Mr Local!";
  });
```

`$scope` . **controllerAs** .

`$scope` JavaScript Angular `$rootScope` . , . `$scope.model` .

`$scope.model` .

Angular . `$scope` Angular .

Hello World.

Angular 1 DOM . HTML .

`{{ }}` Angular . .

```
{{ 'Hello' + 'World' }}
```

.

```
HelloWorld
```

-

DOM `ng-app` Angular . Angular . ng-app .

```
<html>
  <head>
    <script src="/angular.js"></script>
  </head>
  <body ng-app>
    {{ 'Hello' + 'World' }}
  </body>
</html>
```

. .

. Angular DOM . Angular **Misko** Angular .

" .

HTML Angular . `ng-app` . .

- `ng-click` : ,
- `ng-hide`
- `<form>` : HTML .

Angular 100 . , .

HTML Angular .

Minification ?

.

.

( ) :

```
var app = angular.module('mainApp', []);
app.controller('FirstController', function($scope) {
    $scope.name= 'Hello World !';
});
```

minification tool .

```
var app=angular.module("mainApp",[]);app.controller("FirstController",function(e){e.name=
'Hello World !'})
```

minification $ scope . . $ scope 'e' . 'e' .

.

```
var app = angular.module('mainApp', []);
app.controller('FirstController', ['$scope', function($scope) {
    $scope.message = 'Hello World !';
}]);
```

$ inject

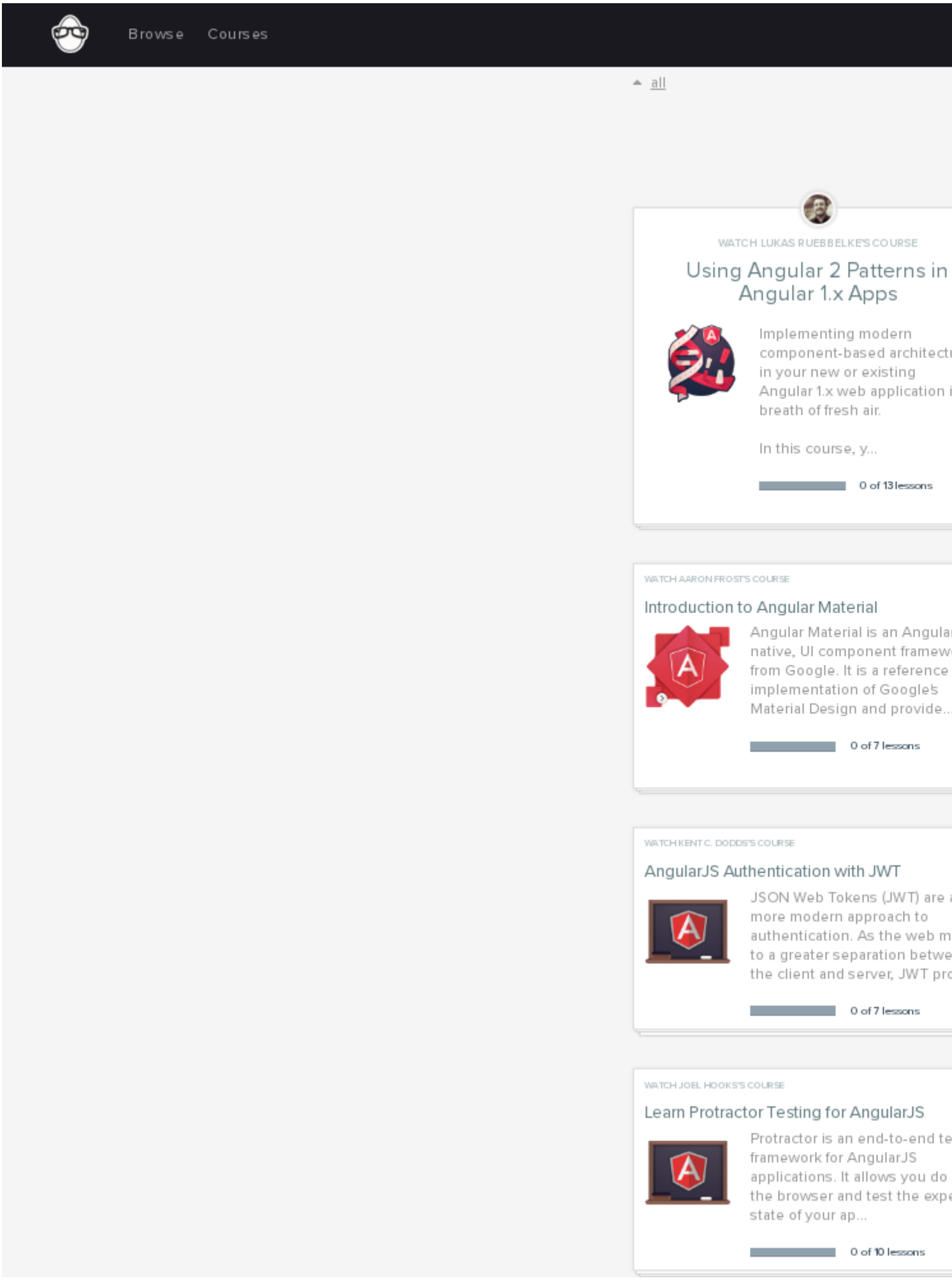
```
FirstController.$inject = ['$scope'];
var FirstController = function($scope) {
    $scope.message = 'Hello World !';
}

var app = angular.module('mainApp', []);
app.controller('FirstController', FirstController);
```

```
var
app=angular.module("mainApp",[]);app.controller("FirstController",["$scope",function(a){a.message="Hel
World !"}]);
```

angle 'a' $ scope 'Hello World!' .

AngularJS

egghead.io AngularJS .



- https://egghead.io/courses/angularjs-app-from-scratch-getting-started

- https://egghead.io/courses/angularjs-application-architecture
- https://egghead.io/courses/angular-material-introduction
- https://egghead.io/courses/building-an-angular-1-x-ionic-application
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- https://egghead.io/courses/build-angular-1-x-apps-with-redux
- https://egghead.io/courses/using-angular-2-patterns-in-angular-1-x-apps

AngularJS : https://riptutorial.com/ko/angularjs/topic/295/angularjs-

2: $ http

Examples

$ http

`$http` HTTP .

```
// Simple GET request example:
$http({
  method: 'GET',
  url: '/someUrl'
}).then(function successCallback(response) {
    // this callback will be called asynchronously
    // when the response is available
  }, function errorCallback(response) {
    // called asynchronously if an error occurs
    // or server returns response with an error status.
  });
```

```
appName.controller('controllerName',
    ['$http', function($http){

    // Simple GET request example:
    $http({
        method: 'GET',
        url: '/someUrl'
    }).then(function successCallback(response) {
        // this callback will be called asynchronously
        // when the response is available
    }, function errorCallback(response) {
        // called asynchronously if an error occurs
        // or server returns response with an error status.
    });
}])
```

`$http` . http .

```
$http.get('/someUrl', config).then(successCallback, errorCallback);
$http.post('/someUrl', data, config).then(successCallback, errorCallback);
```

- $ http.get
- $ http.head
- $ http.post
- $ http.put
- $ http.delete
- $ http.jsonp
- $ http.patch

$ http

HTTP .

`httpRequestsService.js`

httpRequestsService.js

```
appName.service('httpRequestsService', function($q, $http){

    return {
        // function that performs a basic get request
        getName: function(){
            // make sure $http is injected
            return $http.get("/someAPI/names")
                .then(function(response) {
                    // return the result as a promise
                    return response;
                }, function(response) {
                    // defer the promise
                    return $q.reject(response.data);
                });
        },

        // add functions for other requests made by your app
        addName: function(){
            // some code...
        }
    }
})
```

. .

```
appName.controller('controllerName',
    ['httpRequestsService', function(httpRequestsService){

        // we injected httpRequestsService service on this controller
        // that made the getName() function available to use.
        httpRequestsService.getName()
            .then(function(response){
                // success
            }, function(error){
                // do something with the error
            })
    }])
```

httpRequestsService.js .

$ http

$ http . . .

```
$scope.names = [];

$http({
    method: 'GET',
    url: '/someURL'
}).then(function successCallback(response) {
```

```
            $scope.names = response.data;
        },
        function errorCallback(response) {
            alert(response.status);
        });

alert("The first name is: " + $scope.names[0]);
```

$ http `$scope.names[0]` . .

```
$scope.names = [];

$scope.$watch('names', function(newVal, oldVal) {
    if(!(newVal.length == 0)) {
        alert("The first name is: " + $scope.names[0]);
    }
});

$http({
    method: 'GET',
    url: '/someURL'
}).then(function successCallback(response) {
            $scope.names = response.data;
        },
        function errorCallback(response) {
            alert(response.status);
        });
```

$ watch `$scope.names` . `$scope.names` `newVal.length` 0 `newVal.length` . `$scope.names` watch .

$ http : https://riptutorial.com/ko/angularjs/topic/3620/--http-

3: $ q

Examples

$ q.all

`$q.all .then .`

:

JS :

```
 $scope.data = []

 $q.all([
    $http.get("data.json"),
    $http.get("more-data.json"),
    ]).then(function(responses) {
      $scope.data = responses.map((resp) => resp.data);
    });
```

`$http.get` , JSON 2 `get` , , `.then` `responses` .

.

HTML :

```
<ul>
   <li ng-repeat="d in data">
      <ul>
         <li ng-repeat="item in d">{{item.name}}: {{item.occupation}}</li>
      </ul>
   </li>
</ul>
```

JSON :

```
[{
  "name": "alice",
  "occupation": "manager"
}, {
  "name": "bob",
  "occupation": "developer"
}]
```

$ q

`$q` API .

$ q ((,) {...})

resolve reject .

1 :

```
function $timeout(fn, delay) {
    return = $q(function(resolve, reject) {
         setTimeout(function() {
              try {
                 let r = fn();
                 resolve(r);
              }
              catch (e) {
                 reject(e);
              }
         }, delay);
     };
}
```

WindowTimers.setTimeout API . AngularJS . AngularJS $ timeout Service API Reference .

2 :

```
$scope.divide = function(a, b) {
    return $q(function(resolve, reject) {
      if (b===0) {
        return reject("Cannot devide by 0")
      } else {
        return resolve(a/b);
      }
    });
}
```

, .

.then

```
$scope.divide(7, 2).then(function(result) {
    // will return 3.5
}, function(err) {
    // will not run
})

$scope.divide(2, 0).then(function(result) {
    // will not run as the calculation will fail on a divide by 0
}, function(err) {
    // will return the error string.
})
```

$ q.defer

$q.defer $q . $q $q.defer .

$q . $q.defer .

:

```
var runAnimation = function(animation, duration) {
    var deferred = $q.defer();
    try {
        ...
        // run some animation for a given duration
        deferred.resolve("done");
    } catch (err) {
        // in case of error we would want to run the error hander of .then
        deferred.reject(err);
    }
    return deferred.promise;
}

// and then
runAnimation.then(function(status) {}, function(error) {})
```

1. `deferred.promise` `.then` `.then`
2. `.then`

$ q

`$q` ( ) .

`$q` `$rootScope.Scope` ., UI .

`getMyData` . `resolved` `.rejected` 2 .

```
function getMyData($timeout, $q) {
  return function() {
    // simulated async function
    var promise = $timeout(function() {
      if(Math.round(Math.random())) {
        return 'data received!'
      } else {
        return $q.reject('oh no an error! try again')
      }
    }, 2000);
    return promise;
  }
}
```

```
angular.module('app', [])
.factory('getMyData', getMyData)
.run(function(getData) {
  var promise = getData()
    .then(function(string) {
      console.log(string)
    }, function(error) {
      console.error(error)
    })
    .finally(function() {
      console.log('Finished at:', new Date())
```

```
    })
})
```

`$q . getMyData $q .`

```
var defer = $q.defer();
```

deferred `$q.defer()` .

`. $q.deferred() resolve() , reject() notify()` .

- `resolve(value)` - .
- `reject(reason)` - .
- `notify(value)` - . .

promise promise . `promise` - {} - .

`deferred.promise` .

`promise` .

-

- `then(successCallback, [errorCallback], [notifyCallback])` - . . 0 .
- `catch(errorCallback)` - promise.then (null, errorCallback) .
- `finally(callback, notifyCallback)` - .

. . .

1 :

```
// Creates a promise that when resolved, returns 4.
function getNumbers() {

  var promise = $timeout(function() {
    return 4;
  }, 1000);

  return promise;
}

// Resolve getNumbers() and chain subsequent then() calls to decrement
// initial number from 4 to 0 and then output a string.
getNumbers()
  .then(function(num) {
      // 4
      console.log(num);
      return --num;
  })
  .then(function (num) {
      // 3
      console.log(num);
```

```
    return --num;
  })
   .then(function (num) {
    // 2
    console.log(num);
    return --num;
  })
  .then(function (num) {
    // 1
    console.log(num);
    return --num;
  })
  .then(function (num) {
    // 0
    console.log(num);
    return 'And we are done!';
  })
  .then(function (text) {
    // "And we are done!"
    console.log(text);
  });
```

$ q.when () .

.

```
//OVERLY VERBOSE
var defer;
defer = $q.defer();
defer.resolve(['one', 'two']);
return defer.promise;
```

.

```
//BETTER
return $q.when(['one', 'two']);
```

$ q.when $ q.resolve

(3) $ q . .

- AngularJS $ q API - $ q.when

AngularJS v1.4.1

ES6 `resolve`

```
//ABSOLUTELY THE SAME AS when
return $q.resolve(['one', 'two'])
```

$ q

```
var myDeferred = $q.defer();

$http(config).then(function(res) {
   myDeferred.resolve(res);
}, function(error) {
   myDeferred.reject(error);
});

return myDeferred.promise;
```

$ http `$q.defer` .

```
//INSTEAD
return $http(config);
```

$ http .

$ q : https://riptutorial.com/ko/angularjs/topic/4379/--q---

4: AngularJS

Examples

.

1. Angular JavaScript .
2. . prototypically .
3. `ng-repeat` , `ng-switch` , `ng-view` , `ng-if` , `ng-controller` , `ng-include` .

, ( ) . AngularJS "" .

.

1. "." HTML
2. " " `controllerAs` .
3. $ parent `scope` . `ng-model="$parent.foo"` `ng-if` inside.

`ngModel` getter / setter . getter / setter `ngModal` `ng-model-options="{ getterSetter: true }"` expression getter ( ).

:

```
<div ng-app="myApp" ng-controller="MainCtrl">
    <input type="text" ng-model="foo" ng-model-options="{ getterSetter: true }">
    <div ng-if="truthyValue">
        <!-- I'm a child scope (inside ng-if), but i'm synced with changes from the outside
scope -->
        <input type="text" ng-model="foo">
    </div>
    <div>$scope.foo: {{ foo() }}</div>
</div>
```

:

```
angular.module('myApp', []).controller('MainCtrl', ['$scope', function($scope) {
    $scope.truthyValue = true;

    var _foo = 'hello'; // this will be used to cache/represent the value of the 'foo' model

    $scope.foo = function(val) {
        // the function return the the internal '_foo' varibale when called with zero
arguments,
        // and update the internal `_foo` when called with an argument
        return arguments.length ? (_foo = val) : _foo;
    };
}]);
```

: getter ( ) getter .

html5Mode

`html5Mode([mode])` .

1. `index.html` `<base href="">` URL .
2. `base` url . `"Resource interpreted as stylesheet but transferred with MIME type text/html"` . :

```
<head>
    <meta charset="utf-8">
    <title>Job Seeker</title>

    <base href="/">

    <link rel="stylesheet" href="bower_components/bootstrap/dist/css/bootstrap.css" />
    <link rel="stylesheet" href="/styles/main.css">
</head>
```

3. `base` , `$locationProvider` `base` `requireBase:false` `$locationProvider.html5Mode()` :

```
$locationProvider.html5Mode({
    enabled: true,
    requireBase: false
});
```

4. HTML5 URL URL . AngularJS / Developer Guide / Using $ location .

   URL . (: `index.html`) . `<base>` . Angular URL .

   HTTP ui-router FAQ - How to : html5Mode . , Apache

```
 RewriteEngine on

 # Don't rewrite files or directories
 RewriteCond %{REQUEST_FILENAME} -f [OR]
 RewriteCond %{REQUEST_FILENAME} -d
 RewriteRule ^ - [L]

 # Rewrite everything else to index.html to allow html5 state links
 RewriteRule ^ index.html [L]
```

   nginx

```
 server {
     server_name my-app;

     root /path/to/app;

     location / {
         try_files $uri $uri/ /index.html;
     }
 }
```

```
var express = require('express');
var app = express();

app.use('/js', express.static(__dirname + '/js'));
app.use('/dist', express.static(__dirname + '/../dist'));
app.use('/css', express.static(__dirname + '/css'));
app.use('/partials', express.static(__dirname + '/partials'));

app.all('/*', function(req, res, next) {
    // Just send the index.html for other files to support HTML5Mode
    res.sendFile('index.html', { root: __dirname });
});

app.listen(3006); //the port you want to use
```

Angular 7

AngularJS , .

1. DOM

. . DOM , . . . DOM . .

```
link: function($scope, element, attrs) {
    //The best place to manipulate DOM
}
```

`element` , `angular.element()` pure Javascript DOM .

2.

AngularJS . . , AngularJS . . .

```
<my-dir>
    <my-transclusion>
    </my-transclusion>
</my-dir>
```

my-transclusion .

```
<my-dir>
    <my-transclusion>
        <input ng-model="name">
    </my-transclusion>
</my-dir>
```

. transclusion . **$ parent.name** . . . .

```
$scope.data = {
    name: 'someName'
}
```

," .

```
<input ng-model="data.name">
```

.

3.

. . . myDirA myDirB isoleted myDirC .

```
<input my-dir-a my-dirc>
```

.

```
<input my-dir-a my-dir-b>
```

.

4. $ em

$ emit, $ broadcast $ on . , . , A 'someEvent' B catch.

```
$scope.$emit('someEvent', args);
```

'someEvent'

```
$scope.$on('someEvent', function(){});
```

. B . , . , $ emit .

5. $ scope . $ watch

$ scope. $ watch . . $ scope . $ digest loop .

```
$scope.$watch('myCtrl.myVariable', function(newVal) {
    this.myVariable++;
});
```

myVariable newVal .

6.

. AngularJS , . . ng-click, ng-blur, ng-on-change paremeter . , .

```
<input ng-disabled="myCtrl.isDisabled()" ng-model="myCtrl.name">
```

isDisabled . myCtrl .

```
vm.isDisabled = function(){
    if(someCondition)
        return true;
```

```
    else
        return false;
}
```

. . .

```
vm.isDisabled
```

```
if(someCondition)
    vm.isDisabled = true
else
    vm.isDisabled = false
```

. .

```
<input ng-disabled="myCtrl.isDisabled" ng-model="myCtrl.name">
```

.

7. Angular

AngularJS . .

1. **angular.for** (, " ", .)
2. DOM **angular.element**
3. **angular.copy** :
4. . , , , , .
5. Chrome .
6. **Batarang** . Chrome .
   .

AngularJS : https://riptutorial.com/ko/angularjs/topic/3208/angularjs--

5: angularjs ,

Angularjs , .

Examples

Angularjs , .

```
<div ng-app="MainApp" ng-controller="SampleController">
    <input ng-model="dishName" id="search" class="form-control" placeholder="Filter text">
    <ul>
        <li dir-paginate="dish in dishes |  filter : dishName | itemsPerPage: pageSize"
pagination-id="flights">{{dish}}</li>
    </ul>
    <dir-pagination-controls boundary-links="true" on-page-
change="changeHandler(newPageNumber)" pagination-id="flights"></dir-pagination-controls>
</div>
<script type="text/javascript" src="angular.min.js"></script>
<script type="text/javascript" src="pagination.js"></script>
<script type="text/javascript">

var MainApp = angular.module('MainApp', ['angularUtils.directives.dirPagination'])
MainApp.controller('SampleController', ['$scope', '$filter', function ($scope, $filter) {

    $scope.pageSize = 5;

    $scope.dishes = [
    'noodles',
    'sausage',
    'beans on toast',
    'cheeseburger',
    'battered mars bar',
    'crisp butty',
    'yorkshire pudding',
    'wiener schnitzel',
    'sauerkraut mit ei',
    'salad',
    'onion soup',
    'bak choi',
    'avacado maki'
    ];

    $scope.changeHandler = function (newPage) { };
}]);
</script>
```

angularjs , : https://riptutorial.com/ko/angularjs/topic/10821/angularjs------

6: AngularJS (`=`,`@`,`&`)

.

Examples

@ , .

( ) .

( ). . .

```
<one-way text="Simple text." <!-- 'Simple text.' -->
         simple-value="123" <!-- '123' Note, is actually a string object. -->
         interpolated-value="{{parentScopeValue}}" <!-- Some value from parent scope. You
can't change parent scope value, only child scope value. Note, is actually a string object. --
>
         interpolated-function-value="{{parentScopeFunction()}}" <!-- Executes parent scope
function and takes a value. -->

         <!-- Unexpected usage. -->
         object-item="{{objectItem}}" <!-- Converts object|date to string. Result might be:
'{"a":5,"b":"text"}'. -->
         function-item="{{parentScopeFunction}}"> <!-- Will be an empty string. -->
</one-way>
```

= .

. {{...}} .

```
<two-way text="'Simple text.'" <!-- 'Simple text.' -->
         simple-value="123" <!-- 123 Note, is actually a number now. -->
         interpolated-value="parentScopeValue" <!-- Some value from parent scope. You may
change it in one scope and have updated value in another. -->
         object-item="objectItem" <!-- Some object from parent scope. You may change object
properties in one scope and have updated properties in another. -->

         <!-- Unexpected usage. -->
         interpolated-function-value="parentScopeFunction()" <!-- Will raise an error. -->
         function-item="incrementInterpolated"> <!-- Pass the function by reference and you
may use it in child scope. -->
</two-way>
```

. .

& , .

. . , . {{...}} . & ( ).

```
<expression-binding interpolated-function-value="incrementInterpolated(param)" <!--
interpolatedFunctionValue({param: 'Hey'}) will call passed function with an argument. -->
```

```
                    function-item="incrementInterpolated" <!-- functionItem({param: 'Hey'})()
will call passed function, but with no possibility set up a parameter. -->
                    text="'Simple text.'"  <!-- text() == 'Simple text.'-->
                    simple-value="123" <!-- simpleValue() == 123 -->
                    interpolated-value="parentScopeValue" <!-- interpolatedValue() == Some
value from parent scope. -->
                    object-item="objectItem"> <!-- objectItem() == Object item from parent
scope. -->
</expression-binding>
```

.

```
angular.component("SampleComponent", {
  bindings: {
     title: '@',
     movies: '<',
     reservation: "=",
     processReservation: "&"
  }
});
```

.

@ . .

< . .

= . .

& . . children !

```
bindings: {
   mandatory: '='
   optional: '=?',
   foo: '=?bar'
}
```

. =? =?bar ($compile:nonassign) .

AngularJS (`=`,`@`,`&`) : https://riptutorial.com/ko/angularjs/topic/6149/angularjs----------amp---

7: AngularJs SignalR

AngularJs SignalR . angleJs , . SignalR "
https://www.codeproject.com/Tips/590660/Introduction-to-SignalR .

Examples

SignalR AngularJs [ChatProject]

1 :

```
- Application
    - app.js
    - Controllers
        - appController.js
    - Factories
        - SignalR-factory.js
- index.html
- Scripts
    - angular.js
    - jquery.js
    - jquery.signalR.min.js
- Hubs
```

SignalR : signalR-2.2.1

2 : Startup.cs ChatHub.cs

"/ Hubs" [Startup.cs, ChatHub.cs] 2 .

Startup.cs

```
using Microsoft.Owin;
using Owin;
[assembly: OwinStartup(typeof(SignalR.Hubs.Startup))]

namespace SignalR.Hubs
{
    public class Startup
    {
        public void Configuration(IAppBuilder app)
        {
            app.MapSignalR();
        }
    }
}
```

ChatHub.cs

```
using Microsoft.AspNet.SignalR;

namespace SignalR.Hubs
```

```
{
    public class ChatHub : Hub
    {
        public void Send(string name, string message, string time)
        {
            Clients.All.broadcastMessage(name, message, time);
        }
    }
}
```

3 :

"/ Application" [app.js]

app.js

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

4 : SignalR Factory

"/ Application / Factories" [SignalR-factory.js]

SignalR-factory.js

```
app.factory("signalR", function () {
    var factory = {};

    factory.url = function (url) {
        $.connection.hub.url = url;
    }

    factory.setHubName = function (hubName) {
        factory.hub = hubName;
    }

    factory.connectToHub = function () {
        return $.connection[factory.hub];
    }

    factory.client = function () {
        var hub = factory.connectToHub();
        return hub.client;
    }

    factory.server = function () {
        var hub = factory.connectToHub();
        return hub.server;
    }

    factory.start = function (fn) {
        return $.connection.hub.start().done(fn);
    }

    return factory;
});
```

5 : app.js

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

app.run(function(signalR) {
    signalR.url("http://localhost:21991/signalr");
});
```

localhost : 21991 / signalr | **SignalR Hubs URL**

6 :

"/ Application / Controllers" [appController.js]

```
app.controller("ctrl", function ($scope, signalR) {
    $scope.messages = [];
    $scope.user = {};

    signalR.setHubName("chatHub");

    signalR.client().broadcastMessage = function (name, message, time) {
        var newChat = { name: name, message: message, time: time };

        $scope.$apply(function() {
            $scope.messages.push(newChat);
        });
    };

    signalR.start(function () {
        $scope.send = function () {
            var dt = new Date();
            var time = dt.getHours() + ":" + dt.getMinutes() + ":" + dt.getSeconds();

            signalR.server().send($scope.user.name, $scope.user.message, time);
        }
    });
});
```

signalR.setHubName ("chatHub") | **[ChatHub] ( )>** *ChatHub.cs*

: *HubName* . .

signalR.client () | , "chatHub" "broadcastMessage ()" .

7 : index.html

index.html

```
<!DOCTYPE html>
<html ng-app="app" ng-controller="ctrl">
<head>
    <meta charset="utf-8" />
    <title>SignalR Simple Chat</title>
</head>
<body>
    <form>
        <input type="text" placeholder="name" ng-model="user.name" />
        <input type="text" placeholder="message" ng-model="user.message" />
        <button ng-click="send()">send</button>
```

```
        <ul>
            <li ng-repeat="item in messages">
                <b ng-bind="item.name"></b> <small ng-bind="item.time"></small> :
{{item.message}}
            </li>
        </ul>
    </form>

    <script src="Scripts/angular.min.js"></script>
    <script src="Scripts/jquery-1.6.4.min.js"></script>
    <script src="Scripts/jquery.signalR-2.2.1.min.js"></script>
    <script src="signalr/hubs"></script>
    <script src="app.js"></script>
    <script src="SignalR-factory.js"></script>
</body>
</html
```

1 ( )

2 ( )

AngularJs SignalR : https://riptutorial.com/ko/angularjs/topic/9964/angularjs-signalr

8: ES6

Examples

Object Oriented Programming ES6 angularJS .

```
class exampleContoller{

       constructor(service1,service2,...serviceN){
          let ctrl=this;
              ctrl.service1=service1;
              ctrl.service2=service2;
               .
               .
               .
              ctrl.service1=service1;
              ctrl.controllerName = 'Example Controller';
              ctrl.method1(controllerName)

       }

       method1(param){
          let ctrl=this;
               ctrl.service1.serviceFunction();
              .
              .
              ctrl.scopeName=param;
       }
       .
       .
       .
       methodN(param){
          let ctrl=this;
               ctrl.service1.serviceFunction();
              .
              .
       }


   }
   exampleContoller.$inject = ['service1','service2',...,'serviceN'];
   export default exampleContoller;
```

ES6 : https://riptutorial.com/ko/angularjs/topic/9419/es6-

9: ES6

Examples

ES6 FileSize

costum .

```
let fileSize=function (size,unit,fixedDigit) {
return size.toFixed(fixedDigit) + ' '+unit;
};

  let fileSizeFilter=function () {
        return function (size) {
            if (isNaN(size))
                size = 0;

            if (size < 1024)
                return size + ' octets';

            size /= 1024;

            if (size < 1024)
               return fileSize(size,'Ko',2);

            size /= 1024;

            if (size < 1024)
               return  fileSize(size,'Mo',2);

            size /= 1024;

            if (size < 1024)
               return  fileSize(size,'Go',2);

            size /= 1024;
            return  fileSize(size,'To',2);
        };
    };
export default fileSizeFilter;
```

:

```
import fileSizeFilter from 'path...';
let myMainModule =
    angular.module('mainApp', [])
   .filter('fileSize', fileSizeFilter);
```

html :

```
<div ng-app="mainApp">

    <div>
        <input type="text" ng-model="size" />
```

```
    </div>
    <div>
        <h3>Output:</h3>
        <p>{{size| Filesize}}</p>
    </div>
</div>
```

ES6 : https://riptutorial.com/ko/angularjs/topic/9421/es6---

10: HTTP

AngularJS $ http HTTP . . . HTTP . .

Examples

Angular builtin `$http` HTTP . . .

httpInterceptor

HTML .

```
<!DOCTYPE html>
<html>
<head>
  <title>Angular Interceptor Sample</title>
  <script src="https://code.angularjs.org/1.5.8/angular.min.js"></script>
  <script src="app.js"></script>
  <script src="appController.js"></script>
  <script src="genericInterceptor.js"></script>
</head>
<body ng-app="interceptorApp">
    <div ng-controller="appController as vm">
        <button ng-click="vm.sendRequest()">Send a request</button>
    </div>
</body>
</html>
```

'app.js' .

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

interceptorApp.config(function($httpProvider) {
        $httpProvider.interceptors.push('genericInterceptor');
});
```

'appController.js' :

```
(function() {
    'use strict';

    function appController($http) {
        var vm = this;

        vm.sendRequest = function(){
            $http.get('http://google.com').then(function(response){
                console.log(response);
            });
        };
    }

    angular.module('interceptorApp').controller('appController',['$http', appController]);
})();
```

'genericInterceptor.js' :

```
(function() {
    "use strict";

    function genericInterceptor($q) {
        this.responseError = function (response) {
            return $q.reject(response);
        };

        this.requestError = function(request){
            if (canRecover(rejection)) {
                return responseOrNewPromise
            }
            return $q.reject(rejection);
        };

        this.response = function(response){
            return response;
        };

        this.request = function(config){
            return config;
        }
    }

    angular.module('interceptorApp').service('genericInterceptor', genericInterceptor);
})();
```

'genericInterceptor' .

http

HTML (index.html) HTML div div

```
<div class="flashmessage" ng-if="isVisible">
    {{flashMessage}}
</div>
```

config httpProvider httpProvider . rootScope .

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

    interceptorTest.config(['$httpProvider',function ($httpProvider) {

        $httpProvider.interceptors.push(["$rootScope",function ($rootScope) {
            return {     //intercept only the response
                        'response': function (response)
                                    {

$rootScope.showFeedBack(response.status,response.data.message);

                                      return response;
                                    }
                    };
        }]);
```

```
    }])
```

(, httpProvider) , run rootscope .

$ timeout flash . 3000ms.

```
interceptorTest.run(["$rootScope","$timeout",function($rootScope,$timeout){
     $rootScope.showFeedBack = function(status,message){

        $rootScope.isVisible = true;
        $rootScope.flashMessage = message;
        $timeout(function(){$rootScope.isVisible = false },3000)
    }
}]);
```

$ rootScope . .

HTTP : https://riptutorial.com/ko/angularjs/topic/6484/http-

11: ng

'ngStyle' HTML CSS . AngularJS HTML *style* anggs `ng-style` . .

- `<ANY ng-style="expression"></ANY >`
- `<ANY class="ng-style: expression;"> ... </ANY>`

Examples

ng

"status" .

```
<img class="img-responsive"  ng-src="{{imagesrc}}"
    ng-style="{'opacity' : (status == 2) ? 1 : 0.5}">
```

ng : https://riptutorial.com/ko/angularjs/topic/8773/ng-

12: ng-class

Examples

ng-class

Angular `ng-class` .

1.

```
<span ng-class="MyClass">Sample Text</span>
```

Angular $ scope . Angular $ "MyClass" . "MyClass" `<span>` . .

.

```
$scope.MyClass = "bold-red deleted error";
```

Angular `MyClass` $. `<span>` "bold-red", "deleted" "error" .

. . `$scope` . HTML `ng-class` .

2.

`ng-class` . .

- . () true .

```
<style>
    .red { color: red; font-weight: bold; }
    .blue { color: blue; }
    .green { color: green; }
    .highlighted { background-color: yellow; color: black; }
</style>

<span ng-class="{ red: ShowRed, blue: ShowBlue, green: ShowGreen, highlighted: IsHighlighted
}">Sample Text</span>

<div>Red: <input type="checkbox" ng-model="ShowRed"></div>
<div>Green: <input type="checkbox" ng-model="ShowGreen"></div>
<div>Blue: <input type="checkbox" ng-model="ShowBlue"></div>
<div>Highlight: <input type="checkbox" ng-model="IsHighlighted"></div>
```

3.

(# 1) (# 2) .

```
<style>
    .bold { font-weight: bold; }
    .strike { text-decoration: line-through; }
    .orange { color: orange; }
</style>

<p ng-class="[ UserStyle, {orange: warning} ]">Array of Both Expression Types</p>
<input ng-model="UserStyle" placeholder="Type 'bold' and/or 'strike'"><br>
<label><input type="checkbox" ng-model="warning"> warning (apply "orange" class)</label>
```

UserStyle . <p> . warning . <p> .

ng-class : https://riptutorial.com/ko/angularjs/topic/2395/ng-class-

13: ngModelController

Examples

:

, .

```
<rating min="0" max="5" nullifier="true" ng-model="data.rating"></rating>
```

CSS . .

```
0 1 2 3 4 5 x
```

. "x" null .

```
app.directive('rating', function() {

    function RatingController() {
        this._ngModel = null;
        this.rating = null;
        this.options = null;
        this.min = typeof this.min === 'number' ? this.min : 1;
        this.max = typeof this.max === 'number' ? this.max : 5;
    }

    RatingController.prototype.setNgModel = function(ngModel) {
        this._ngModel = ngModel;

        if( ngModel ) {
            // KEY POINT 1
            ngModel.$render = this._render.bind(this);
        }
    };

    RatingController.prototype._render = function() {
        this.rating = this._ngModel.$viewValue != null ? this._ngModel.$viewValue : -
Number.MAX_VALUE;
    };

    RatingController.prototype._calculateOptions = function() {
        if( this.min == null || this.max == null ) {
            this.options = [];
        }
        else {
            this.options = new Array(this.max - this.min + 1);
            for( var i=0; i < this.options.length; i++ ) {
                this.options[i] = this.min + i;
            }
        }
    };

    RatingController.prototype.setValue = function(val) {
        this.rating = val;
```

```
        // KEY POINT 2
        this._ngModel.$setViewValue(val);
    };

    // KEY POINT 3
    Object.defineProperty(RatingController.prototype, 'min', {
        get: function() {
            return this._min;
        },
        set: function(val) {
            this._min = val;
            this._calculateOptions();
        }
    });

    Object.defineProperty(RatingController.prototype, 'max', {
        get: function() {
            return this._max;
        },
        set: function(val) {
            this._max = val;
            this._calculateOptions();
        }
    });

    return {
        restrict: 'E',
        scope: {
            // KEY POINT 3
            min: '<?',
            max: '<?',
            nullifier: '<?'
        },
        bindToController: true,
        controllerAs: 'ctrl',
        controller: RatingController,
        require: ['rating', 'ngModel'],
        link: function(scope, elem, attrs, ctrls) {
            ctrls[0].setNgModel(ctrls[1]);
        },
        template:
            '<span ng-repeat="o in ctrl.options" href="#" class="rating-option" ng-
class="{\'rating-option-active\': o <= ctrl.rating}" ng-click="ctrl.setValue(o)">{{ o
}}</span>' +
            '<span ng-if="ctrl.nullifier" ng-click="ctrl.setValue(null)" class="rating-
nullifier">&#10006;</span>'
    };
});
```

:

1. `ngModel.$render` .
2. `ngModel.$setViewValue()` `ngModel.$setViewValue()` .
3. . > = 1.5 `'<'` - . JavaScript (`Object.defineProperty()`) .

1 : rating (`ctrl.options` . . `min` / `max` / DOM .

2 : `'<'` Angular <1.5 . Angular> = 1.5 `$onInit()` `min` `max` .

: https://jsfiddle.net/h81mgxma/

:

. . . . .

```
<input-person ng-model="data.thePerson"></input-person>
<input-address ng-model="data.thePerson.address"></input-address>
```

.

```
function Person(data) {
  data = data || {};
  this.name = data.name;
  this.address = data.address ? new Address(data.address) : null;
}

function Address(data) {
  data = data || {};
  this.street = data.street;
  this.number = data.number;
}
```

:

```
app.directive('inputAddress', function() {

    InputAddressController.$inject = ['$scope'];
    function InputAddressController($scope) {
        this.$scope = $scope;
        this._ngModel = null;
        this.value = null;
        this._unwatch = angular.noop;
    }

    InputAddressController.prototype.setNgModel = function(ngModel) {
        this._ngModel = ngModel;

        if( ngModel ) {
            // KEY POINT 3
            ngModel.$render = this._render.bind(this);
        }
    };

    InputAddressController.prototype._makeWatch = function() {
        // KEY POINT 1
        this._unwatch = this.$scope.$watchCollection(
            (function() {
                return this.value;
            }).bind(this),
            (function(newval, oldval) {
                if( newval !== oldval ) { // skip the initial trigger
                    this._ngModel.$setViewValue(newval !== null ? new Address(newval) : null);
                }
            }).bind(this)
        );
    };
```

```
    InputAddressController.prototype._render = function() {
        // KEY POINT 2
        this._unwatch();
        this.value = this._ngModel.$viewValue ? new Address(this._ngModel.$viewValue) : null;
        this._makeWatch();
    };

    return {
        restrict: 'E',
        scope: {},
        bindToController: true,
        controllerAs: 'ctrl',
        controller: InputAddressController,
        require: ['inputAddress', 'ngModel'],
        link: function(scope, elem, attrs, ctrls) {
            ctrls[0].setNgModel(ctrls[1]);
        },
        template:
            '<div>' +
                '<label><span>Street:</span><input type="text" ng-model="ctrl.value.street"
/></label>' +
                '<label><span>Number:</span><input type="text" ng-model="ctrl.value.number"
/></label>' +
            '</div>'
    };
});
```

:

1. . ( ). `$setViewValue()` . .
2. . . watch (`this_unwatch();this._makeWatch();`) . UI .
3. , `ngModel.$render()` `ngModel.$setViewValue()` ( ) .

. `<input-address>` . .

```
app.directive('inputPerson', function() {

    InputPersonController.$inject = ['$scope'];
    function InputPersonController($scope) {
        this.$scope = $scope;
        this._ngModel = null;
        this.value = null;
        this._unwatch = angular.noop;
    }

    InputPersonController.prototype.setNgModel = function(ngModel) {
        this._ngModel = ngModel;

        if( ngModel ) {
            ngModel.$render = this._render.bind(this);
        }
    };

    InputPersonController.prototype._makeWatch = function() {
        this._unwatch = this.$scope.$watchCollection(
            (function() {
                return this.value;
            }).bind(this),
```

```
            (function(newval, oldval) {
                if( newval !== oldval ) { // skip the initial trigger
                    this._ngModel.$setViewValue(newval !== null ? new Person(newval) : null);
                }
            }).bind(this)
        );
    };

    InputPersonController.prototype._render = function() {
        this._unwatch();
        this.value = this._ngModel.$viewValue ? new Person(this._ngModel.$viewValue) : null;
        this._makeWatch();
    };

    return {
        restrict: 'E',
        scope: {},
        bindToController: true,
        controllerAs: 'ctrl',
        controller: InputPersonController,
        require: ['inputPerson', 'ngModel'],
        link: function(scope, elem, attrs, ctrls) {
            ctrls[0].setNgModel(ctrls[1]);
        },
        template:
            '<div>' +
                '<label><span>Name:</span><input type="text" ng-model="ctrl.value.name"
/></label>' +
                '<input-address ng-model="ctrl.value.address"></input-address>' +
            '</div>'
    };
});
```

: ., . . JSON . `angular.copy()` . .

: https://jsfiddle.net/3tzyqfko/2/

: https://jsfiddle.net/agj4cp0e/ https://jsfiddle.net/ugb6Lw8b/

ngModelController : https://riptutorial.com/ko/angularjs/topic/2438/ngmodelcontroller--

14: ngRoute

`ngRoute` - (build-in) `ngRoute` .

`ngRoute` https://docs.angularjs.org/api/ngRoute .

Examples

`controllerAs` 3 .

`.config` .

1. `$routeProvider` `.config` .
2. `.when` .
3. `.when` `template` `templateUrl` , `controller` `controllerAs` .

app.js

```
angular.module('myApp', ['ngRoute'])
  .controller('controllerOne', function() {
    this.message = 'Hello world from Controller One!';
  })
  .controller('controllerTwo', function() {
    this.message = 'Hello world from Controller Two!';
  })
  .controller('controllerThree', function() {
    this.message = 'Hello world from Controller Three!';
  })
  .config(function($routeProvider) {
    $routeProvider
    .when('/one', {
      templateUrl: 'view-one.html',
      controller: 'controllerOne',
      controllerAs: 'ctrlOne'
    })
    .when('/two', {
      templateUrl: 'view-two.html',
      controller: 'controllerTwo',
      controllerAs: 'ctrlTwo'
    })
    .when('/three', {
      templateUrl: 'view-three.html',
      controller: 'controllerThree',
      controllerAs: 'ctrlThree'
    })
    // redirect to here if no other routes match
    .otherwise({
      redirectTo: '/one'
    });
  });
```

HTML `<a>` `href` `helloRoute` `helloRoute` `<a href="#/helloRoute">My route</a>`

`ng-view` .

index.html

```
<div ng-app="myApp">
  <nav>
    <!-- links to switch routes -->
    <a href="#/one">View One</a>
    <a href="#/two">View Two</a>
    <a href="#/three">View Three</a>
  </nav>
  <!-- views will be injected here -->
  <div ng-view></div>
  <!-- templates can live in normal html files -->
  <script type="text/ng-template" id="view-one.html">
    <h1>{{ctrlOne.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-two.html">
    <h1>{{ctrlTwo.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-three.html">
    <h1>{{ctrlThree.message}}</h1>
  </script>
</div>
```

.

.

1.
2. `$routeParams` .

app.js

```
angular.module('myApp', ['ngRoute'])
  .controller('controllerOne', function() {
    this.message = 'Hello world from Controller One!';
  })
  .controller('controllerTwo', function() {
    this.message = 'Hello world from Controller Two!';
  })
  .controller('controllerThree', ['$routeParams', function($routeParams) {
    var routeParam = $routeParams.paramName

    if ($routeParams.message) {
        // If a param called 'message' exists, we show it's value as the message
        this.message = $routeParams.message;
    } else {
        // If it doesn't exist, we show a default message
        this.message = 'Hello world from Controller Three!';
    }
  }])
  .config(function($routeProvider) {
    $routeProvider
    .when('/one', {
      templateUrl: 'view-one.html',
      controller: 'controllerOne',
      controllerAs: 'ctrlOne'
```

```
    })
    .when('/two', {
      templateUrl: 'view-two.html',
      controller: 'controllerTwo',
      controllerAs: 'ctrlTwo'
    })
    .when('/three', {
      templateUrl: 'view-three.html',
      controller: 'controllerThree',
      controllerAs: 'ctrlThree'
    })
    .when('/three/:message', { // We will pass a param called 'message' with this route
      templateUrl: 'view-three.html',
      controller: 'controllerThree',
      controllerAs: 'ctrlThree'
    })
    // redirect to here if no other routes match
    .otherwise({
      redirectTo: '/one'
    });
  });
```

.

index.html

```
<div ng-app="myApp">
  <nav>
    <!-- links to switch routes -->
    <a href="#/one">View One</a>
    <a href="#/two">View Two</a>
    <a href="#/three">View Three</a>
    <!-- New link with custom message -->
    <a href="#/three/This-is-a-message">View Three with "This-is-a-message" custom message</a>
  </nav>
  <!-- views will be injected here -->
  <div ng-view></div>
  <!-- templates can live in normal html files -->
  <script type="text/ng-template" id="view-one.html">
    <h1>{{ctrlOne.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-two.html">
    <h1>{{ctrlTwo.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-three.html">
    <h1>{{ctrlThree.message}}</h1>
  </script>
</div>
```

.

.

1) `routes.js` : (: `requireAuth`)

```
angular.module('yourApp').config(['$routeProvider', function($routeProvider) {
    $routeProvider
        .when('/home', {
            templateUrl: 'templates/home.html',
            requireAuth: true
        })
        .when('/login', {
            templateUrl: 'templates/login.html',
        })
        .otherwise({
            redirectTo: '/home'
        });
}])
```

2) ng-view ($routeProvider) newUrl requireAuth

```
angular.module('YourApp').controller('YourController', ['$scope', 'session', '$location',
    function($scope, session, $location) {

        $scope.$on('$routeChangeStart', function(angularEvent, newUrl) {

            if (newUrl.requireAuth && !session.user) {
                // User isn't authenticated
                $location.path("/login");
            }

        });
    }
]);
```

ngRoute : https://riptutorial.com/ko/angularjs/topic/2391/ngroute--

15: TypeScript AngularJS

- $ scope : ng.IScope - .

Examples

Typescript

AngularJS

 ng-controller DOM Angular Controller Controller . $ scope .

typescript .

```
module App.Controllers {
    class Address {
        line1: string;
        line2: string;
        city: string;
        state: string;
    }
    export class SampleController {
        firstName: string;
        lastName: string;
        age: number;
        address: Address;
        setUpWatches($scope: ng.IScope): void {
            $scope.$watch(() => this.firstName, (n, o) => {
                //n is string and so is o
            });
        };
        constructor($scope: ng.IScope) {
            this.setUpWatches($scope);
        }
    }
}
```

.

```
var App;
(function (App) {
    var Controllers;
    (function (Controllers) {
        var Address = (function () {
            function Address() {
            }
            return Address;
        }());
        var SampleController = (function () {
            function SampleController($scope) {
                this.setUpWatches($scope);
            }
            SampleController.prototype.setUpWatches = function ($scope) {
                var _this = this;
```

```
                $scope.$watch(function () { return _this.firstName; }, function (n, o) {
                    //n is string and so is o
                });
            };
            ;
            return SampleController;
        }());
        Controllers.SampleController = SampleController;
    })(Controllers = App.Controllers || (App.Controllers = {}));
})(App || (App = {}));
//# sourceMappingURL=ExampleController.js.map
```

js .

```
app
 .module('app')
 .controller('exampleController', App.Controller.SampleController)
```

ControllerAs

Controller `controller as` Syntax `controller as` . `$scope` .

`controller as someName` `controller as someName` `$scope` . $ scope .

:

```
// we are using $scope object.
app.controller('MyCtrl', function ($scope) {
  $scope.name = 'John';
});

<div ng-controller="MyCtrl">
  {{name}}
</div>
```

`controller as` **Syntax** **.**

```
// we are using the "this" Object instead of "$scope"
app.controller('MyCtrl', function() {
  this.name = 'John';
});

<div ng-controller="MyCtrl as info">
  {{info.name}}
</div>
```

"" **.**

```
var jsClass = function () {
  this.name = 'John';
}
var jsObj = new jsClass();
```

, **jsObj** **jsClass** **.**

, thing.we .

/

$ scope . minification anguar . ExampleController .

```
function n(n){this.setUpWatches(n)
```

`$scope n` !
$ inject (`string[]`) . DI .
.

```
module App.Controllers {
    class Address {
        line1: string;
        line2: string;
        city: string;
        state: string;
    }
    export class SampleController {
        firstName: string;
        lastName: string;
        age: number;
        address: Address;
        setUpWatches($scope: ng.IScope): void {
            $scope.$watch(() => this.firstName, (n, o) => {
                //n is string and so is o
            });
        };
        static $inject : string[] = ['$scope'];
        constructor($scope: ng.IScope) {
            this.setUpWatches($scope);
        }
    }
}
```

As ?

JavaScript . , `function context` (**`this`**) .

1 :

```
this.constFunction = function() { ... }
```

`$scope controller object .` .

:

```
<a href="#123" ng-click="constFunction()"></a> // It will not work
```

2 :

```
$scope.scopeFunction = function() { ... }
```

$scope object controller object . $scope .

:

```
<a href="#123" ng-click="scopeFunction()"></a> // It will work
```

ControllerAs?

- **ControllerAs** . oneCtrl.name anotherCtrl.name name $scope.name **{{name}}** HTML .
- $scope intermediary object intermediary object . this.* .

```
<div ng-controller="FirstCtrl">
    {{ name }}
    <div ng-controller="SecondCtrl">
        {{ name }}
        <div ng-controller="ThirdCtrl">
            {{ name }}
        </div>
    </div>
</div>
```

{{ name }} .

```
<div ng-controller="FirstCtrl as first">
    {{ first.name }}
    <div ng-controller="SecondCtrl as second">
        {{ second.name }}
        <div ng-controller="ThirdCtrl as third">
            {{ third.name }}
        </div>
    </div>
</div>
```

$?

- $scope $ $watch , $digest , $emit , $http
- $scope / $scope .

TypeScript AngularJS : https://riptutorial.com/ko/angularjs/topic/3477/typescript--angularjs-

16: UI

`ui-router` ?

Angular UI-Router AngularJS .

SPA URL . URL SPA .

UI . UI-Router .

API . `ui-router` VS `ng-router` . `ng-router` ui-router `ngNewRouter` (Angular 1.5 + / 2.0) ng-router . `ngNewRouter` `ngNewRouter` .

Examples

app.js

```
angular.module('myApp', ['ui.router'])
  .controller('controllerOne', function() {
    this.message = 'Hello world from Controller One!';
  })
  .controller('controllerTwo', function() {
    this.message = 'Hello world from Controller Two!';
  })
  .controller('controllerThree', function() {
    this.message = 'Hello world from Controller Three!';
  })
  .config(function($stateProvider, $urlRouterProvider) {
    $stateProvider
      .state('one', {
        url: "/one",
        templateUrl: "view-one.html",
        controller: 'controllerOne',
        controllerAs: 'ctrlOne'
      })
      .state('two', {
        url: "/two",
        templateUrl: "view-two.html",
        controller: 'controllerTwo',
        controllerAs: 'ctrlTwo'
      })
      .state('three', {
        url: "/three",
        templateUrl: "view-three.html",
        controller: 'controllerThree',
        controllerAs: 'ctrlThree'
      });

      $urlRouterProvider.otherwise('/one');
  });
```

index.html

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

```
  <nav>
    <!-- links to switch routes -->
    <a ui-sref="one">View One</a>
    <a ui-sref="two">View Two</a>
    <a ui-sref="three">View Three</a>
  </nav>
  <!-- views will be injected here -->
  <div ui-view></div>
  <!-- templates can live in normal html files -->
  <script type="text/ng-template" id="view-one.html">
    <h1>{{ctrlOne.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-two.html">
    <h1>{{ctrlTwo.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-three.html">
    <h1>{{ctrlThree.message}}</h1>
  </script>
</div>
```

app.js

```
angular.module('myApp', ['ui.router'])
  .controller('controllerOne', function() {
    this.message = 'Hello world from Controller One!';
  })
  .controller('controllerTwo', function() {
    this.message = 'Hello world from Controller Two!';
  })
  .controller('controllerThree', function() {
    this.message = 'Hello world from Controller Three!';
  })
  .controller('controllerFour', function() {
    this.message = 'Hello world from Controller Four!';
  })
  .config(function($stateProvider, $urlRouterProvider) {
    $stateProvider
      .state('one', {
        url: "/one",
        views: {
          "viewA": {
            templateUrl: "view-one.html",
            controller: 'controllerOne',
            controllerAs: 'ctrlOne'
          },
          "viewB": {
            templateUrl: "view-two.html",
            controller: 'controllerTwo',
            controllerAs: 'ctrlTwo'
          }
        }
      })
      .state('two', {
        url: "/two",
        views: {
          "viewA": {
            templateUrl: "view-three.html",
            controller: 'controllerThree',
```

```
            controllerAs: 'ctrlThree'
          },
          "viewB": {
            templateUrl: "view-four.html",
            controller: 'controllerFour',
            controllerAs: 'ctrlFour'
          }
        }
      });

    $urlRouterProvider.otherwise('/one');
  });
```

index.html

```
<div ng-app="myApp">
  <nav>
    <!-- links to switch routes -->
    <a ui-sref="one">Route One</a>
    <a ui-sref="two">Route Two</a>
  </nav>
  <!-- views will be injected here -->
  <div ui-view="viewA"></div>
  <div ui-view="viewB"></div>
  <!-- templates can live in normal html files -->
  <script type="text/ng-template" id="view-one.html">
    <h1>{{ctrlOne.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-two.html">
    <h1>{{ctrlTwo.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-three.html">
    <h1>{{ctrlThree.message}}</h1>
  </script>

  <script type="text/ng-template" id="view-four.html">
    <h1>{{ctrlFour.message}}</h1>
  </script>
</div>
```

resolve

app.js

```
angular.module('myApp', ['ui.router'])
  .service('User', ['$http', function User ($http) {
    this.getProfile = function (id) {
      return $http.get(...) // method to load data from API
    };
  }])
  .controller('profileCtrl', ['profile', function profileCtrl (profile) {
    // inject resolved data under the name of the resolve function
    // data will already be returned and processed
    this.profile = profile;
  }])
  .config(['$stateProvider', '$urlRouterProvider', function ($stateProvider,
```

```
$urlRouterProvider) {
    $stateProvider
      .state('profile', {
        url: "/profile/:userId",
        templateUrl: "profile.html",
        controller: 'profileCtrl',
        controllerAs: 'vm',
        resolve: {
          profile: ['$stateParams', 'User', function ($stateParams, User) {
            // $stateParams will contain any parameter defined in your url
            return User.getProfile($stateParams.userId)
              // .then is only necessary if you need to process returned data
              .then(function (data) {
                return doSomeProcessing(data);
              });
          }]
        }
      }]);

      $urlRouterProvider.otherwise('/');
  });
```

profile.html

```
<ul>
  <li>Name: {{vm.profile.name}}</li>
  <li>Age: {{vm.profile.age}}</li>
  <li>Sex: {{vm.profile.sex}}</li>
</ul>
```

UI .

`$stateChangeSuccess` . , UI `$stateChangeSuccess` . UI . UI .

/

app.js

```
var app = angular.module('myApp',['ui.router']);

app.config(function($stateProvider,$urlRouterProvider) {

    $stateProvider

    .state('home', {
        url: '/home',
        templateUrl: 'home.html',
        controller: function($scope){
            $scope.text = 'This is the Home'
        }
    })

    .state('home.nested1',{
        url: '/nested1',
        templateUrl:'nested1.html',
        controller: function($scope){
            $scope.text1 = 'This is the nested view 1'
```

```
        }
    })

    .state('home.nested2',{
        url: '/nested2',
        templateUrl:'nested2.html',
        controller: function($scope){
            $scope.fruits = ['apple','mango','oranges'];
        }
    });

    $urlRouterProvider.otherwise('/home');

});
```

index.html

```
  <div ui-view></div>
   <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.8/angular.min.js"></script>
   <script src="angular-ui-router.min.js"></script>
   <script src="app.js"></script>
```

home.html

```
<div>
<h1> {{text}} </h1>
<br>
    <a ui-sref="home.nested1">Show nested1</a>
    <br>
    <a ui-sref="home.nested2">Show nested2</a>
    <br>

    <div ui-view></div>
</div>
```

nested1.html

```
<div>
<h1> {{text1}} </h1>
</div>
```

nested2.html

```
<div>
    <ul>
      <li ng-repeat="fruit in fruits">{{ fruit }}</li>
    </ul>
</div>
```

UI : https://riptutorial.com/ko/angularjs/topic/2545/ui-

17: $

Angular , AngularJS . docs.angularjs.org .

injectable $ rootScope . $ $.

Examples

$ scope

```
angular.module('app', [])
.controller('myController', ['$scope', function($scope){
    $scope.person = { name: 'John Doe' };
}]);

<div ng-app="app" ng-conroller="myController">
    <input ng-model="person.name" />
    <div ng-repeat="number in [0,1,2,3]">
        {{person.name}} {{number}}
    </div>
</div>
```

ng-repeat .

(myController), person .

, (, , ( )).

(String, Number, Boolean Symbol) .

```
var x = 5;
var y = x;
y = 6;
console.log(y === x, x, y); //false, 5, 6
```

.

```
var x = { name : 'John Doe' };
var y = x;
y.name = 'Jhon';
console.log(x.name === y.name, x.name, y.name); //true, John, John
```

. .

```
angular.module('app', [])
.controller('myController', ['$scope', function($scope){
    $scope.person = { name: 'John Doe' }; //non-primitive
    $scope.name = 'Jhon Doe'; //primitive
}])
.controller('myController1', ['$scope', function($scope){}]);
```

```
<div ng-app="app" ng-controller="myController">
    binding to input works: {{person.name}}<br/>
    binding to input does not work: {{name}}<br/>
    <div ng-controller="myController1">
        <input ng-model="person.name" />
        <input ng-model="name" />
    </div>
</div>
```

: (: `$scope.$new()`) .

.

. (-) .

, .

rootScope . ( ) .

```
angular.module('app', [])
.run(['$rootScope', function($rootScope){
    var messages = []
    $rootScope.addMessage = function(msg){
        messages.push(msg);
    }
}]);

<div ng-app="app">
    <a ng-click="addMessage('hello world!')">it could be accsessed from here</a>
    <div ng-include="inner.html"></div>
</div>
```

inner.html :

```
<div>
    <button ng-click="addMessage('page')">and from here to!</button>
</div>
```

custom $ scope

HTML $ scopes . $ scope :

```
 $scope.$on('my-event', function(event, args) {
    console.log(args); // { custom: 'data' }
});
```

$ on . .

```
var unregisterMyEvent = $scope.$on('my-event', function(event, args) {
    console.log(args); // { custom: 'data' }
    unregisterMyEvent();
});
```

$ scope **$ broadcast $ emit** . **$ emit .**

```
$scope.$emit('my-event', { custom: 'data' });
```

`my-event` `my-event stopPropagation` **$ rootScope** . **$ emit** `stopPropagation` .

$ $** **$.

```
$scope.$broadcast('my-event', { custom: 'data' });
```

$.

$ scope

$ rootscope , $ scope $ scope . .

```
myApp.controller('myController', ['$scope', function($scope){
    $scope.myFunction = function () {
        alert("You are in myFunction!");
    };
}]);
```

.

```
$scope.myfunction();
```

HTML :

```
<div ng-controller="myController">
    <button ng-click="myFunction()"> Click me! </button>
</div>
```

.

```
myApp.directive('triggerFunction', function() {
    return {
        scope: {
            triggerFunction: '&'
        },
        link: function(scope, element) {
            element.bind('mouseover', function() {
                scope.triggerFunction();
            });
        }
    };
});
```

HTML

```
<div ng-controller="myController">
    <button trigger-function="myFunction()"> Hover over me! </button>
```

```
</div>
```

ngMouseover . $ scope .

?

, "" . AngularJS rootScope . , rootScope .

, . .

.

1. : False ( )
2. : True ( )
3. : {} ( )

: . . ? . . . .

:

```
var app = angular.module("test",[]);

app.controller("Ctrl1",function($scope){
    $scope.name = "Prateek";
    $scope.reverseName = function(){
        $scope.name = $scope.name.split('').reverse().join('');
    };
});
app.directive("myDirective", function(){
    return {
        restrict: "EA",
        scope: {},
        template: "<div>Your name is : {{name}}</div>"+
        "Change your name : <input type='text' ng-model='name'/>"
    };
});
```

AngularJS 3 .

1. "@"(/)
2. "="(/)
3. "&"(/)

.

```
<div my-directive
  class="directive"
  name="{{name}}"
  reverse="reverseName()"
  color="color" >
</div>
```

$: https://riptutorial.com/ko/angularjs/topic/3157/---

18: 2+

AngularJS TypeScript Angular .

AngularJS . " " .

Examples

AngularJS

Angular **Components** . AngularJS Angular .

1.5+ AngularJS . AngularJS Angular 2+ .

AngularJS .

`component` `ng-controller` .

▪

. ( ) ?

`UserListController` , `UserListComponent` .

HTML :

```
<div ng-controller="UserListController as listctrl">
    <ul>
        <li ng-repeat="user in myUserList">
            {{ user }}
        </li>
    </ul>
</div>
```

:

```
app.controller("UserListController", function($scope, SomeService) {

    $scope.myUserList = ['Shin', 'Helias', 'Kalhac'];

    this.someFunction = function() {
        // ...
    }

    // ...
}
```

HTML :

```
<user-list></user-list>
```

JavaScript :

```
app.component("UserList", {
    templateUrl: 'user-list.html',
    controller: UserListController
});

function UserListController(SomeService) {

    this.myUserList = ['Shin', 'Helias', 'Kalhac'];

    this.someFunction = function() {
        // ...
    }

    // ...
}
```

`$scope` `this.myUserList` `$scope.myUserList` `this.myUserList` `$scope.myUserList` .

`user-list.component.html` :

```
<ul>
    <li ng-repeat="user in $ctrl.myUserList">
        {{ user }}
    </li>
</ul>
```

`myUserList` , `$ctrl.myUserList` HTML `$scope.myUserList` .

`$ctrl` .

?

`ng-controller` :

```
$stateProvider
  .state('users', {
    url: '/users',
    templateUrl: 'user-list.html',
    controller: 'UserListController'
  })
  // ..
```

.

```
$stateProvider
    .state('users', {
      url: '/',
```

```
  template: '<user-list></user-list>'
})
// ..
```

?

( ) , .

Component .

-
- `$onInit()` , `$onChanges()` ...

, , .

.

AngularJS Angular .

Angular 2+ . .

Webpack ES6

Webpack **ES6** (**TypeScript**) . .

.

2+ : https://riptutorial.com/ko/angularjs/topic/9942/-2plus-

19: MVC

AngularJS MVC JavaScript HTML . HTML JavaScript . AngularJS .

Examples

MVC

```
var indexController = myApp.controller("indexController", function ($scope) {
    // Application logic goes here
});
```

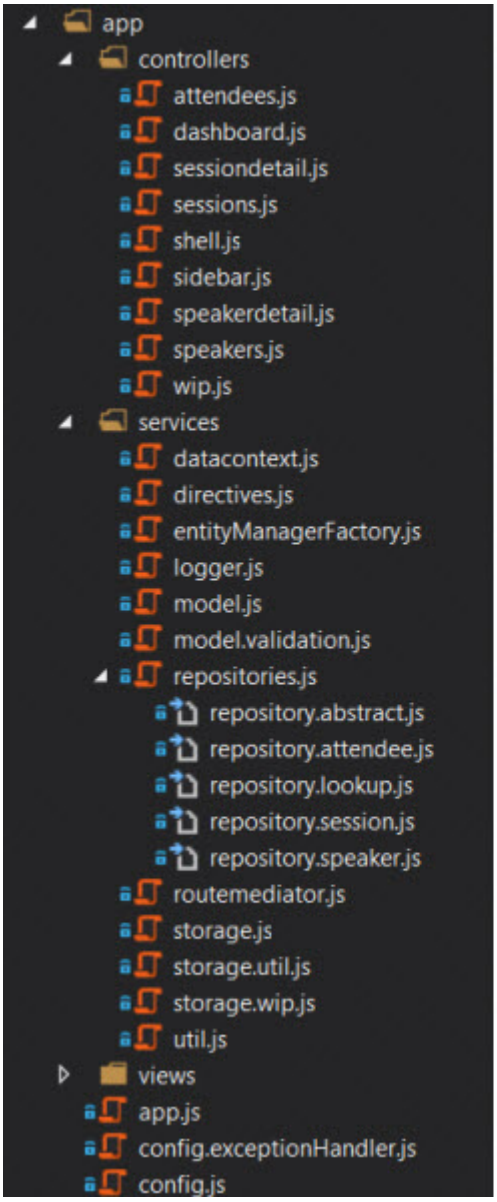
```
var indexController = myApp.controller("indexController", function ($scope) {
    // controller logic goes here
    $scope.message = "Hello Hacking World"
});
```

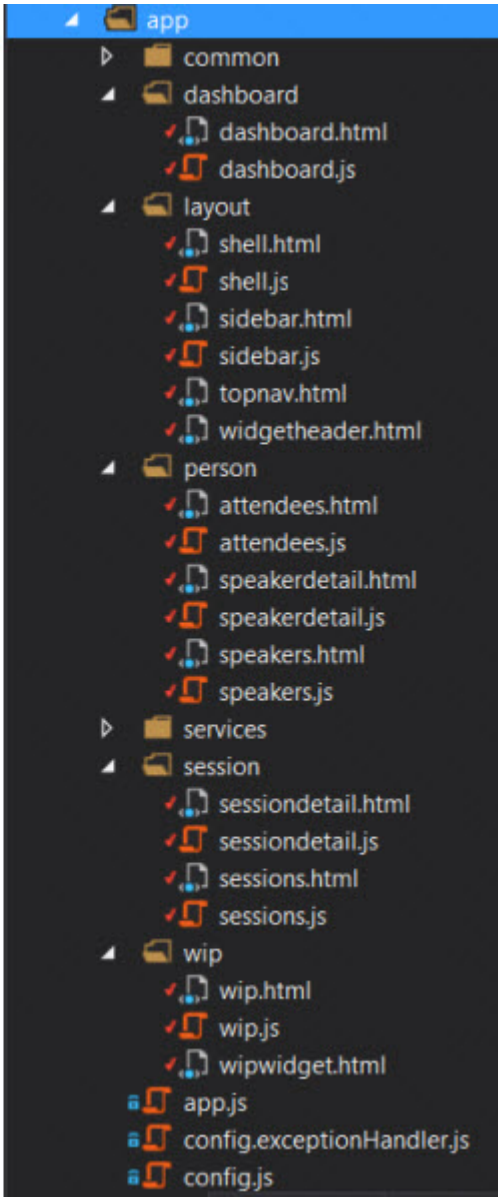
MVC : https://riptutorial.com/ko/angularjs/topic/8667/-mvc

20: -

Examples

- " ?" . () () . . .


app
controllers
attendees.js
dashboard.js
sessiondetail.js
sessions.js
shell.js
sidebar.js
speakerdetail.js
speakers.js
wip.js
services
datacontext.js
directives.js
entityManagerFactory.js
logger.js
model.js
model.validation.js
repositories.js
repository.abstract.js
repository.attendee.js
repository.lookup.js
repository.session.js
repository.speaker.js
routemediator.js
storage.js
storage.util.js
storage.wip.js
util.js
views
app.js
config.exceptionHandler.js
config.js


app
common
dashboard
dashboard.html
dashboard.js
layout
shell.html
shell.js
sidebar.html
sidebar.js
topnav.html
widgetheader.html
person
attendees.html
attendees.js
speakerdetail.html
speakerdetail.js
speakers.html
speakers.js
services
session
sessiondetail.html
sessiondetail.js
sessions.html
sessions.js
wip
wip.html
wip.js
wipwidget.html
app.js
config.exceptionHandler.js
config.js

()

.

- -
- - . .

()

.

, .

- - .
- - "" .

Angular Structure :

:

```
├── app
│   ├── app.js
│   ├── controllers
│   │   ├── home
│   │   │   ├── FirstCtrl.js
│   │   │   └── FirstCtrl.spec.js
│   │   │   └── SecondCtrl.js
│   │   │   └── SecondCtrl.spec.js
│   │   └── about
│   │       └── ThirdCtrl.js
│   │       └── ThirdCtrl.spec.js
│   ├── directives
│   │   ├── home
│   │   │   └── directive1.js
│   │   │   └── directive1.spec.js
│   │   └── about
│   │       ├── directive2.js
│   │       ├── directive2.spec.js
│   │       └── directive3.js
│   │       └── directive3.spec.js
│   ├── filters
│   │   ├── home
│   │   └── about
│   └── services
│       ├── CommonService.js
│       ├── CommonService.spec.js
│       ├── cache
│       │   ├── Cache1.js
│       │   ├── Cache1.spec.js
│       │   └── Cache2.js
│       │   └── Cache2.spec.js
│       └── models
│           ├── Model1.spec.js
│           ├── Model1.js
│           └── Model2.spec.js
```

:

- : https://riptutorial.com/ko/angularjs/topic/6148/-----

21:

1. !

```
angular.module('lazy', [
 'alreadyLoadedDependency1',
 'alreadyLoadedDependency2',
 ...
 {
  files: [
  'path/to/lazily/loaded/dependency1.js',
  'path/to/lazily/loaded/dependency2.js', //<--- requires lazily loaded dependency1
  'path/to/lazily/loaded/dependency.css'
  ],
  serie: true //Sequential load instead of parallel
 }
]);
```

Examples

oclazyload.js oclazyload.js ocLazyLoad app.js

```
//Make sure you put the correct dependency! it is spelled different than the service!
angular.module('app', [
 'oc.lazyLoad',
 'ui-router'
])
```

$ocLazyLoad

```
.controller('someCtrl', function($ocLazyLoad) {
 $ocLazyLoad.load('path/to/file.js').then(...);
});
```

.

:

```
$ocLazyLoad.load([
  'bower_components/bootstrap/dist/js/bootstrap.js',
  'bower_components/bootstrap/dist/css/bootstrap.css',
  'partials/template1.html'
]);
```

.

UI :

```
.state('profile', {
 url: '/profile',
```

```
 controller: 'profileCtrl as vm'
 resolve: {
  module: function($ocLazyLoad) {
   return $ocLazyLoad.load([
    'path/to/profile/module.js',
    'path/to/profile/style.css'
   ]);
  }
 }
});
```

nRRoute :

```
.when('/profile', {
     controller: 'profileCtrl as vm'
     resolve: {
      module: function($ocLazyLoad) {
       return $ocLazyLoad.load([
        'path/to/profile/module.js',
        'path/to/profile/style.css'
       ]);
      }
     }
    });
```

module.js

```
//lazy_module.js
angular.module('lazy', [
 'alreadyLoadedDependency1',
 'alreadyLoadedDependency2',
 ...
 [
  'path/to/lazily/loaded/dependency.js',
  'path/to/lazily/loaded/dependency.css'
 ]
]);
```

: !

```
<div oc-lazy-load="['path/to/lazy/loaded/directive.js',
'path/to/lazy/loaded/directive.html']">

<!-- myDirective available here -->
<my-directive></my-directive>

</div>
```

: https://riptutorial.com/ko/angularjs/topic/6400/

22:

Examples

vs

:

. 'this' .

.

:

.

.

:

.

. .

JavaScript .

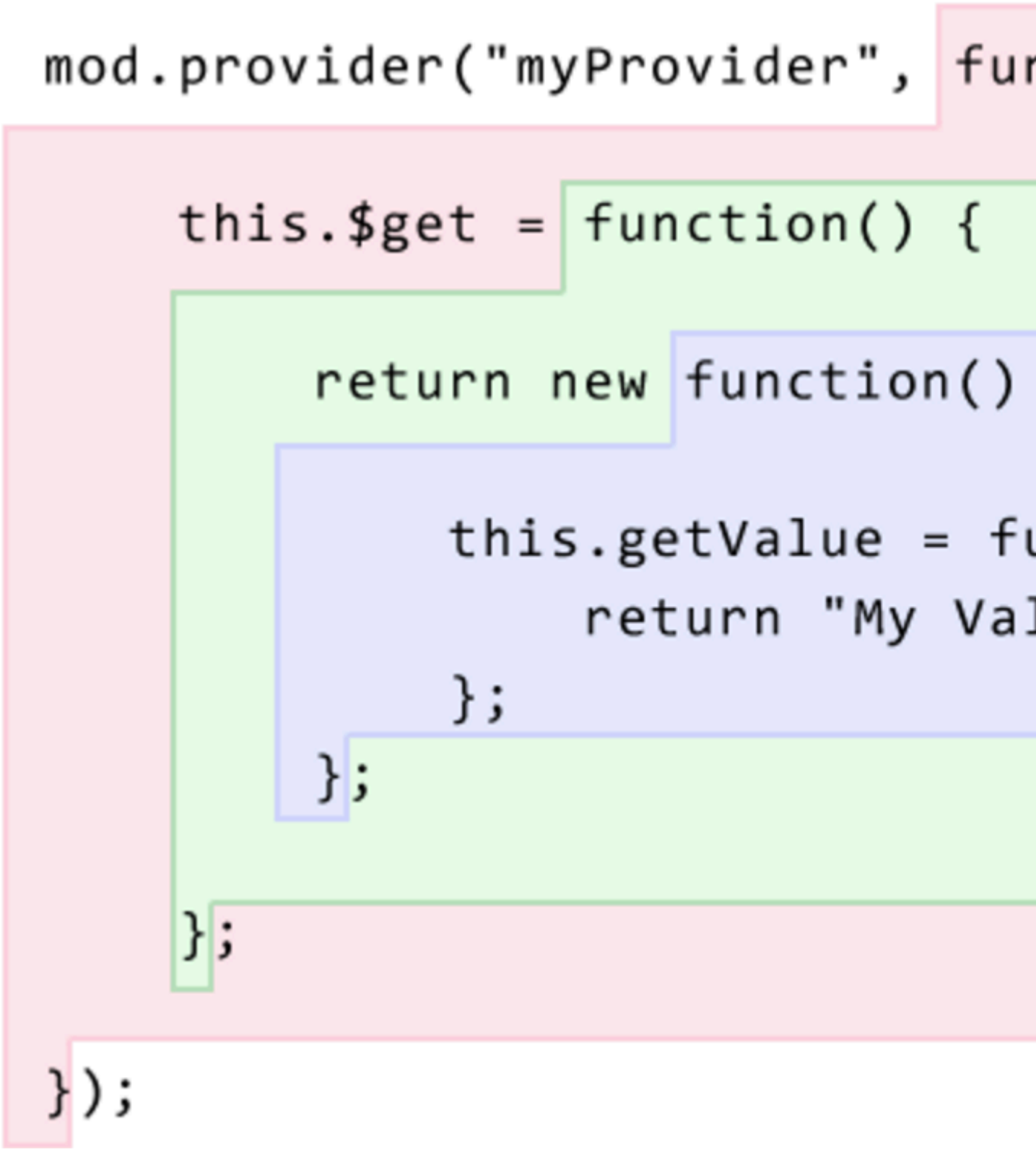
?

ES6 . .

, .

$ get () . .

.



: https://riptutorial.com/ko/angularjs/topic/7099/---

23:

=	. , .
<	.
@	.
&	.
-	-
	(angular.version> = 1.5.3)
$ onInit ()	. .
$ onChanges (changesObj)	. changesObj { currentValue, previousValue, isFirstChange() } .
$ onDestroy ()	. , .
$ postLink ()	. Angular 2 ngAfterViewInit ngAfterContentInit .
$ doCheck ()	. . . $ onChanges .

. Angular 1.5 AngularJS .

https://docs.angularjs.org/guide/component .

Examples

LifeCycle Hooks

?

- Angular 2 . . HTML .

```
angular.module('myApp', [])
    .component('helloWorld', {
        template: '<span>Hello World!</span>'
    });
```

```
<div ng-app="myApp">
  <hello-world> </hello-world>
</div>
```

:

. .

```
angular.module("myApp", [])
  .component("helloWorld",{
    template: '<span>Hello {{$ctrl.name}}!</span>',
    bindings: { name: '@' }
  });
```

```
<div ng-app="myApp">
  <hello-world name="'John'" > </hello-world>
</div>
```

.

```
angular.module("myApp", [])
  .component("helloWorld",{
      template: "Hello {{$ctrl.name}}, I'm {{$ctrl.myName}}!",
      bindings: { name: '@' },
      controller: function(){
        this.myName = 'Alain';
      }
  });
```

```
<div ng-app="myApp">
  <hello-world name="John"> </hello-world>
</div>
```

CodePen

`$onInit` Angular . .

```
angular.module("myApp", [])
  .component("helloWorld",{
      template: "Hello {{$ctrl.name}}, I'm {{$ctrl.myName}}!",
      bindings: { name: '@' },
      controller: function(){
        this.$onInit = function() {
          this.myName = "Mac" + this.name;
        }
      }
  });
```

"Hello John, MacJohn!" .

`$ctrl` `controllerAs` .

"require" Object

.

. require , .

$ onInit .

```
angular.module("myApp", [])
  .component("helloWorld",{
      template: "Hello {{$ctrl.name}}, I'm {{$ctrl.myName}}!",
      bindings: { name: '@' },
      require: {
        parent: '^parentComponent'
      },
      controller: function () {
        // here this.parent might not be initiated yet

        this.$onInit = function() {
           // after $onInit, use this.parent to access required controller
           this.parent.foo();
        }

      }
  });
```

.

JS

angularJS (HTML <html> <ANYTHING>) . . . . .

```
angular.module("myApp",[]).component("customer", {})
```

. . . .

```
angular.module("myApp",[]).component("customer", {
    templateUrl : "customer.html", // your view here
    controller: customerController, //your controller here
    controllerAs: "cust"        //alternate name for your controller
})
```

"myApp" customer . html .

```
<customer></customer>
```

.

: .

: https://riptutorial.com/ko/angularjs/topic/892/-

24:

Examples

-

type="text" type="number" . .

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

 app.controller('ctrl', function($scope) {
     $scope.textInput = {
         value: '5'
     };
     $scope.numberInput = {
         value: 5
     };
 });
```

```
<div ng-app="app" ng-controller="ctrl">
    <input type="text" ng-model="textInput.value">
    {{ textInput.value + 5 }}
    <input type="number" ng-model="numberInput.value">
    {{ numberInput.value + 5 }}
</div>
```

- + ( ) 55 * .
- + ( ) * .

* - , .

ngRepeat

ng-repeat Angular .

```
<ul>
    <li ng-repeat="item in itemCollection">
       {{item.Name}}
    </li>
</ul>
```

:
item =
itemCollection =

```
<ul>
    <li ng-repeat="(key, value) in myObject">
       {{key}} : {{value}}
```

```
    </li>
</ul>
```

:
key =
value =
myObject =

ng-repeat

```
<input type="text" ng-model="searchText">
<ul>
    <li ng-repeat="string in stringArray | filter:searchText">
       {{string}}
    </li>
</ul>
```

:
searchText =
stringArray = (: `['string', 'array']`

`as aliasName` .

```
<input type="text" ng-model="searchText">
<ul>
    <li ng-repeat="string in stringArray | filter:searchText as filteredStrings">
       {{string}}
    </li>
</ul>
<p>There are {{filteredStrings.length}} matching results</p>
```

ng-repeat-start ng-repeat-end

DOM `ng-repeat-start ng-repeat-end` .

```
<ul>
    <li ng-repeat-start="item in [{a: 1, b: 2}, {a: 3, b:4}]">
        {{item.a}}
    </li>
    <li ng-repeat-end>
        {{item.b}}
    </li>
</ul>
```

:

- 1
- 2
-

- 4

`ng-repeat-start` `ng-repeat-end` .

`ng-repeat` .

`$index`		($ index === 0 true ; `$first`)
`$first`		true .
`$last`		true .
`$middle`		`$first` `$last` true .
`$even`		true (`$index%2===0`).
`$odd`		true (`$index%2===1`).

`ngRepeat` .

`track by` . `$index` .

```
<div ng-repeat="item in itemCollection track by item.id">
<div ng-repeat="item in itemCollection track by $index">
```

ngRepeat

`ngRepeat` . .

`ngRepeat` click .

```
scope val:  {{val}}<br/>
ctrlAs val: {{ctrl.val}}
<ul>
    <li ng-repeat="item in itemCollection">
        <a href="#" ng-click="$parent.val=item.value; ctrl.val=item.value;">
            {{item.label}} {{item.value}}
        </a>
    </li>
</ul>

$scope.val = 0;
this.val = 0;

$scope.itemCollection = [{
    id: 0,
    value: 4.99,
    label: 'Football'
},
{
    id: 1,
    value: 6.99,
    label: 'Baseball'
```

```
},
{
    id: 2,
    value: 9.99,
    label: 'Basketball'
}];
```

`ng-click val = item.value` `val` . `$parent` `controllerAs` (: `ng-controller="mainController as ctrl"`) .

ng-repeat .

```
<div ng-repeat="values in test">
    <div ng-repeat="i in values">
      [{{$parent.$index}},{{$index}}] {{i}}
    </div>
</div>

var app = angular.module("myApp", []);
app.controller("ctrl", function($scope) {
  $scope.test = [
    ['a', 'b', 'c'],
    ['d', 'e', 'f']
  ];
});
```

ng-repeat ng-repeat `$parent.$index` .

ngShow ngHide

`ng-show` HTML . . .

`ng-hide` . HTML . .

JSBin

:

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

angular.module('app')
  .controller('ExampleController', ExampleController);

function ExampleController() {

  var vm = this;

  //Binding the username to HTML element
  vm.username = '';

  //A taken username
  vm.taken_username = 'StackOverflow';

}
```

```
<section ng-controller="ExampleController as main">

    <p>Enter Password</p>
    <input ng-model="main.username" type="text">

    <hr>

    <!-- Will always show as long as StackOverflow is not typed in -->
    <!-- The expression is always true when it is not StackOverflow -->
    <div style="color:green;" ng-show="main.username != main.taken_username">
      Your username is free to use!
    </div>

    <!-- Will only show when StackOverflow is typed in -->
    <!-- The expression value becomes falsy -->
    <div style="color:red;" ng-hide="main.username != main.taken_username">
      Your username is taken!
    </div>

    <p>Enter 'StackOverflow' in username field to show ngHide directive.</p>

 </section>
```

ngOptions

ngOptions html . ngOptions ngOptions <select> <option> .

ng-options select .

```
<select ng-model="selectedFruitNgOptions"
        ng-options="curFruit as curFruit.label for curFruit in fruit">
</select>
```

select ng-repeat ng-repeat , forEach . ng-options select .

ng-repeat .

```
<select ng-model="selectedFruit">
    <option ng-repeat="curFruit in fruit" value="{{curFruit}}">
        {{curFruit.label}}
    </option>
</select>
```

.

:

```
$scope.fruit = [
    { label: "Apples", value: 4, id: 2 },
    { label: "Oranges", value: 2, id: 1 },
    { label: "Limes", value: 4, id: 4 },
    { label: "Lemons", value: 5, id: 3 }
];
```

```
<!-- label for value in array -->
<select ng-options="f.label for f in fruit" ng-model="selectedFruit"></select>
```

:

```
 <option value="{ label: "Apples", value: 4, id: 2 }"> Apples </option>
```

:

f.label <option> .

```
<!-- select as label for value in array -->
<select ng-options="f.value as f.label for f in fruit" ng-model="selectedFruit"></select>
```

:

```
 <option value="4"> Apples </option>
```

:

f.value (4) .

```
<!-- label group by group for value in array -->
<select ng-options="f.label group by f.value for f in fruit" ng-
model="selectedFruit"></select>
```

:

```
<option value="{ label: "Apples", value: 4, id: 2 }"> Apples </option>
```

:

value . value .

```
<!-- label disable when disable for value in array -->
<select ng-options="f.label disable when f.value == 4 for f in fruit" ng-
model="selectedFruit"></select>
```

:

```
<option disabled="" value="{ label: "Apples", value: 4, id: 2 }"> Apples </option>
```

:

disable when f.value==4 "" "Limes" ( ). value=4

```
<!-- label group by group for value in array track by trackexpr -->
<select ng-options="f.value as f.label group by f.value for f in fruit track by f.id" ng-
model="selectedFruit"></select>
```

:

```
<option value="4"> Apples </option>
```

:

`trackBy` , Angular `id` .

```
<!-- label for value in array | orderBy:orderexpr track by trackexpr -->
<select ng-options="f.label for f in fruit | orderBy:'id' track by f.id" ng-
model="selectedFruit"></select>
```

:

```
<option disabled="" value="{ label: "Apples", value: 4, id: 2 }"> Apples </option>
```

:

`orderBy` AngularJS (). "Oranges" `id` = 1 1st .

---

ng-options <select> ng-model .

ngModel

ng-model . (: `{{myAge}}` .

```
<input type="text" ng-model="myName">
<p>{{myName}}</p>
```

.

ng-model `$scope.myName` . `controllerAs` :

```
<div ng-controller="myCtrl as mc">
    <input type="text" ng-model="mc.myName">
    <p>{{mc.myName}}</p>
</div>
```

ng-controller ng-model . ng-model `$scope` `this.myName` .

CSS . Angular . Angular .

/ . () true .

```
<style>
    .active { background-color: green; color: white; }
    .inactive { background-color: gray; color: white; }
    .adminUser { font-weight: bold; color: yellow; }
    .regularUser { color: white; }
</style>

<span ng-class="{
    active: user.active,
    inactive: !user.active,
    adminUser: user.level === 1,
    regularUser: user.level === 2
}">John Smith</span>
```

Angular `$scope.user active level` . Angular `<span>` .

ng-if ng-show DOM . Angular 1.1.5 ng-If . ng-if 1.1.5 . Angular `ng-if` . Angular `ng-if` .

`ng-show` `ng-show` `ng-if` . , . `$parent` .

```
angular.module('MyApp', []);

angular.module('MyApp').controller('myController', ['$scope', '$window', function
myController($scope, $window) {
    $scope.currentUser= $window.localStorage.getItem('userName');
}]);
```

```
<div ng-controller="myController">
    <div ng-if="currentUser">
        Hello, {{currentUser}}
    </div>
    <div ng-if="!currentUser">
        <a href="/login">Log In</a>
        <a href="/register">Register</a>
    </div>
</div>
```

DOM **currentUser**

```
<div ng-controller="myController">
    <div ng-if="currentUser">
        Hello, {{currentUser}}
    </div>
    <!-- ng-if: !currentUser -->
</div>
```

---

currentUser **DOM**

```
<div ng-controller="myController">
    <!-- ng-if: currentUser -->
    <div ng-if="!currentUser">
        <a href="/login">Log In</a>
        <a href="/register">Register</a>
    </div>
</div>
```

---

ngIf . true false .

```
<div ng-if="myFunction()">
    <span>Span text</span>
</div>
```

true .

```
$scope.myFunction = function() {
    var result = false;
    // Code to determine the boolean value of result
    return result;
};
```

Angular .

ngMouseenter ngMouseleave

`ng-mouseenter` `ng-mouseleave` DOM CSS .

`ng-mouseenter` (DOM)

HTML

```
<div ng-mouseenter="applyStyle = true" ng-class="{'active': applyStyle}">
```

`div` `applyStyle` `true` `ng-class` `.active` CSS .

`ng-mouseleave` exit (DOM `ng-mouseleave`).

HTML

```
<div ng-mouseenter="applyStyle = true" ng-mouseleaver="applyStyle = false" ng-
class="{'active': applyStyle}">
```

div `.active` .

ngDisabled

.

ng-disabled .

ng-disabled input disabled .

HTML

```
<input type="text" ng-model="vm.name">

<button ng-disabled="vm.name.length===0" ng-click="vm.submitMe">Submit</button>
```

vm.name.length===0 input 0 true , ng-click click vm.name.length===0

ngDblclick

ng-dblclick DOM .

.

HTML

```
<input type="number" ng-model="num = num + 1" ng-init="num=0">

<button ng-dblclick="num++">Double click me</button>
```

input .

ng-app AngularJS .

ng-init .

ng-bind {{}} .

ng-bind-template .

ng-non-bindable .

ng-bind-html HTML HTML ng-bind-html .

ng-change .

ng-checked .

ng-class css .

ng-cloak AngularJS .

ng-click .

ng-controller .

ng-disabled disabled .

`ng-form` .

`ng-href` AngularJS href .

`ng-include` HTML .

`ng-if` DOM .

`ng-switch` .

`ng-model` , select, textarea model .

`ng-readonly` .

`ng-repeat` `ng-repeat` .

`ng-selected` .

`ng-show/ng-hide` .

`ng-src` AngularJS src .

`ng-submit` onsubmit .

`ng-value` .

`ng-required` onsubmit .

`ng-style` HTML CSS .

`ng-pattern` ngModel .

`ng-maxlength` ngModel maxlength .

`ng-minlength` ngModel minlength .

`ng-classeven` () .

`ng-classodd` () .

`ng-cut` .

`ng-copy` .

`ng-paste` .

`ng-options` .

`ng-list` .

`ng-open` ngOpen .

( )

ngClick

`ng-click` click DOM .

`ng-click` DOM .

.

`$event` .

HTML

```
<input ng-click="onClick($event)">Click me</input>
```

```
.controller("ctrl", function($scope) {
    $scope.onClick = function(evt) {
        console.debug("Hello click event: %o ",evt);
    }
})
```

HTML

```
<button ng-click="count = count + 1" ng-init="count=0">
  Increment
</button>
<span>
  count: {{count}}
</span>
```

HTML

```
<button ng-click="count()" ng-init="count=0">
  Increment
</button>
<span>
  count: {{count}}
</span>
```

```
...

$scope.count = function(){
    $scope.count = $scope.count + 1;
}
...
```

`onClick` "Hello click event" .

`ng-required` `required` `require` `input` .

`input` . HTML .

HTML

```
<input type="checkbox" ng-model="someBooleanValue">
<input type="text" ng-model="username" ng-required="someBooleanValue">
```

NG

`ng-model-options` `ng-model-options` `ng-model` ng-model .

.

:

```
<input type="text" ng-model="myValue" ng-model-options="{'debounce': 500}">
```

`myValue` 500 (, `myValue`) 500 `input` .

1. `updateOn` : .

   ```
   ng-model-options="{ updateOn: 'blur'}" // will update on blur
   ```

2. `debounce` : .

   ```
   ng-model-options="{'debounce': 500}" // will update the model after 1/2 second
   ```

3. `allowInvalid` : . `undefined` .

4. `getterSetter` : `ng-model` getter / setter . .

   :

   ```
   <input type="text" ng-model="myFunc" ng-model-options="{'getterSetter': true}">

   $scope.myFunc = function() {return "value";}
   ```

5. `timezone` : `date time` .

   `ngCloak` Angular html ( ) . -

HTML

```
<div ng-cloak>
  <h1>Hello {{ name }}</h1>
</div>
```

`ngCloak` ngCloak .

`ngCloak` .

:

ng-include . .

.

```
  <div ng-include
       src="'/gridview'"
       ng-controller='gridController as gc'>
  </div>
```

`/gridview` URL .

`src` -attribute Angular . . **URL** . .

`/gridview` html `gridController` . :

```
<div class="row">
  <button type="button" class="btn btn-default" ng-click="gc.doSomething()"></button>
</div>
```

ngSrc

src `{{hash}}` . URL `{{hash}}` `{{hash}}` . `ng-src` `src` .

```
<div ng-init="pic = 'pic_angular.jpg'">
    <h1>Angular</h1>
    <img ng-src="{{pic}}">
</div>
```

ngPattern

`ng-pattern` .

:

`<input>` (ng-model) IP `<input>` .

:

```
<input type="text" ng-model="ipAddr" ng-pattern="ipRegex" name="ip" required>
```

:

```
$scope.ipRegex = /\b(?:(?:25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\.){3}(?:25[0-5]|2[0-4][0-
9]|[01]?[0-9][0-9]?)\b/;
```

ngValue

`ng-repeat` ngValue ngRepeat .

```
<script>
   angular.module('valueExample', [])
     .controller('ExampleController', ['$scope', function($scope) {
       $scope.names = ['pizza', 'unicorns', 'robots'];
       $scope.my = { favorite: 'unicorns' };
     }]);
</script>
 <form ng-controller="ExampleController">
   <h2>Which is your favorite?</h2>
     <label ng-repeat="name in names" for="{{name}}">
       {{name}}
       <input type="radio"
              ng-model="my.favorite"
              ng-value="name"
              id="{{name}}"
              name="favorite">
     </label>
   <div>You chose {{my.favorite}}</div>
 </form>
```

plnkr

ngCopy

ngCopy .

```
<p ng-copy="blockCopy($event)">This paragraph cannot be copied</p>
```

```
$scope.blockCopy = function(event) {
    event.preventDefault();
    console.log("Copying won't work");
}
```

ngPaste .

```
<input ng-paste="paste=true" ng-init="paste=false" placeholder='paste here'>
pasted: {{paste}}
```

ngHref

href , href ngHref . ngHref , href html href .

ngHref AngularJS .

1

```
<div ng-init="linkValue = 'http://stackoverflow.com'">
    <p>Go to <a ng-href="{{linkValue}}">{{linkValue}}</a>!</p>
</div>
```

2 href href .

```
<input ng-model="value" />
<a id="link" ng-href="{{value}}">link</a>
```

3

```
<script>
angular.module('angularDoc', [])
.controller('myController', function($scope) {
  // Set some scope value.
  // Here we set bootstrap version.
  $scope.bootstrap_version = '3.3.7';

  // Set the default layout value
  $scope.layout = 'normal';
});
</script>
<!-- Insert it into Angular Code -->
<link rel="stylesheet" ng-href="//maxcdn.bootstrapcdn.com/bootstrap/{{ bootstrap_version
}}/css/bootstrap.min.css">
<link rel="stylesheet" ng-href="layout-{{ layout }}.css">
```

ngList

`ng-list` .

`ng-list` ", " ( ) .

`ng-list="; "` delgiter `ng-list` delimeter .

.

`ng-list` `ng-trim` `ng-trim` true . false `ng-trim` . `ng-trim="false"` `ng-list` .

:

```
angular.module('test', [])
  .controller('ngListExample', ['$scope', function($scope) {
    $scope.list = ['angular', 'is', 'cool!'];
}]);
```

; . .

```
  <body ng-app="test" ng-controller="ngListExample">
    <input ng-model="list" ng-list="; " ng-trim="false">
  </body>
```

: `angular; is; cool!`

: https://riptutorial.com/ko/angularjs/topic/706/--

25:

Examples

angular.equals

`angular.equals` 2 . `angular.equals` true .

angular.equals (value1, value2)

1. `===`
2. `angular.equals`
3. `NaN` .
4. .

.

```
angular.equals(1, 1) // true
angular.equals(1, 2) // false
angular.equals({}, {}) // true, note that {}==={} is false
angular.equals({a: 1}, {a: 1}) // true
angular.equals({a: 1}, {a: 2}) // false
angular.equals(NaN, NaN) // true
```

angular.isString

`angular.isString` `string` true .

angular.isString (value1)

```
angular.isString("hello") // true
angular.isString([1, 2]) // false
angular.isString(42) // false
```

.

```
typeof someValue === "string"
```

angular.isArray

`angular.isArray` `Array` true .

angular.isArray (value)

```
angular.isArray([]) // true
angular.isArray([2, 3]) // true
angular.isArray({}) // false
angular.isArray(17) // false
```

.

```
Array.isArray(someValue)
```

angular.merge

angle.merge .

.

angular.merge (,)

```
angular.merge({}, {}) // {}
angular.merge({name: "king roland"}, {password: "12345"})
// {name: "king roland", password: "12345"}
angular.merge({a: 1}, [4, 5, 6]) // {0: 4, 1: 5, 2: 6, a: 1}
angular.merge({a: 1}, {b: {c: {d: 2}}}) // {"a":1,"b":{"c":{"d":2}}}
```

angular.isDefined angular.isUndefined

`angular.isDefined` .

angular.isDefined (someValue)

.

```
value !== undefined; // will evaluate to true is value is defined
```

```
angular.isDefined(42) // true
angular.isDefined([1, 2]) // true
angular.isDefined(undefined) // false
angular.isDefined(null) // true
```

`angular.isUndefined` (`angular.isDefined`)

angular.isUndefined (someValue)

.

```
value === undefined; // will evaluate to true is value is undefined
```

```
!angular.isDefined(value)
```

```
angular.isUndefined(42) // false
angular.isUndefined(undefined) // true
```

angular.isDate

`angular.isDate` Date true .

angular.isDate (value)

```
angular.isDate("lone star") // false
angular.isDate(new Date()) // true
```

angular.isNumber

`angular.isNumber` Number true + Infinity, -Infinity NaN .

angular.isNumber (value)

.

```
"23" == 23 // true
```

```
angular.isNumber("23") // false
angular.isNumber(23) // true
angular.isNumber(NaN) // true
angular.isNumber(Infinity) // true
```

.

```
"23" == 23 // true
```

angular.isFunction

`angular.isFunction` true .

.

angular.isFunction (fn)

```
var onClick = function(e) {return e};
angular.isFunction(onClick); // true

var someArray = ["pizza", "the", "hut"];
angular.isFunction(someArray ); // false
```

angular.toJson

`angular.toJson` JSON .

`JSON.stringify` , `$$` (`$$`)

```
angular.toJson(object)
```

JSON .

.toString .

:

```
angular.toJson({name: "barf", occupation: "mog", $$somebizzareproperty: 42})
// "{"name":"barf","occupation":"mog"}"
angular.toJson(42)
// "42"
angular.toJson([1, "2", 3, "4"])
// "[1,"2",3,"4"]"
var fn = function(value) {return value}
angular.toJson(fn)
// undefined, functions have no representation in JSON
```

angular.fromJson

angular.fromJson JSON deserialize Object Array .

angular.fromJson (string | object)

.

:

```
angular.fromJson("{\"yogurt\": \"strawberries\"}")
// Object {yogurt: "strawberries"}
angular.fromJson('{jam: "raspberries"}')
// will throw an exception as the string is not a valid JSON
angular.fromJson(this)
// Window {external: Object, chrome: Object, _gaq: Y, angular: Object, ng339: 3…}
angular.fromJson([1, 2])
// [1, 2]
typeof angular.fromJson(new Date())
// "object"
```

angular.noop

angular.noop angular.noop .

angular.noop ()

angular.noop .

:

```
$scope.onSomeChange = function(model, callback) {
    updateTheModel(model);
    if (angular.isFunction(callback)) {
        callback();
    } else {
        throw new Error("error: callback is not a function!");
    }
};
```

```
$scope.onSomeChange(42, function() {console.log("hello callback")});
// will update the model and print 'hello callback'
$scope.onSomeChange(42, angular.noop);
// will update the model
```

:

```
angular.noop() // undefined
angular.isFunction(angular.noop) // true
```

angular.isObject

`angular.isObject` true , Array true `typeof null object` `null` false `object` .

angular.isObject ()

.

:

```
angular.isObject({name: "skroob", job: "president"})
// true
angular.isObject(null)
// false
angular.isObject([null])
// true
angular.isObject(new Date())
// true
angular.isObject(undefined)
// false
```

angular.isElement

`angular.isElement` DOM jQuery true .

angular.isElement (elem)

.

:

```
angular.isElement(document.querySelector("body"))
// true
angular.isElement(document.querySelector("#some_id"))
// false if "some_id" is not using as an id inside the selected DOM
angular.isElement("<div></div>")
// false
```

angular.copy

`angular.copy` , .

angular.copy ()

:

:

```
let obj = {name: "vespa", occupation: "princess"};
let cpy = angular.copy(obj);
cpy.name = "yogurt"
// obj = {name: "vespa", occupation: "princess"}
// cpy = {name: "yogurt", occupation: "princess"}
```

:

```
var w = [a, [b, [c, [d]]]];
var q = angular.copy(w);
// q = [a, [b, [c, [d]]]]
```

`.equals` `angular.equals(w, q)` true . `w === q` false .

.

`angular.identity` .

angular.identity ()

. .

:

```
angular.identity(42) // 42
```

```
var mutate = function(fn, num) {
    return angular.isFunction(fn) ? fn(num) : angular.identity(num)
}

mutate(function(value) {return value-7}, 42) // 35
mutate(null, 42) // 42
mutate("mount. rushmore", 42) // 42
```

angular.forEach

`angular.forEach` iterator . / . .

JS `Array.prototype.forEach` . ( ) `null` `undefined` .

angular.forEach (, (,) {// });

:

```
angular.forEach({"a": 12, "b": 34}, (value, key) => console.log("key: " + key + ", value: " +
```

```
value))
// key: a, value: 12
// key: b, value: 34
angular.forEach([2, 4, 6, 8, 10], (value, key) => console.log(key))
// will print the array indices: 1, 2, 3, 4, 5
angular.forEach([2, 4, 6, 8, 10], (value, key) => console.log(value))
// will print the array values: 2, 4, 6, 7, 10
angular.forEach(undefined, (value, key) => console.log("key: " + key + ", value: " + value))
// undefined
```

: https://riptutorial.com/ko/angularjs/topic/3032/--

26:

Examples

HTML /

show html .

```
<!DOCTYPE html>
<html ng-app="myDemoApp">
  <head>
    <script src="https://code.angularjs.org/1.5.8/angular.min.js"></script>
    <script>

      function HideShowController() {
        var vm = this;
        vm.show=false;
        vm.toggle= function() {
          vm.show=!vm.show;
        }
      }

      angular.module("myDemoApp", [/* module dependencies go here */])
        .controller("hideShowController", [HideShowController]);
    </script>
  </head>
  <body ng-cloak>
    <div ng-controller="hideShowController as vm">
      <a style="cursor: pointer;" ng-show="vm.show" ng-click="vm.toggle()">Show Me!</a>
      <a style="cursor: pointer;" ng-hide="vm.show" ng-click="vm.toggle()">Hide Me!</a>
    </div>
  </body>
</html>
```

:

1. `ng-app="myDemoApp"` ngApp DOM "myDemoApp" angular.module .
2. `<script src="[//angular include]">` j .
3. `HideShowController` `toggle` .
4. `angular.module(...)` .
5. `.controller(...)` `.controller(...)` Angular Controller `.controller(...)` .
6. `ng-controller` Model-View-Controller .
7. `ng-show` true HTML .
8. `ng-hide` true HTML .
9. `ng-click` .

: https://riptutorial.com/ko/angularjs/topic/7644/--

27:

- $ scope. $ watch (watchExpression, callback, [deep compare])
- $ scope. $ digest ()
- $. $ ([exp])

Examples

Angular . DOM js .

Angular " " . DOM .

, `ng-model keyup` eventListener .

```
<input ng-model="variable" />
```

`keyup` .

.

```
<span>{{variable}}</span>
```

( ).

1. html
   - `ng-model keyup`
   - `expression` .
2. .
   - `keyup` .
   - .
   -

$ digest $ watch

.

- **$ digest** (DOM =>).
- **$ watch** (binding variable => DOM).

***:** .*

```
<input id="input"/>
<span id="span"></span>
```

:

```
var $watches = [];
function $digest(){
    $watches.forEach(function($w){
        var val = $w.val();
        if($w.prevVal !== val){
            $w.callback(val, $w.prevVal);
            $w.prevVal = val;
        }
    })
}
function $watch(val, callback){
    $watches.push({val:val, callback:callback, prevVal: val() })
}
```

DOM ( ).

```
var realVar;
//this is usually done by ng-model directive
input1.addEventListener('keyup',function(e){
    realVar=e.target.value;
    $digest()
}, true);

//this is usually done with {{expressions}} or ng-bind directive
$watch(function(){return realVar},function(val){
    span1.innerHTML = val;
});
```

, .

. https://jsfiddle.net/azofxd4j/

$

HTML .

.

```
<span ng-repeat="number in [1,2,3,4,5]">{{number}}</span>
```

`ng-repeat` 5 `number` 5 . .

. .

DOM `$digest` `$watch` .

DOM .

```
<div>
    <input ng-model="person.name" />
    <span ng-repeat="number in [1,2,3,4,5]">{{number}} {{person.name}}</span>
</div>
```

, ng-repeat ( ) . .

, $digest $digest .

- - $digest div , 5 $digest .

.

```
function $scope(){
    this.$children = [];
    this.$watches = [];
}

$scope.prototype.$digest = function(){
    this.$watches.forEach(function($w){
        var val = $w.val();
        if($w.prevVal !== val){
            $w.callback(val, $w.prevVal);
          $w.prevVal = val;
        }
    });
    this.$children.forEach(function(c){
        c.$digest();
    });
}

$scope.prototype.$watch = function(val, callback){
    this.$watches.push({val:val, callback:callback, prevVal: val() })
}
```

: .

: https://riptutorial.com/ko/angularjs/topic/3156/--

28:

AngularJS . Jasmine . ngMock .

Examples

:

```
angular.module('myModule', []).filter('multiplier', function() {
  return function(number, multiplier) {
    if (!angular.isNumber(number)) {
      throw new Error(number + " is not a number!");
    }
    if (!multiplier) {
      multiplier = 2;
    }
    return number * multiplier;
  }
});
```

:

```
describe('multiplierFilter', function() {
  var filter;

  beforeEach(function() {
    module('myModule');
    inject(function(multiplierFilter) {
      filter = multiplierFilter;
    });
  });

  it('multiply by 2 by default', function() {
    expect(filter(2)).toBe(4);
    expect(filter(3)).toBe(6);
  });

  it('allow to specify custom multiplier', function() {
    expect(filter(2, 4)).toBe(8);
  });

  it('throws error on invalid input', function() {
    expect(function() {
      filter(null);
    }).toThrow();
  });
});
```

!

: `inject` + . Angular `Filter` .

(1.5+)

:

```
angular.module('myModule', []).component('myComponent', {
  bindings: {
    myValue: '<'
  },
  controller: function(MyService) {
    this.service = MyService;
    this.componentMethod = function() {
      return 2;
    };
  }
});
```

:

```
describe('myComponent', function() {
  var component;

  var MyServiceFake = jasmine.createSpyObj(['serviceMethod']);

  beforeEach(function() {
    module('myModule');
    inject(function($componentController) {
      // 1st - component name, 2nd - controller injections, 3rd - bindings
      component = $componentController('myComponent', {
        MyService: MyServiceFake
      }, {
        myValue: 3
      });
    });
  });

  /** Here you test the injector. Useless. */

  it('injects the binding', function() {
    expect(component.myValue).toBe(3);
  });

  it('has some cool behavior', function() {
    expect(component.componentMethod()).toBe(2);
  });
});
```

!

:

```
angular.module('myModule', [])
  .controller('myController', function($scope) {
    $scope.num = 2;
    $scope.doSomething = function() {
      $scope.num += 2;
    }
  });
```

:

```
describe('myController', function() {
  var $scope;
  beforeEach(function() {
    module('myModule');
    inject(function($controller, $rootScope) {
      $scope = $rootScope.$new();
      $controller('myController', {
        '$scope': $scope
      })
    });
  });
  it('should increment `num` by 2', function() {
    expect($scope.num).toEqual(2);
    $scope.doSomething();
    expect($scope.num).toEqual(4);
  });
});
```

!

```
angular.module('myModule', [])
  .service('myService', function() {
    this.doSomething = function(someNumber) {
      return someNumber + 2;
    }
  });
```

```
describe('myService', function() {
  var myService;
  beforeEach(function() {
    module('myModule');
    inject(function(_myService_) {
      myService = _myService_;
    });
  });
  it('should increment `num` by 2', function() {
    var result = myService.doSomething(4);
    expect(result).toEqual(6);
  });
});
```

!

```
angular.module('myModule', [])
  .directive('myDirective', function() {
    return {
      template: '<div>{{greeting}} {{name}}!</div>',
      scope: {
        name: '=',
        greeting: '@'
      }
    };
  });
```

```
describe('myDirective', function() {
  var element, scope;
  beforeEach(function() {
```

```
    module('myModule');
    inject(function($compile, $rootScope) {
      scope = $rootScope.$new();
      element = angular.element("<my-directive name='name' greeting='Hello'></my-directive>");
      $compile(element)(scope);
      /* PLEASE NEVER USE scope.$digest(). scope.$apply use a protection to avoid to run a
digest loop when there is already one, so, use scope.$apply() instead. */
      scope.$apply();
    })
  });

  it('has the text attribute injected', function() {
    expect(element.html()).toContain('Hello');
  });

  it('should have proper message after scope change', function() {
    scope.name = 'John';
    scope.$apply();
    expect(element.html()).toContain("John");
    scope.name = 'Alice';
    expect(element.html()).toContain("John");
    scope.$apply();
    expect(element.html()).toContain("Alice");
  });
});
```

!

: https://riptutorial.com/ko/angularjs/topic/1689/-

29:

Angular . . . .

Examples

ngStorage

index.html ngStorage .

`ngStorage` src .

```
<head>
    <title>Angular JS ngStorage</title>
    <script src =
"http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
    <script src="https://rawgithub.com/gsklee/ngStorage/master/ngStorage.js"></script>
</head>
```

`ngStorage` 2 , `$localStorage` `$sessionStorage` . ngStorage .

`ng-app="myApp"` `ngStorage` .

```
var app = angular.module('myApp', ['ngStorage']);
        app.controller('controllerOne', function($localStorage,$sessionStorage) {
        // an object to share
        var sampleObject = {
            name: 'angularjs',
            value: 1
        };
       $localStorage.valueToShare = sampleObject;
       $sessionStorage.valueToShare = sampleObject;
    })
.controller('controllerTwo', function($localStorage,$sessionStorage) {
    console.log('localStorage: '+ $localStorage +'sessionStorage: '+$sessionStorage);
})
```

`$localStorage` `$sessionStorage` .

`HTML5` `localStorage` `sessionStorage` . `HTML5` `localStorage` serialize deserialize.

:

```
var myObj = {
    firstname: "Nic",
    lastname: "Raboy",
    website: "https://www.google.com"
}
//if you wanted to save into localStorage, serialize it
window.localStorage.set("saved", JSON.stringify(myObj));

//unserialize to get object
```

```
var myObj = JSON.parse(window.localStorage.get("saved"));
```

controllers set get service .

:

```
app.service('setGetData', function() {
  var data = '';
    getData: function() { return data; },
    setData: function(requestData) { data = requestData; }
});
```

:

```
app.controller('myCtrl1', ['setGetData',function(setGetData) {

  // To set the data from the one controller
  var data = 'Hello World !!';
  setGetData.setData(data);

}]);

app.controller('myCtrl2', ['setGetData',function(setGetData) {

  // To get the data from the another controller
  var res = setGetData.getData();
  console.log(res); // Hello World !!

}]);
```

myCtrl1 setting myCtrl2 getting . .

: https://riptutorial.com/ko/angularjs/topic/1923/-

30:

, Angular . .

Examples

```
<p ng-bind="message"></p>
```

" .

```
$scope.message = "Hello World";
```

HTML . "Hello World" innerHTML . Angular . Watchers Digest Cycle DOM .

Scope . . **$$ WatchersArray** . $ digest WatchersArray .

Angular WatchersArray .

1. {{expression}} - ( ) ng-model .
2. $ scope. $ watch ('expression / function') - watch angle .

$ watch .

1. .
2. . DOM .
3. . & . $ watch .

```
Scope.prototype.$watch = function(watchFn, listenerFn) {
   var watcher = {
       watchFn: watchFn,
       listenerFn: listenerFn || function() { },
       last: initWatchVal  // initWatchVal is typically undefined
   };
   this.$$watchers.push(watcher); // pushing the Watcher Object to Watchers
};
```

Angular Digest Cycle . $ digest () $ scope. $ digest () . ng-click $ scope . AngularJS $ digest () $ digest .ng-click / (: ng-model, $ timeout) $. $ digest .

```
Scope.prototype.$digest = function() {
      var dirty;
      do {
          dirty = this.$$digestOnce();
      } while (dirty);
}
Scope.prototype.$$digestOnce = function() {
   var self = this;
   var newValue, oldValue, dirty;
```

```
  _.forEach(this.$$watchers, function(watcher) {
         newValue = watcher.watchFn(self);
         oldValue = watcher.last;   // It just remembers the last value for dirty checking
         if (newValue !== oldValue) { //Dirty checking of References
  // For Deep checking the object , code of Value
  // based checking of Object should be implemented here
            watcher.last = newValue;
            watcher.listenerFn(newValue,
                 (oldValue === initWatchVal ? newValue : oldValue),
                  self);
         dirty = true;
         }
    });
  return dirty;
};
```

JavaScript **setTimeout ()** Angular . $ apply () $. DOM $ apply () . $ Angular . . $ apply $ digest () . $ apply () .

```
Scope.prototype.$apply = function(expr) {
       try {
         return this.$eval(expr); //Evaluating code in the context of Scope
       } finally {
         this.$digest();
       }
};
```

: https://riptutorial.com/ko/angularjs/topic/2342/---

31:

Examples

```
<div ng-app="demoApp" ng-controller="mainController as ctrl">
    {{$id}}
    <ul>
        <li ng-repeat="item in ctrl.items">
            {{$id}}<br/>
            {{item.text}}
        </li>
    </ul>
    {{$id}}
    <pre>
       {{ctrl.items | json : 2}}
    </pre>
</div>


angular.module('demoApp', [])
.controller('mainController', MainController);

function MainController() {
    var vm = this;
    vm.items = [{
        id: 0,
        text: 'first'
    },
    {
        id: 1,
        text: 'second'
    },
    {
        id: 2,
        text: 'third'
    }];
}
```

. `$scope.$id` $.

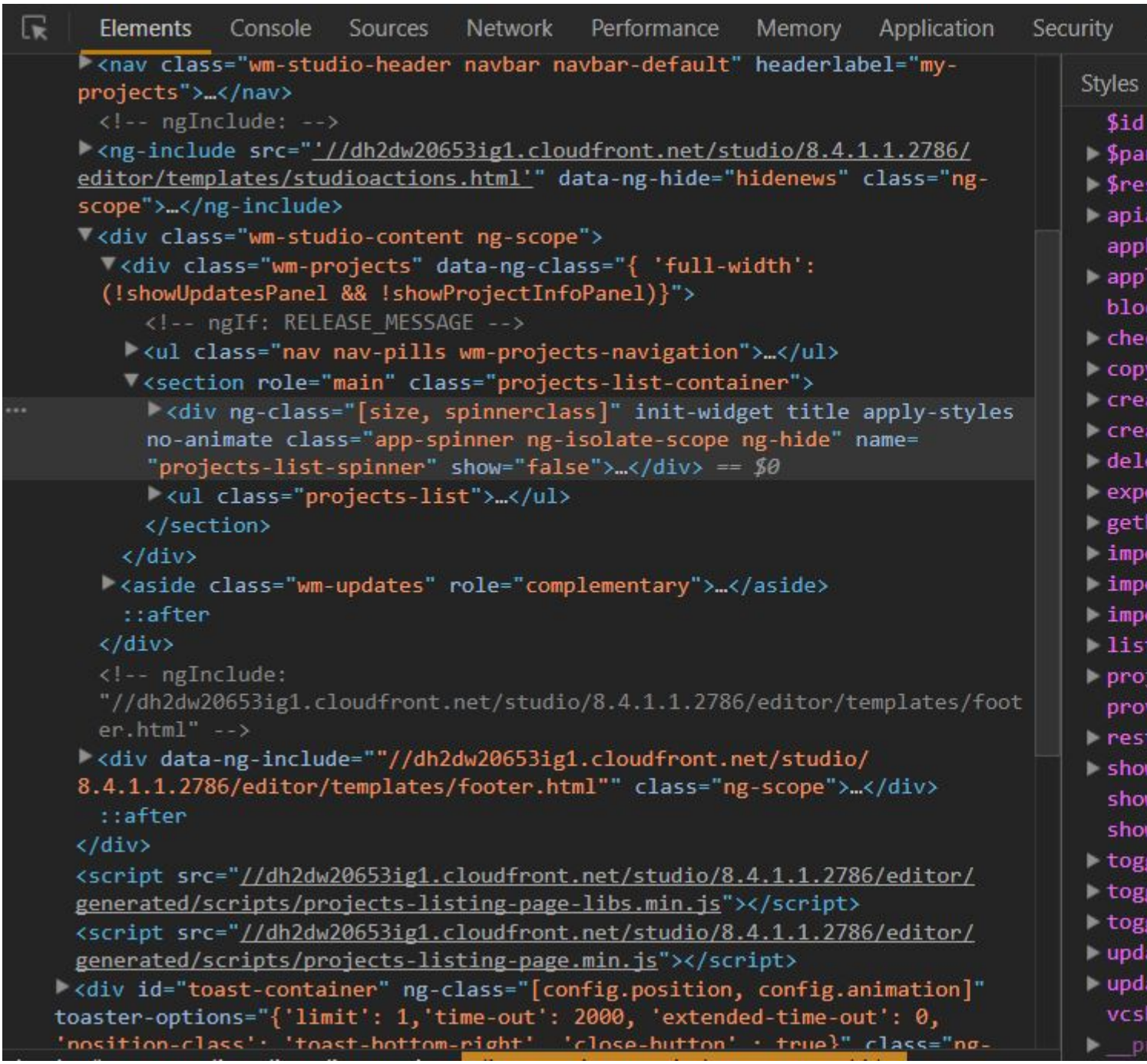
ul-tag ($ id = 2) `ng-repeat` .

. `json` . `\n` .

ng-inspect

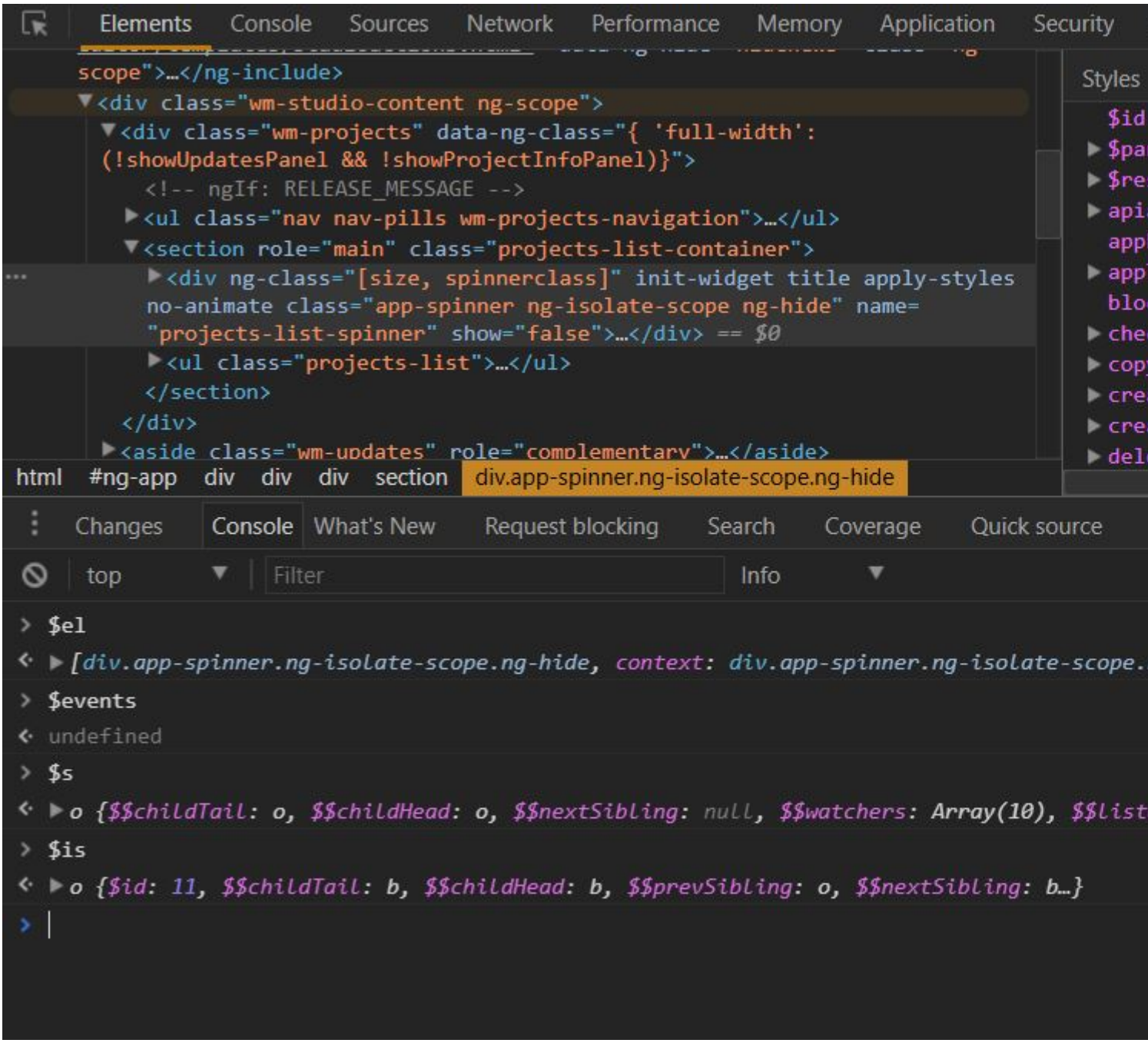
ng-inspect AngularJS Chrome .

ng-inspect .



scope/isolateScope scope/isolateScope .

```
$s      -- scope of the selected node
$is     -- isolateScope of the selected node
$el     -- jQuery element reference of the selected node (requiers jQuery)
$events -- events present on the selected node (requires jQuery)
```

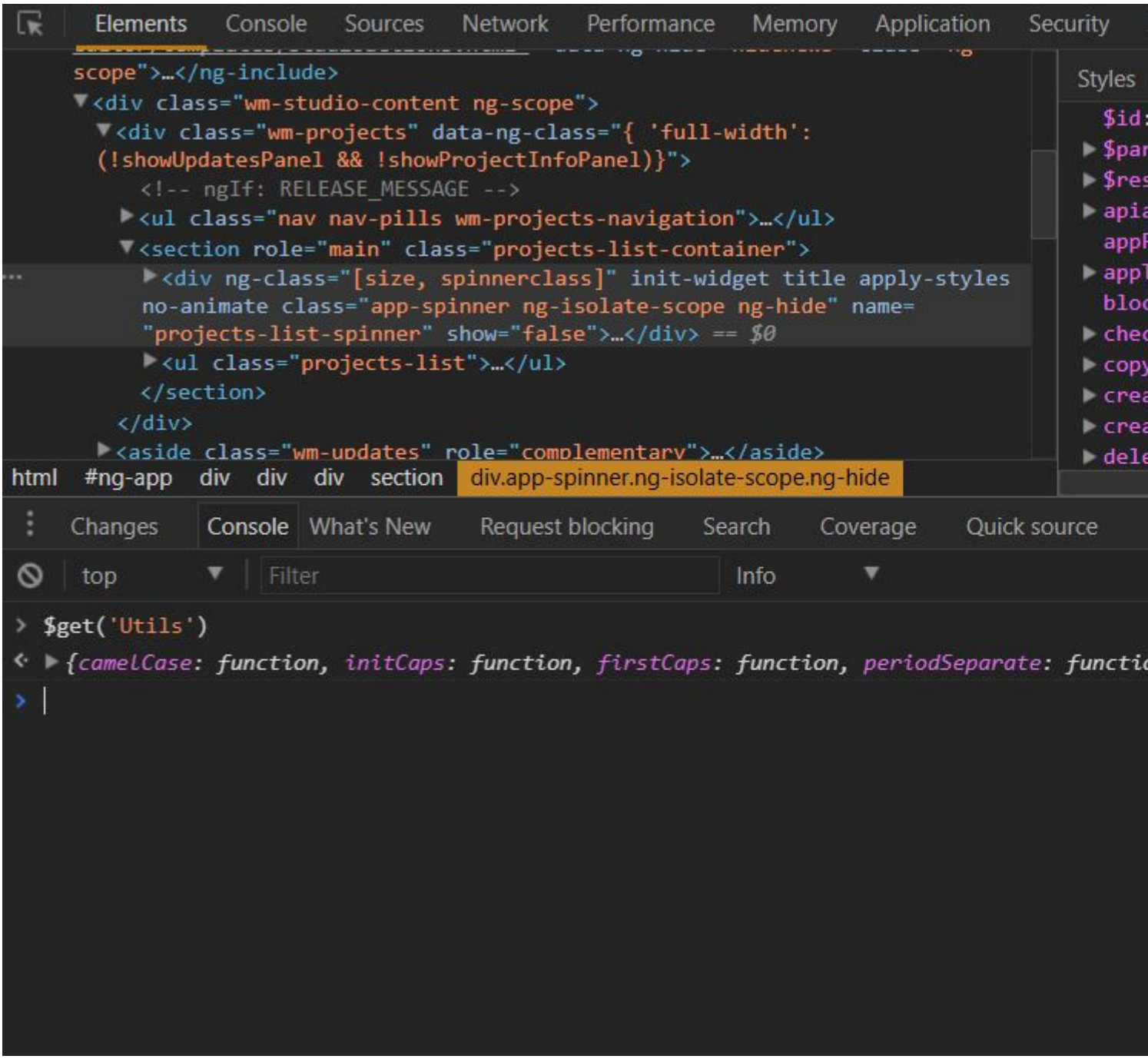

Elements
Console
Sources
Network
Performance
Memory
Application
Security
scope">…</ng-include>

<div class="wm-projects" data-ng-class="{ 'full-width':
(!showUpdatesPanel && !showProjectInfoPanel)}">
<!-- ngIf: RELEASE_MESSAGE -->
<ul class="nav nav-pills wm-projects-navigation">…
<section role="main" class="projects-list-container">
<div ng-class="[size, spinnerclass]" init-widget title apply-styles
no-animate class="app-spinner ng-isolate-scope ng-hide" name=
"projects-list-spinner" show="false">… == $0
<ul class="projects-list">…
</section>

<aside class="wm-updates" role="complementary">…</aside>
Styles
$id
$pa
$re
api
app
app
blo
che
cop
cre
cre
del
html
#ng-app
div
div
div
section
div.app-spinner.ng-isolate-scope.ng-hide
Changes
Console
What's New
Request blocking
Search
Coverage
Quick source
top
Filter
Info
$el
[div.app-spinner.ng-isolate-scope.ng-hide, context: div.app-spinner.ng-isolate-scope.
$events
undefined
$s
o {$$childTail: o, $$childHead: o, $$nextSibling: null, $$watchers: Array(10), $$list
$is
o {$id: 11, $$childTail: b, $$childHead: b, $$prevSibling: o, $$nextSibling: b…}

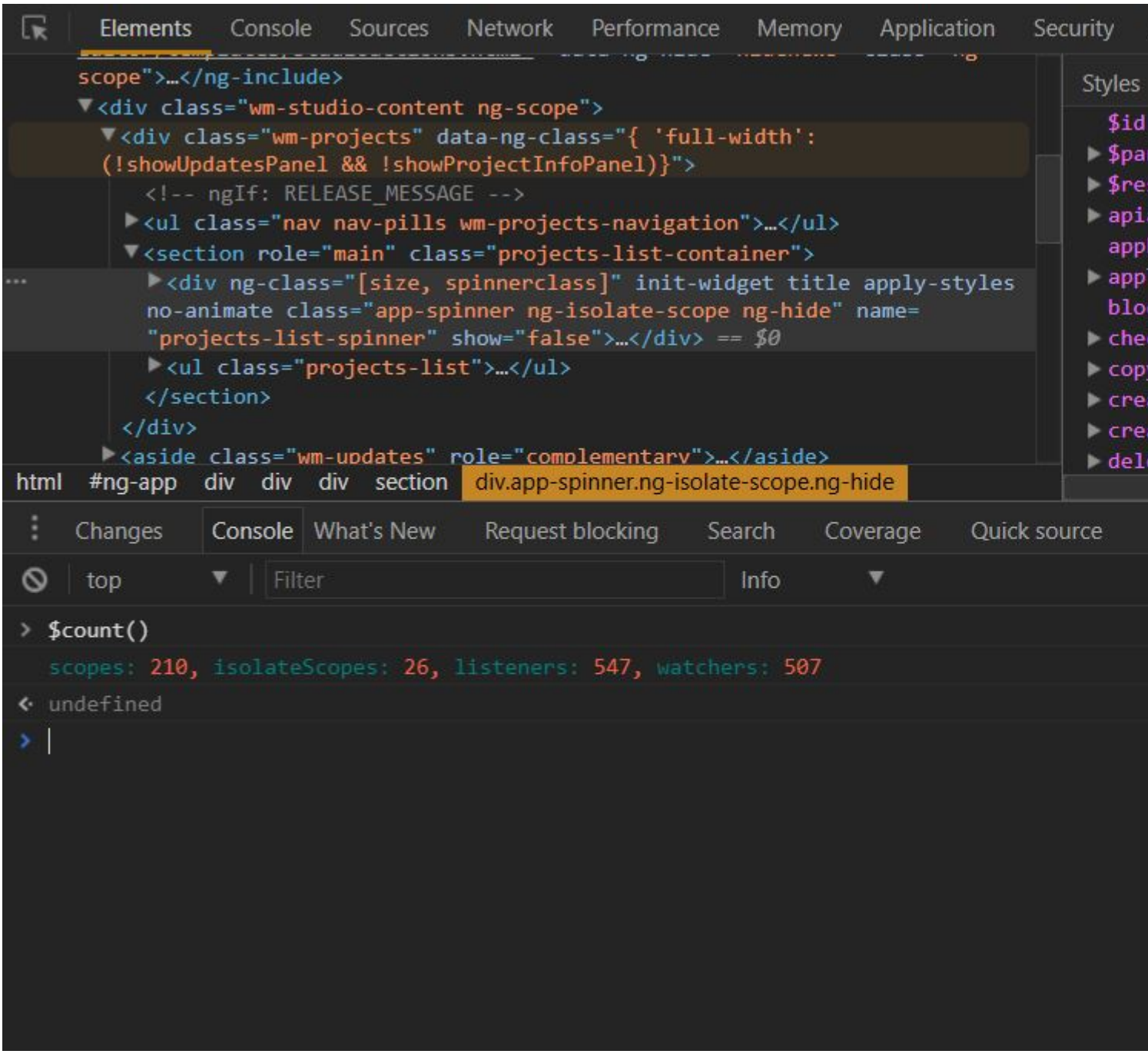
/ .

`$get()` / .



scope, isolateScopes, watchers listener .

`$count()` scope, isolateScopes, watchers listeners .



: debugInfo .

ng-inspect .

, . :

```
angular.element(myDomElement).scope();
e.g.
angular.element(document.getElementById('yourElementId')).scope()  //accessing by ID
```

: -

```
 angular.element('[ng-controller=ctrl]').scope()
```

DOM ('jm') '' DOM $ 0 .

```
angular.element($0).scope();
```

: https://riptutorial.com/ko/angularjs/topic/4761/

32:

Examples

. , . (addZ) . 'Z' .

example.js

```
angular.module('main', [])
    .filter('addZ', function() {
            return function(value) {
                return value + "Z";
            }
     })
    .controller('MyController', ['$scope', function($scope) {
        $scope.sample = "hello";
    }])
```

example.html

. { variable | filter} . sample addZ .

```
<div ng-controller="MyController">
   <span>{{sample | addZ}}</span>
</div>
```

```
helloZ
```

,

$filter :

```
angular
  .module('filters', [])
  .filter('percentage', function($filter) {
    return function (input) {
      return $filter('number')(input * 100) + ' %';
    };
  });
```

. .

```
angular
  .module('app', [])
  .controller('MyController', function($scope) {
    $scope.example = 0.098152;
  })
  .filter('percentage', function($filter) {
```

```
    return function (input, decimals) {
      return $filter('number')(input * 100, decimals) + ' %';
    };
  });
```

percentage .

```
<span ng-controller="MyController">{{ example | percentage: 2 }}</span>
=> "9.81 %"
```

... .

```
<span ng-controller="MyController">{{ example | percentage }}</span>
=> "9.8152 %"
```

: https://riptutorial.com/ko/angularjs/topic/2552/-

33:

Examples

, , , . Angular .

:

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

[] app , [] .

:

```
angular.module('app', [
    'app.auth',
    'app.dashboard'
]);
```

:

```
angular
    .module('app');
```

, , , .

.
.
AngularJs .
.

```
var app = angular.module('myApp', []);
// Empty array is list of modules myApp is depends on.
// if there are any required dependancies,
// then you can add in module, Like ['ngAnimate']

app.controller('myController', function() {

  // write your business logic here
});
```

1. : - .

```
angular.module('myModule', []).
config(function(injectables) {
  // here you can only inject providers in to config blocks.
});
```

2. Run Blocks : - .

```
angular.module('myModule', []).
run(function(injectables) {
  // here you can only inject instances in to config blocks.
});
```

: https://riptutorial.com/ko/angularjs/topic/844/

34:

`ngRepeat` . . `$index` .

- `<element ng-repeat="expression"></element>`
- `<div ng-repeat="(key, value) in myObj">...</div>`
- `<div ng-repeat="variable in expression">...</div>`

`$index`	(0 .. 1)
`$first`	*boolean* true.
`$middle`	*boolean* true.
`$last`	*boolean* true.
`$even`	*boolean* iterator position `$index` true false.
`$odd`	*boolean* iterator position `$index` true, false.

AngularJS ng-repeat ng-repeat HTML .

Examples

```
<div ng-repeat="(key, value) in myObj"> ... </div>
```

```
<div ng-repeat="n in [42, 42, 43, 43]">
  {{n}}
</div>
```

`ngRepeat` $ watchCollection . `ngRepeat` DOM .

- DOM .
- DOM .
- DOM .

- `track by` .
- `track by` .
- `track by` : `[ngRepeat:dupes]`

```
$scope.numbers = ['1','1','2','3','4'];

<ul>
  <li ng-repeat="n in numbers track by $index">
    {{n}}
  </li>
</ul>
```

ng-repeat-start + ng-repeat-end

AngularJS 1.2 `ng-repeat ng-repeat-start ng-repeat-end .`

```
// table items
$scope.tableItems = [
    {
        row1: 'Item 1: Row 1',
        row2: 'Item 1: Row 2'
    },
    {
        row1: 'Item 2: Row 1',
        row2: 'Item 2: Row 2'
    }
];

// template
<table>
    <th>
        <td>Items</td>
    </th>
    <tr ng-repeat-start="item in tableItems">
        <td ng-bind="item.row1"></td>
    </tr>
    <tr ng-repeat-end>
        <td ng-bind="item.row2"></td>
    </tr>
</table>
```

:

1 : 1
1 : 2
2 : 1
2 : 2

: https://riptutorial.com/ko/angularjs/topic/8118/

35:

ng-view . {info} ngRoute angular.js angular-route.js . $ routeProvider "when" . , x templateUrl W .

Examples

`ng-view $route` . Index.html "/" home.html `ng-view` Index.html .

```
angular.module('ngApp', ['ngRoute'])

.config(function($routeProvider){
  $routeProvider.when("/",
    {
      templateUrl: "home.html",
      controller: "homeCtrl"
    }
  );
});

angular.module('ngApp').controller('homeCtrl',['$scope', function($scope) {
  $scope.welcome= "Welcome to stackoverflow!";
}]);

//Index.html
<body ng-app="ngApp">
    <div ng-view></div>
</body>

//Home Template URL or home.html
<div><h2>{{welcome}}</h2></div>
```

1. .

```
  var Registration=angular.module("myApp",["ngRoute"]);
```

2. "ngRoute" $ routeProvider .

```
    Registration.config(function($routeProvider) {

});
```

3. , "/ add" "/ add" regi.htm

```
 Registration.config(function($routeProvider) {
    $routeProvider
    .when("/add", {
        templateUrl : "regi.htm"
    })
});
```

: https://riptutorial.com/ko/angularjs/topic/8833/

36:

AngularJS . .

	. false, true . {@, =, <, &}.
:	. .
scope : true	. .
: {@}	DOM . .
: {=}	. .
: {<}	DOM . . .
: {&}	.
:	DOM . `tElement` ( ) `tAttr` ( ) `tAttr` . . `post-link` `pre-link` `post-link` `pre` `post` .
link : /	link . scope ( ), iElement (DOM), iAttrs (DOM), controller ( ), transcludeFn . DOM , DOM . . .
	. . .
	. .
restrict :	DOM . `E` - (`<demo-directive></demo-directive>`), `A` - (`<div demo-directive></div>`), `C` (: `demoDirective`) `<div class="demo-directive"></div>`), `M` - (`<!-- directive: demo-directive -->`). `restrict` . `restrict: "AC"` - `restrict: "AC"` *Attribute Class* . `"EA"` ( ).
require : 'demoDirective'	demoDirective . .
require : '? demoDirective'	demoDirective fn null .
require : '^ demoDirective'	demoDirective . .
require : '^^ demoDirective'	demoDirective . .
require : '? ^ demoDirective'	demoDirective fn null .

require : '? ^^ demoDirective'	demoDirective fn null .

Examples

angularjs . angularjs html html html .

.js

```
// Create the App module if you haven't created it yet
var demoApp= angular.module("demoApp", []);

// If you already have the app module created, comment the above line and create a reference
of the app module
var demoApp = angular.module("demoApp");


// Create a directive using the below syntax
// Directives are used to extend the capabilities of html element
// You can either create it as an Element/Attribute/class
// We are creating a directive named demoDirective. Notice it is in CamelCase when we are
defining the directive just like ngModel
// This directive will be activated as soon as any this element is encountered in html

demoApp.directive('demoDirective', function () {

  // This returns a directive definition object
  // A directive definition object is a simple JavaScript object used for configuring the
directive’s behaviour,template..etc
  return {
    // restrict: 'AE', signifies that directive is Element/Attribute directive,
    // "E" is for element, "A" is for attribute, "C" is for class, and "M" is for comment.
    // Attributes are going to be the main ones as far as adding behaviors that get used the
most.
    // If you don't specify the restrict property it will default to "A"
    restrict :'AE',

    // The values of scope property decides how the actual scope is created and used inside a
directive. These values can be either “false”, “true” or “{}”. This creates an isolate scope
for the directive.
    // '@' binding is for passing strings. These strings support {{}} expressions for
interpolated values.
    // '=' binding is for two-way model binding. The model in parent scope is linked to the
model in the directive's isolated scope.
    // '&' binding is for passing a method into your directive's scope so that it can be
called within your directive.
    // The method is pre-bound to the directive's parent scope, and supports arguments.
    scope: {
      name: "@",  // Always use small casing here even if it's a mix of 2-3 words
    },

    // template replaces the complete element with its text.
    template: "<div>Hello {{name}}!</div>",

    // compile is called during application initialization. AngularJS calls it once when html
page is loaded.
    compile: function(element, attributes) {
```

```
      element.css("border", "1px solid #cccccc");

      // linkFunction is linked with each element with scope to get the element specific data.
      var linkFunction = function($scope, element, attributes) {
        element.html("Name: <b>"+$scope.name +"</b>");
        element.css("background-color", "#ff00ff");
      };
      return linkFunction;
    }
  };
});
```

App .

```
<html>

   <head>
      <title>Angular JS Directives</title>
   </head>
   <body>
   <script src =
"http://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js"></script>
   <script src="directive.js"></script>
    <div ng-app = "demoApp">
       <!-- Notice we are using Spinal Casing here -->
       <demo-directive name="World"></demo-directive>

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

```
demoApp.directive('demoDirective', function () {
  var directiveDefinitionObject = {
    multiElement:
    priority:
    terminal:
    scope: {},
    bindToController: {},
    controller:
    controllerAs:
    require:
    restrict:
    templateNamespace:
    template:
    templateUrl:
    transclude:
    compile:
    link: function(){}
  };
  return directiveDefinitionObject;
});
```

1. **multiElement** - true DOM .
2. **priority** - DOM . .
3. **terminal** - true .
4. **scope** - .
5. **bind to controller** - .

6. **controller** -
7. **require** - .
8. **controllerAs** - .
9. **restrict** - , ,
10. **templateNameSpace** - (html, svg math). html .
11. **template** - , transclude true html
12. **templateUrl** - **templateUrl** url.
13. **transclude** - . .
14. **compile** - DOM
15. **link** - . DOM DOM . .

superman-directive.js

```
angular.module('myApp', [])
  .directive('superman', function() {
    return {
      // restricts how the directive can be used
      restrict: 'E',
      templateUrl: 'superman-template.html',
      controller: function() {
        this.message = "I'm superman!"
      },
      controllerAs: 'supermanCtrl',
      // Executed after Angular's initialization. Use commonly
      // for adding event handlers and DOM manipulation
      link: function(scope, element, attributes) {
        element.on('click', function() {
          alert('I am superman!')
        });
      }
    }
  });
```

superman-template.html

```
<h2>{{supermanCtrl.message}}</h2>
```

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Document</title>
  <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.0/angular.js"></script>
  <script src="superman-directive.js"><script/>
</head>
<body>
<div ng-app="myApp">
  <superman></superman>
</div>
</body>
</html>
```

`restrict` `link` AngularJS

resuable

AngularJS AngularJS HTML . HTML , , . DOM , HTML , . ng-model, ng-hide, ng-if .

. . angularj angle.js / . , / . .

, resuableComponents reusableModuleApp.js .

reusableModuleApp.js :

```
(function(){

 var reusableModuleApp = angular.module('resuableModuleApp', ['ngSanitize']);

 //Remember whatever dependencies you have in here should be injected in the app module where
it is intended to be used or it's scripts should be included in your main app
                              //We will be injecting ng-sanitize

 resubaleModuleApp.directive('toolbar', toolbar)

 toolbar.$inject=['$sce'];

 function toolbar($sce){

     return{
     restrict :'AE',
        //Defining below isolate scope actually provides window for the directive to take data
from app that will be using this.
        scope : {
                value1: '=',
                value2: '=',
                },

         }
     template : '<ul>  <li><a ng-click="Add()" href="">{{value1}}</a></li>  <li><a ng-
click="Edit()" href="#">{{value2}}</a></li> </ul> ',
         link : function(scope, element, attrs){

               //Handle's Add function
               scope.Add = function(){


               };

               //Handle's Edit function
               scope.Edit = function(){

               };
     }
  }

});
```

mainApp.js :

```
(function(){
   var mainApp = angular.module('mainApp', ['reusableModuleApp']); //Inject resuableModuleApp
in your application where you want to use toolbar component

   mainApp.controller('mainAppController', function($scope){
      $scope.value1 = "Add";
      $scope.value2 = "Edit";

   });

 });
```

index.html :

```
 <!doctype html>
 <html ng-app="mainApp">
 <head>
  <title> Demo Making a reusable component
 <head>
  <body ng-controller="mainAppController">

     <!-- We are providing data to toolbar directive using mainApp'controller -->
     <toolbar value1="value1" value2="value2"></toolbar>

    <!-- We need to add the dependent js files on both apps here -->
     <script src="js/angular.js"></script>
     <script src="js/angular-sanitize.js"></script>

     <!-- your mainApp.js should be added afterwards --->
      <script src="mainApp.js"></script>

     <!-- Add your reusable component js files here -->
      <script src="resuableComponents/reusableModuleApp.js"></script>

  </body>
 </html>
```

. angularJs . reusableModuleApp.js reusableModuleApp , , DDO .

.

scope .

. scope - .

-
- Angular .

.

```
var ProgressBar = function() {
  return {
    scope: { // This is how we define an isolated scope
      current: '=', // Create a REQUIRED bidirectional binding by using the 'current'
attribute
      full: '=?maxValue' // Create an OPTIONAL (Note the '?'): bidirectional binding using
```

```
'max-value' attribute to the `full` property in our directive isolated scope
    }
    template: '<div class="progress-back">' +
              '  <div class="progress-bar"' +
              '       ng-style="{width: getProgress()}">' +
              '  </div>' +
              '</div>',
    link: function(scope, el, attrs) {
      if (scope.full === undefined) {
        scope.full = 100;
      }
      scope.getProgress = function() {
        return (scope.current / scope.size * 100) + '%';
      }
    }
  }
}

ProgressBar.$inject = [];
angular.module('app').directive('progressBar', ProgressBar);
```

:

:

```
angular.module('app').controller('myCtrl', function($scope) {
    $scope.currentProgressValue = 39;
    $scope.maxProgressBarValue = 50;
});
```

:

```
<div ng-controller="myCtrl">
    <progress-bar current="currentProgressValue"></progress-bar>
    <progress-bar current="currentProgressValue" max-value="maxProgressBarValue"></progress-
bar>
</div>
```

. "" .

userBox.js

```
angular.module('simpleDirective', []).directive('userBox', function() {
  return {
    scope: {
        username: '=username',
        reputation: '=reputation'
    },
    templateUrl: '/path/to/app/directives/user-box.html'
  };
});
```

Controller.js

```
var myApp = angular.module('myApp', ['simpleDirective']);
```

```
myApp.controller('Controller', function($scope) {

    $scope.user = "John Doe";
    $scope.rep = 1250;

    $scope.user2 = "Andrew";
    $scope.rep2 = 2850;

});
```

myPage.js

```
<html lang="en" ng-app="myApp">
  <head>
    <script src="/path/to/app/angular.min.js"></script>
    <script src="/path/to/app/js/controllers/Controller.js"></script>
    <script src="/path/to/app/js/directives/userBox.js"></script>
  </head>

  <body>

    <div ng-controller="Controller">
        <user-box username="user" reputation="rep"></user-box>
        <user-box username="user2" reputation="rep2"></user-box>
    </div>

  </body>
</html>
```

user-box.html

```
<div>{{username}}</div>
<div>{{reputation}} reputation</div>
```

.

```
John Doe
1250 reputation
Andrew
2850 reputation
```

. () .

$ inject .

.config . myDirective, myDirectiveDirective . ([ ]).

templateUrl .

```
angular.module('myApp').config(function($provide){
        $provide.decorator('myDirectiveDirective', function($delegate){
             var directive = $delegate[0]; // this is the actual delegated, your directive
             directive.templateUrl = 'newTemplate.html'; // you change the directive template
        return $delegate;
```

```
    })
});
```

onClick . .

```
angular.module('myApp').config(function ($provide) {
        $provide.decorator('myDirectiveTwoDirective', function ($delegate) {
            var directive = $delegate[0];
            var link = directive.link; // this is directive link phase
            directive.compile = function () { // change the compile of that directive
                return function (scope, element, attrs) {
                    link.apply(this, arguments); // apply this at the link phase
                    element.on('click', function(){ // when add an onclick that log hello when
the directive is clicked.
                            console.log('hello!');
                    });
                };
            };
            return $delegate;
        });

    });
```

.

Angular js .

Adir Bdir Adir Bdir $ scope .

```
angular.module('myApp',[]).directive('Adir', function () {
        return {
            restrict: 'AE',
            controller: ['$scope', function ($scope) {
                    $scope.logFn = function (val) {
                            console.log(val);
                        }
                  }]
            }
    })
```

require : '^ Adir' (, ^).

```
.directive('Bdir', function () {
        return {
            restrict: 'AE',
            require: '^Adir', // Bdir require Adir
            link: function (scope, elem, attr, Parent) {
            // Parent is Adir but can be an array of required directives.
                elem.on('click', function ($event) {
                    Parent.logFn("Hello!"); // will log "Hello! at parent dir scope
                    scope.$apply(); // apply to parent scope.
                });
            }
        }
    }]);
```

.

```
<div a-dir><span b-dir></span></div>
<a-dir><b-dir></b-dir> </a-dir>
```

HTML .

: https://riptutorial.com/ko/angularjs/topic/965/--

37:

: . .

`.controller('MyController', function($scope, Profile, EVENT))` .

- `$scope` .
- `Profile` .
- `EVENT` .

Examples

```
angular
  .module('MyApp', [])
  .constant('VERSION', 1.0);
```

, , , , :

```
angular
  .module('MyApp')
  .controller('FooterController', function(VERSION) {
    this.version = VERSION;
  });
```

```
<footer ng-controller="FooterController as Footer">{{ Footer.version }}</footer>
```

/ ... !

- . . . .

  ```
  angular
    .module('MyApp')
    .constant('EVENTS', {
      LOGIN_VALIDATE_FORM: 'login::click-validate',
      LOGIN_FORGOT_PASSWORD: 'login::click-forgot',
      LOGIN_ERROR: 'login::notify-error',
      ...
    });
  ```

  ```
  angular
    .module('MyApp')
    .controller('LoginController', function($scope, EVENT) {
      $scope.$on(EVENT.LOGIN_VALIDATE_FORM, function() {
        ...
      });
    })
  ```

... !

- . .

```
angular
  .module('MyApp')
  .constant('CONFIG', {
    BASE_URL: {
      APP: 'http://localhost:3000',
      API: 'http://localhost:3001'
    },
    STORAGE: 'S3',
    ...
  });
```

- . . .

```
angular
  .module('MyApp')
  .constant('HARDCODED', {
    KEY: 'KEY',
    RELATION: 'has_many',
    VAT: 19.6
  });
```

...

```
$scope.settings = {
  username: Profile.username,
  relation: 'has_many',
  vat: 19.6
}
```

```
$scope.settings = {
  username: Profile.username,
  relation: HARDCODED.RELATION,
  vat: HARDCODED.VAT
}
```

: https://riptutorial.com/ko/angularjs/topic/3967/

38: -

Examples

Angular `XHR` . .

. . Grunt Gulp .

`$templateCache` . .

`html2js` `html2js` . .

.

```
module.exports = function (grunt) {
 //set up the location of your views here
 var viewLocation = ['app/views/**.html'];

 grunt.initConfig({
        pkg: require('./package.json'),
            //section that sets up the settings for concatenation of the html files into one
file
            html2js: {
                        options: {
                            base: '',
                            module: 'app.templates', //new module name
                            singleModule: true,
                            useStrict: true,
                            htmlmin: {
                                collapseBooleanAttributes: true,
                                collapseWhitespace: true
                            }
                        },
                        main: {
                            src: viewLocation,
                            dest: 'build/app.templates.js'
                        }
                    },
            //this section is watching for changes in view files, and if there was a change,
it will regenerate the production file. This task can be handy during development.
            watch: {
                views:{
                    files: viewLocation,
                    tasks: ['buildHTML']
                },
            }
        });

        //to automatically generate one view file
        grunt.loadNpmTasks('grunt-html2js');

        //to watch for changes and if the file has been changed, regenerate the file
        grunt.loadNpmTasks('grunt-contrib-watch');

        //just a task with friendly name to reference in watch
        grunt.registerTask('buildHTML', ['html2js']);
```

```
};
```

. index.html

```
<script src="build/app.templates.js"></script>
```

.

```
angular.module('app', ['app.templates'])
```

ui-router , .

```
    .state('home', {
        url: '/home',
        views: {
            "@": {
                controller: 'homeController',
                //this will be picked up from $templateCache
                templateUrl: 'app/views/home.html'
            },
        }

    })
```

JS . JS .

. minificaiton. (.)

minificaiton `$scope myService` . Angular dependency injection .

```
.controller('myController', function($scope, myService){
})
```

Angular . .

```
.controller('myController', ['$scope','myService', function($scope, myService){
}])
```

- .
- `ng-annotate` , minification .
- `uglify` .

module.exports = function (grunt) {// . var scriptLocation = ['app / scripts / *. js'];

```
 grunt.initConfig({
        pkg: require('./package.json'),
            //add necessary annotations for safe minification
         ngAnnotate: {
            angular: {
                src: ['staging/concatenated.js'],
                dest: 'staging/anotated.js'
```

```
            }
        },
        //combines all the files into one file
        concat: {
                js: {
                    src: scriptLocation,
                    dest: 'staging/concatenated.js'
                }
            },
        //final uglifying
        uglify: {
            options: {
                report: 'min',
                mangle: false,
                sourceMap:true
            },
            my_target: {
                files: {
                    'build/app.min.js': ['staging/anotated.js']
                }
            }
        },

        //this section is watching for changes in JS files, and if there was a change, it will
regenerate the production file. You can choose not to do it, but I like to keep concatenated
version up to date
        watch: {
            scripts: {
                files: scriptLocation,
                tasks: ['buildJS']
            }
        }

});

    //module to make files less readable
    grunt.loadNpmTasks('grunt-contrib-uglify');

    //mdule to concatenate files together
    grunt.loadNpmTasks('grunt-contrib-concat');

    //module to make angularJS files ready for minification
    grunt.loadNpmTasks('grunt-ng-annotate');

    //to watch for changes and if the file has been changed, regenerate the file
    grunt.loadNpmTasks('grunt-contrib-watch');

    //task that sequentially executes all steps to prepare JS file for production
    //concatinate all JS files
    //annotate JS file (prepare for minification
    //uglify file
     grunt.registerTask('buildJS', ['concat:js', 'ngAnnotate', 'uglify']);
};
```

- : https://riptutorial.com/ko/angularjs/topic/4434/----

39:

Examples

```
angular.module("app")
  .service("counterService", function(){

    var service = {
        number: 0
    };

    return service;
   });
```

```
    angular.module("app")

        // Custom services are injected just like Angular's built-in services
        .controller("step1Controller", ['counterService', '$scope', function(counterService,
$scope) {
            counterService.number++;
            // bind to object (by reference), not to value, for automatic sync
            $scope.counter = counterService;
        })
```

.

```
// editable
<input ng-model="counter.number" />
```

```
// read-only
<span ng-bind="counter.number"></span>
```

, . .

Angularjs .

($ injector) lazy loaded ( ) .

, .

angular.factory

( ).

```
.factory('dataService', function() {
    var dataObject = {};
    var service = {
        // define the getter method
        get data() {
```

```
            return dataObject;
        },
        // define the setter method
        set data(value) {
            dataObject = value || {};
        }
    };
    // return the "service" object to expose the getter/setter
    return service;
})
```

.

```
.controller('controllerOne', function(dataService) {
    // create a local reference to the dataService
    this.dataService = dataService;
    // create an object to store
    var someObject = {
        name: 'SomeObject',
        value: 1
    };
    // store the object
    this.dataService.data = someObject;
})

.controller('controllerTwo', function(dataService) {
    // create a local reference to the dataService
    this.dataService = dataService;
    // this will automatically update with any changes to the shared data object
    this.objectFromControllerOne = this.dataService.data;
})
```

$ sce - .

$ sce ("Strict Contextual Escaping") .

HTML `$sce` .

$ sce : `.

```
.filter('sanitizer', ['$sce', [function($sce) {
     return function(content) {
          return $sce.trustAsResourceUrl(content);
      };
}]);
```

```
<div ng-repeat="item in items">

    // Sanitize external sources
    <ifrmae ng-src="{{item.youtube_url | sanitizer}}">

    // Sanitaize and render HTML
    <div ng-bind-html="{{item.raw_html_content| sanitizer}}"></div>

</div>
```

''

```
angular.module("app")
  .service("counterService", ["fooService", "barService", function(anotherService,
barService){

    var service = {
        number: 0,
        foo: function () {
            return fooService.bazMethod(); // Use of 'fooService'
        },
        bar: function () {
            return barService.bazMethod(); // Use of 'barService'
        }
    };

    return service;
   }]);
```

angular.module API .

```
angular.module('myApp.services', []).factory('githubService', function() {
   var serviceInstance = {};
   // Our first service
   return serviceInstance;
});
```

.

```
// Creating the factory through using the
// bracket notation
angular.module('myApp.services', [])
.factory('githubService', [function($http) {
}]);
```

.

```
angular.module('myApp.services', [])
    .factory('githubService', function($http) {
        var githubUrl = 'https://api.github.com';
        var runUserRequest = function(username, path) {
        // Return the promise from the $http service
        // that calls the Github API using JSONP
        return $http({
            method: 'JSONP',
            url: githubUrl + '/users/' +
            username + '/' +
            path + '?callback=JSON_CALLBACK'
        });
    }
// Return the service object with a single function
// events
return {
    events: function(username) {
    return runUserRequest(username, 'events');
    }
```

```
};
```

1)

`new` `constructor` . AngularJs `new` .

.

1. `new` .

`$http` .

```
function StudentDetailsService($http) {
  this.getStudentDetails = function getStudentDetails() {
    return $http.get('/details');
  };
}

angular.module('myapp').service('StudentDetailsService', StudentDetailsService);
```

.

```
function StudentController(StudentDetailsService) {
  StudentDetailsService.getStudentDetails().then(function (response) {
      // handle response
    });
}
angular.module('app').controller('StudentController', StudentController);
```

?

`.service()` . `getStudentDetails()` API . API `.service()` .

2)

`.factory()` `.services()` , `.factory()` " " `.service()` . `.service()` .

`.factory()` .

.

1.
2. () ( )

`.factory()` .

Revealing .

```
function StudentDetailsService($http) {
  function getStudentDetails() {
    return $http.get('/details');
  }
  return {
```

```
    getStudentDetails: getStudentDetails
  };
}

angular.module('myapp').factory('StudentDetailsService', StudentDetailsService);
```

```
function StudentController(StudentDetailsService) {
  StudentDetailsService.getStudentDetails().then(function (response) {
      // handle response
    });
}
angular.module('app').controller('StudentController', StudentController);
```

(closure) ?

.

.

```
function closureFunction(name) {
  function innerClosureFunction(age) { // innerClosureFunction() is the inner function, a
closure
    // Here you can manipulate 'age' AND 'name' variables both
  };
};
```

"" name .

.factory() .

```
function StudentDetailsService($http) {
  function closureFunction(name) {
  function innerClosureFunction(age) {
    // Here you can manipulate 'age' AND 'name' variables
    };
  };
};

angular.module('myapp').factory('StudentDetailsService', StudentDetailsService);
```

```
function StudentController(StudentDetailsService) {
  var myClosure = StudentDetailsService('Student Name'); // This now HAS the
innerClosureFunction()
  var callMyClosure = myClosure(24); // This calls the innerClosureFunction()
};

angular.module('app').controller('StudentController', StudentController);
```

/

.service() new . .factory() new .

.

```
function StudentDetailsService($http) {
  function Student() {
    this.age = function () {
        return 'This is my age';
    };
  }
  Student.prototype.address = function () {
        return 'This is my address';
  };
  return Student;
};

angular.module('myapp').factory('StudentDetailsService', StudentDetailsService);
```

```
function StudentController(StudentDetailsService) {
  var newStudent = new StudentDetailsService();

  //Now the instance has been created. Its properties can be accessed.

 newStudent.age();
 newStudent.address();

};

angular.module('app').controller('StudentController', StudentController);
```

: https://riptutorial.com/ko/angularjs/topic/1486/

40:

Examples

?

() , , .

?

. ( ) .

:

1. Chrome

   . , CSS , , CPU , , , .

   . JS JS . ...

2. FireBug (Firefox)

3. Dynatrace (IE)

4. Batarang (Chrome)

   , , . . , , .

5. (Chrome)

   UI .

6. (@Words)

```
(function() {
    var root = angular.element(document.getElementsByTagName('body')),
        watchers = [],
        f = function(element) {
        angular.forEach(['$scope', '$isolateScope'], function(scopeProperty) {
            if(element.data() && element.data().hasOwnProperty(scopeProperty)) {
                angular.forEach(element.data()[scopeProperty].$$watchers, function(watcher) {
                watchers.push(watcher);
                });
            }
        });

        angular.forEach(element.children(), function(childElement) {
            f(angular.element(childElement));
        });
    };

    f(root);
```

```
    // Remove duplicate watchers
    var watchersWithoutDuplicates = [];
    angular.forEach(watchers, function(item) {
        if(watchersWithoutDuplicates.indexOf(item) < 0) {
            watchersWithoutDuplicates.push(item);
        }
    });
    console.log(watchersWithoutDuplicates.length);
})();
```

7. / .

. https://www.webpagetest.org/

(IE Chrome) . , , .

:

. . . .

:)

: https://riptutorial.com/ko/angularjs/topic/7033/--

41:

Examples

angularjs

:

.

```
 'use strict';

/**
 * @ngdoc factory
 * @name app.factory:storageService
 * @description This function will communicate with HTML5 sessionStorage via Factory Service.
 */

app.factory('storageService', ['$rootScope', function($rootScope) {

    return {
        get: function(key) {
            return sessionStorage.getItem(key);
        },
        save: function(key, data) {
            sessionStorage.setItem(key, data);
        }
    };
}]);
```

:

storageService .

```
app.controller('myCtrl',['storageService',function(storageService) {

  // Save session data to storageService
  storageService.save('key', 'value');

  // Get saved session data from storageService
  var sessionData = storageService.get('key');

});
```

: https://riptutorial.com/ko/angularjs/topic/8201/-

42:

Examples

node.js npm .
GitHub @ https://github.com/mikkoviitala/angular-grunt-run-local .

.

grunt (javascript task runner), npm ( ) bower ( ) .

. **( )** .

- package.json (npm)
- bower.json (bower)
- gruntfile.js ( )

.

---

package.json

, **matchdep** , . **grunt-express** . **grunt-open** URL / .

"" .

```
{
  "name": "app",
  "version": "1.0.0",
  "dependencies": {},
  "devDependencies": {
    "grunt": "~0.4.1",
    "matchdep": "~0.1.2",
    "grunt-express": "~1.0.0-beta2",
    "grunt-open": "~0.2.1"
  },
  "scripts": {
    "postinstall": "bower install"
  }
}
```

bower.json

Bower ( ) .

```
{
  "name": "app",
  "version": "1.0.0",
  "dependencies": {
    "angular": "~1.3.x"
  },
  "devDependencies": {}
}
```

gruntfile.js

gruntfile.js http : // localhost : 9000 / " " .

```
'use strict';

// see http://rhumaric.com/2013/07/renewing-the-grunt-livereload-magic/

module.exports = function(grunt) {
  require('matchdep').filterDev('grunt-*').forEach(grunt.loadNpmTasks);

  grunt.initConfig({
    express: {
      all: {
        options: {
          port: 9000,
          hostname: 'localhost',
          bases: [__dirname]
        }
      }
    },

    open: {
      all: {
        path: 'http://localhost:<%= express.all.options.port%>'
      }
    }
  });

  grunt.registerTask('app', [
    'express',
    'open',
    'express-keepalive'
  ]);
};
```

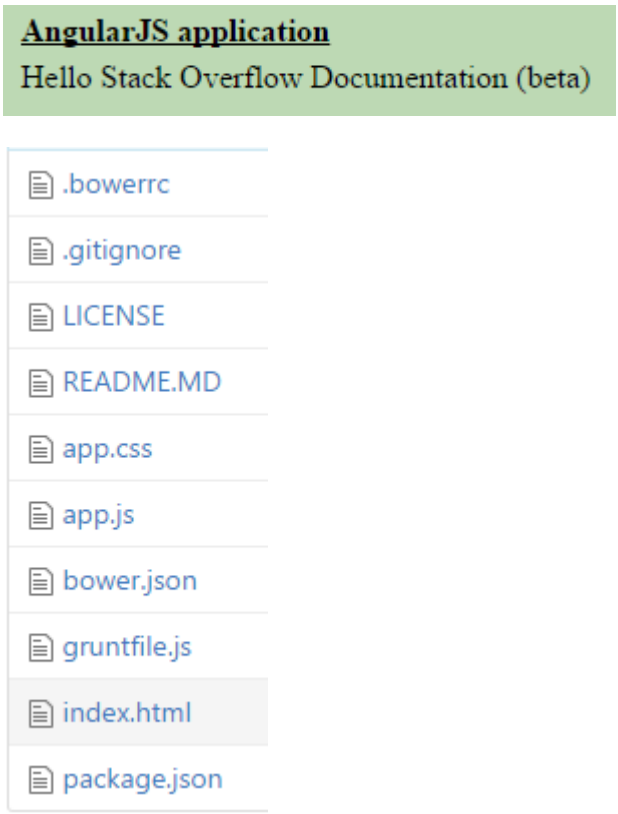
( ). / .

```
npm install -g grunt-cli bower
npm install
```

```
grunt app
```

. .
GitHub .

. `index.html` , `app.js` `app.css` `app.css` . , . !



: https://riptutorial.com/ko/angularjs/topic/6077/-

43:

Examples

Angular .

(interrogative) jQuery . Angular .

ng-model **novalidate** .

, .

```
<form name="form" novalidate>
  <label name="email"> Your email </label>
  <input type="email" name="email" ng-model="email" />
</form>
```

Angular **ng-model** . . .

```
<input type="number" name="postalcode" ng-model="zipcode" />
```

ng-submit . . . .

```
<form name="signup_form" ng-submit="submitFunc()" novalidate>
  <label name="email"> Your email </label>
  <input type="email" name="email" ng-model="email" />
  <button type="submit">Signup</button>
</form>
```

Angular .

Angular **ng-pristine** , **ng-dirty** , **ng-valid** **ng-invalid** . CSS ***/*** ***/*** .

.

`$touched`	.
`$untouched`	.
`$pristine`	.
`$dirty`	.
`$valid`	.
`$invalid`	.

true false .

.

```
<form name="myForm" novalidate>
    <input name="myName" ng-model="myName" required>
    <span ng-show="myForm.myName.$touched && myForm.myName.$invalid">This name is
invalid</span>
</form>
```

ng-show .

CSS

Angular CSS .

ng-touched	.
ng-untouched	.
ng-pristine	.
ng-dirty	.
ng-valid	.
ng-invalid	.

.

```
input.ng-invalid {
  background-color: crimson;
}
input.ng-valid {
  background-color: green;
}
```

ngMessages

ngMessages .

---

ngMessages ng-class . ngMessages repetitive .

ngMessages .

Html :

```
<form name="ngMessagesDemo">
  <input name="firstname" type="text" ng-model="firstname" required>
  <div ng-messages="ngMessagesDemo.firstname.$error">
    <div ng-message="required">Firstname is required.</div>
  </div>
</form>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/angular.js/1.3.16/angular.min.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/angular.js/1.3.16/angular-
messages.min.js"></script>
```

JS :

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

app.controller('mainCtrl', function ($scope) {
    $scope.firstname = "Rohit";
});
```

. ngModelController $validators $validators :

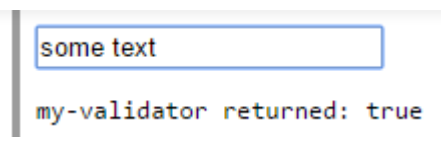
```
angular.module('app', [])
  .directive('myValidator', function() {
    return {
      // element must have ng-model attribute
      // or $validators does not work
      require: 'ngModel',
      link: function(scope, elm, attrs, ctrl) {
        ctrl.$validators.myValidator = function(modelValue, viewValue) {
            // validate viewValue with your custom logic
            var valid = (viewValue && viewValue.length > 0) || false;
            return valid;
        };
      }
    };
```

ngModel .

```
<form name="form">
  <input type="text"
         ng-model="model"
         name="model"
         my-validator>
  <pre ng-bind="'my-validator returned: ' + form.model.$valid"></pre>
</form>
```

---

my-validator . ng-model . UI .



. HTML5 . ng-form .

```
<form name="myForm" noValidate>
  <!-- nested form can be referenced via 'myForm.myNestedForm' -->
  <ng-form name="myNestedForm" noValidate>
    <input name="myInput1" ng-minlength="1" ng-model="input1" required />
    <input name="myInput2" ng-minlength="1" ng-model="input2" required />
  </ng-form>

  <!-- show errors for the nested subform here -->
  <div ng-messages="myForm.myNestedForm.$error">
    <!-- note that this will show if either input does not meet the minimum -->
    <div ng-message="minlength">Length is not at least 1</div>
  </div>
</form>

<!-- status of the form -->
<p>Has any field on my form been edited? {{myForm.$dirty}}</p>
<p>Is my nested form valid? {{myForm.myNestedForm.$valid}}</p>
<p>Is myInput1 valid? {{myForm.myNestedForm.myInput1.$valid}}</p>
```

. myInput1 $dirty $dirty . myNestedForm myForm $dirty .

($ http).

.

input ng-model $asyncValidators .

:

, . .

```
ngModel.$asyncValidators.usernameValidate = function (name) {
     if (name) {
          return AuthenticationService.checkIfNameExists(name); // returns a promise
     } else {
          return $q.reject("This username is already taken!"); // rejected promise
     }
};
```

ng-model .

: https://riptutorial.com/ko/angularjs/topic/3979/-

44:

- myApp.controller ('MyController', function ($ scope) {...}); //
- myApp.controller ('MyController', ['$ scope', function ($ scope) {...}]); // minification
- function MyController () {}

  MyController. $ inject = ['$ scope'];

  myApp.controller ('MyController', MyController); // $ inject
- $ injector.get ('injectable'); // /

`run` .

`config` .

.

Examples

Angular app - Angular `Controller` `$scope` :

```
angular.module('myModule', [])
.controller('myController', ['$scope', function($scope) {
    $scope.members = ['Alice', 'Bob'];
    ...
}])
```

`controller` `$scope` . . .

Angular . .

DI - Dependency Injection .

" " . , . . ( ) . Angular .

- **.**

.

. `$injector` .

```
myModule.controller('myController', ['$injector', function($injector) {
    var myService = $injector.get('myService');
}]);
```

: . .

$ inject

`$inject` .

```
var MyController = function($scope) {
  // ...
}
MyController.$inject = ['$scope'];
myModule.controller('MyController', MyController);
```

AngularJS JavaScript

AngularJS `injector()` AngularJS . `angular.element()` `angular.element()` jqLite `injector()` .

```
var service;
var serviceName = 'myService';

var ngAppElement = angular.element(document.querySelector('[ng-app],[data-ng-app]') ||
document);
var injector = ngAppElement.injector();

if(injector && injector.has(serviceNameToInject)) {
    service = injector.get(serviceNameToInject);
}
```

AngularJS (`ngAppElement`) jqLite . `angular.element()` `ng-app` `data-ng-app` DOM , `document` . `ngAppElement` injector (`ngAppElement.injector()`). (`injector.has()`) `service` `injector.get()`) `service` .

: https://riptutorial.com/ko/angularjs/topic/1582/-

45:

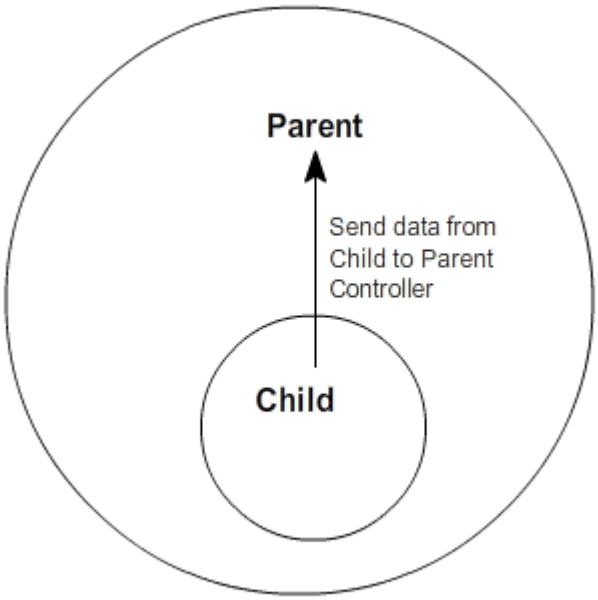
	Object {name : "eventName", targetScope : Scope, defaultPrevented : false, currentScope : ChildScope}
args	

Examples

$ scope. $ emit

`$scope.$emit` `$scope . $emit .`

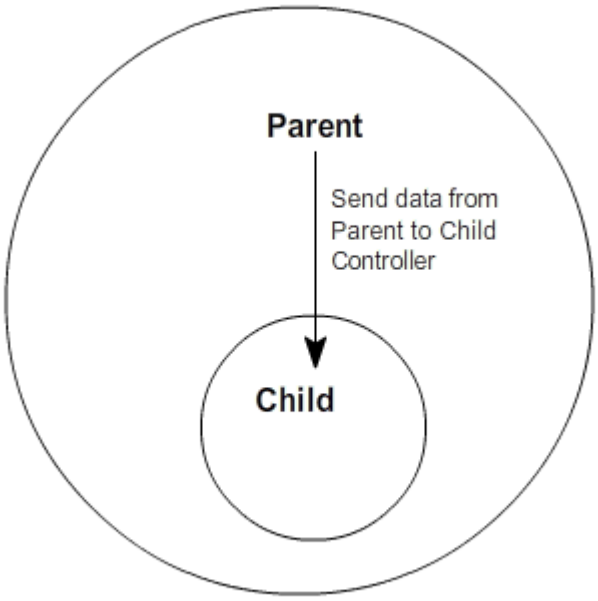
:



$ scope. $ broadcast

`$scope.$broadcast` `$scope . $scope.$on` `$scope.$on`

:



:

```
// firing an event upwards
$scope.$emit('myCustomEvent', 'Data to send');

// firing an event downwards
$scope.$broadcast('myCustomEvent', {
  someProp: 'some value'
});

// listen for the event in the relevant $scope
$scope.$on('myCustomEvent', function (event, data) {
  console.log(data); // 'Data from the event'
});
```

`$scope` `$rootScope` .

AngularJS

. .

```
// firing an event upwards
$rootScope.$emit('myEvent', 'Data to send');

// listening an event
var listenerEventHandler = $rootScope.$on('myEvent', function(){
    //handle code
});

$scope.$on('$destroy', function() {
```

```
    listenerEventHandler();
});
```

.

`$emit` `$broadcast` . .

.

---

1. Parent-Child . (`$scope`)

---

2. . (`$rootScope`)

: `ProductListController` `CartController` . `CartController` / . `$rootScope` .

`$scope.$emit` `$scope.$emit`

```
<html>
  <head>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.4/angular.js"></script>
    <script>
        var app = angular.module('app', []);

        app.controller("FirstController", function ($scope) {
            $scope.$on('eventName', function (event, args) {
                $scope.message = args.message;
            });
        });

        app.controller("SecondController", function ($scope) {
            $scope.handleClick = function (msg) {
                $scope.$emit('eventName', {message: msg});
            };
        });

    </script>
  </head>
  <body ng-app="app">
    <div ng-controller="FirstController" style="border:2px ;padding:5px;">
        <h1>Parent Controller</h1>
        <p>Emit Message : {{message}}</p>
        <br />
        <div ng-controller="SecondController" style="border:2px;padding:5px;">
            <h1>Child Controller</h1>
            <input ng-model="msg">
            <button ng-click="handleClick(msg);">Emit</button>
        </div>
    </div>
  </body>
</html>
```

`$scope.$broadcast` :

```
<html>
  <head>
    <title>Broadcasting</title>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.4/angular.js"></script>
    <script>
        var app = angular.module('app', []);

        app.controller("FirstController", function ($scope) {
            $scope.handleClick = function (msg) {
                $scope.$broadcast('eventName', {message: msg});
            };

        });

        app.controller("SecondController", function ($scope) {
            $scope.$on('eventName', function (event, args) {
                $scope.message = args.message;
            });
        });

    </script>
  </head>
  <body ng-app="app">
    <div ng-controller="FirstController" style="border:2px solid ; padding:5px;">
        <h1>Parent Controller</h1>
        <input ng-model="msg">
        <button ng-click="handleClick(msg);">Broadcast</button>
        <br /><br />
        <div ng-controller="SecondController" style="border:2px solid ;padding:5px;">
            <h1>Child Controller</h1>
            <p>Broadcast Message : {{message}}</p>
        </div>
    </div>
  </body>
</html>
```

$ destory $ rootScope. $.

$ rootScope. $ . .

.

```
angular.module('app').controller('badExampleController', badExample);

badExample.$inject = ['$scope', '$rootScope'];
function badExample($scope, $rootScope) {

    $rootScope.$on('post:created', function postCreated(event, data) {});

}
```

```
angular.module('app').controller('goodExampleController', goodExample);

goodExample.$inject = ['$scope', '$rootScope'];
function goodExample($scope, $rootScope) {

    var deregister = $rootScope.$on('post:created', function postCreated(event, data) {});
```

```
    $scope.$on('$destroy', function destroyScope() {
        deregister();
    });

}
```

: https://riptutorial.com/ko/angularjs/topic/1922/

46:

css ng-hide . ng-show / hide .

Examples

:

```
angular.module('core').factory('print_service', ['$rootScope', '$compile', '$http',
'$timeout','$q',
    function($rootScope, $compile, $http, $timeout,$q) {

        var printHtml = function (html) {
            var deferred = $q.defer();
            var hiddenFrame = $('<iframe style="display:
none"></iframe>').appendTo('body')[0];

            hiddenFrame.contentWindow.printAndRemove = function() {
                hiddenFrame.contentWindow.print();
                $(hiddenFrame).remove();
                deferred.resolve();
            };

            var htmlContent =   "<!doctype html>"+
                                "<html>"+
                                    '<head><link rel="stylesheet" type="text/css"
href="/style/css/print.css"/></head>'+
                                    '<body onload="printAndRemove();">' +
                                        html +
                                    '</body>'+
                                "</html>";

            var doc = hiddenFrame.contentWindow.document.open("text/html", "replace");
            doc.write(htmlContent);
            doc.close();
            return deferred.promise;
        };

        var openNewWindow = function (html) {
            var newWindow = window.open("debugPrint.html");
            newWindow.addEventListener('load', function(){
                $(newWindow.document.body).html(html);
            }, false);
        };

        var print = function (templateUrl, data) {

            $rootScope.isBeingPrinted = true;

            $http.get(templateUrl).success(function(template){
                var printScope = $rootScope.$new()
                angular.extend(printScope, data);
                var element = $compile($('<div>' + template + '</div>'))(printScope);
                var waitForRenderAndPrint = function() {
                    if(printScope.$$phase || $http.pendingRequests.length) {
                        $timeout(waitForRenderAndPrint, 1000);
                    } else {
```

```
                        // Replace printHtml with openNewWindow for debugging
                        printHtml(element.html());
                        printScope.$destroy();
                    }
                };
                waitForRenderAndPrint();
            });
        };

        var printFromScope = function (templateUrl, scope, afterPrint) {
            $rootScope.isBeingPrinted = true;
            $http.get(templateUrl).then(function(response){
                var template = response.data;
                var printScope = scope;
                var element = $compile($('<div>' + template + '</div>'))(printScope);
                var waitForRenderAndPrint = function() {
                    if (printScope.$$phase || $http.pendingRequests.length) {
                        $timeout(waitForRenderAndPrint);
                    } else {
                        // Replace printHtml with openNewWindow for debugging
                        printHtml(element.html()).then(function() {
                            $rootScope.isBeingPrinted = false;
                            if (afterPrint) {
                                afterPrint();
                            }
                        });
                    }
                };
                waitForRenderAndPrint();
            });
        };

        return {
            print : print,
            printFromScope : printFromScope
        }
    }
]);
```

:

```
var template_url = '/views/print.client.view.html';
print_service.printFromScope(template_url,$scope,function(){
      // Print Completed
});
```

: https://riptutorial.com/ko/angularjs/topic/6750/

47:

- (,);

  Decorator , , . Decorator . .

`config` `$provide` `$provide.decorator` .

`$delegate` . `$delegate` . , .

. / .

.

Examples

,

`null` .

```
angular.module('app', [])
  .config(function($provide) {
    $provide.decorator('myService', function($delegate) {
      $delegate.getDate = function() { // override with actual date object
        return new Date();
      };
      return $delegate;
    });
  })
  .service('myService', function() {
    this.getDate = function() {
      return null; // w/o decoration we'll be returning null
    };
  })
  .controller('myController', function(myService) {
    var vm = this;
    vm.date = myService.getDate();
  });
```

```
<body ng-controller="myController as vm">
  <div ng-bind="vm.date | date:'fullDate'"></div>
</body>
```

> Saturday, August 6, 2016

. $ delegate 0 name `Directive` ( ) .

`myDate`

`$delegate[0]` myDateDirective .

. 1 . .

```
<body>
  <my-date></my-date>
</body>
```

```
angular.module('app', [])
  .config(function($provide) {
    $provide.decorator('myDateDirective', function($delegate, $interval) {
      var directive = $delegate[0]; // access directive

      directive.compile = function() { // modify compile fn
        return function(scope) {
          directive.link.apply(this, arguments);
          $interval(function() {
            scope.date = new Date(); // update date every second
          }, 1000);
        };
      };

      return $delegate;
    });
  })
  .directive('myDate', function() {
    return {
      restrict: 'E',
      template: '<span>Current time is {{ date | date:\'MM:ss\' }}</span>',
      link: function(scope) {
        scope.date = new Date(); // get current date
      }
    };
  });
```

> Current time is 08:33

`Filter` ( ) . filter `repeat` , `repeatFilter` . *n* . .

```
<body>
  <div ng-bind="'i can haz cheeseburger ' | repeat:2"></div>
</body>

angular.module('app', [])
  .config(function($provide) {
    $provide.decorator('repeatFilter', function($delegate) {
      return function reverse(input, count) {
        // reverse repeated string
        return ($delegate(input, count)).split('').reverse().join('');
      };
    });
  })
  .filter('repeat', function() {
    return function(input, count) {
      // repeat string n times
      return (input || '').repeat(count || 1);
```

```
    };
  });
```

> i can haz cheeseburger i can haz cheeseburger

> regrubeseehc zah nac i regrubeseehc zah nac i

: https://riptutorial.com/ko/angularjs/topic/5255/-

48:

- (,);
- (,);
- (, $ getFn);
- (,);
- (,);

, . "" . Provider Provider . .

-
-
-
-
-

, , .

Decorators Providers . .

Examples

Constant .

```
angular.module('app',[])
  .constant('endpoint', 'http://some.rest.endpoint') // define
  .config(function(endpoint) {
    // do something with endpoint
    // available in both config- and run phases
  })
  .controller('MainCtrl', function(endpoint) {       // inject
    var vm = this;
    vm.endpoint = endpoint;                          // usage
  });
```

```
<body ng-controller="MainCtrl as vm">
  <div>endpoint = {{ ::vm.endpoint }}</div>
</body>
```

= http : //some.rest.endpoint

Value .

```
angular.module('app',[])
  .value('endpoint', 'http://some.rest.endpoint') // define
  .run(function(endpoint) {
    // do something with endpoint
    // only available in run phase
  })
```

```
  .controller('MainCtrl', function(endpoint) {    // inject
    var vm = this;
    vm.endpoint = endpoint;                       // usage
  });
```

```
<body ng-controller="MainCtrl as vm">
  <div>endpoint = {{ ::vm.endpoint }}</div>
</body>
```

= http : //some.rest.endpoint

Factory .

0 ( ) . .

, , .

```
angular.module('app',[])
  .factory('endpointFactory', function() {
    return {
      get: function() {
        return 'http://some.rest.endpoint';
      }
    };
  })
  .controller('MainCtrl', function(endpointFactory) {
    var vm = this;
    vm.endpoint = endpointFactory.get();
  });
```

```
<body ng-controller="MainCtrl as vm">
  <div>endpoint = {{::vm.endpoint }}</div>
</body>
```

= http : //some.rest.endpoint

Service .

new . 0 .

```
angular.module('app',[])
  .service('endpointService', function() {
    this.get = function() {
      return 'http://some.rest.endpoint';
    };
  })
  .controller('MainCtrl', function(endpointService) {
    var vm = this;
    vm.endpoint = endpointService.get();
  });
```

```
<body ng-controller="MainCtrl as vm">
  <div>endpoint = {{::vm.endpoint }}</div>
</body>
```

= http : //some.rest.endpoint

`Provider` .

`$get` .

API . .

```
angular.module('app',[])
  .provider('endpointProvider', function() {
    var uri = 'n/a';

    this.set = function(value) {
      uri = value;
    };

    this.$get = function() {
      return {
        get: function() {
          return uri;
        }
      };
    };
  })
  .config(function(endpointProviderProvider) {
    endpointProviderProvider.set('http://some.rest.endpoint');
  })
  .controller('MainCtrl', function(endpointProvider) {
    var vm = this;
    vm.endpoint = endpointProvider.get();
  });
```

```
<body ng-controller="MainCtrl as vm">
  <div>endpoint = {{::vm.endpoint }}</div>
</body>
```

= http : //some.rest.endpoint

`config`

endpoint = n / a

: https://riptutorial.com/ko/angularjs/topic/5169/-

49:

- <htmlElement ng-controller = "controllerName"> ... </ htmlElement>
- <script> app.controller ('controllerName', controllerFunction); </ script>

Examples

. HTML .

.

```
<!DOCTYPE html>

<html lang="en" ng-app='MyFirstApp'>
    <head>
        <title>My First App</title>

        <!-- angular source -->
        <script src="https://code.angularjs.org/1.5.3/angular.min.js"></script>

        <!-- Your custom controller code -->
        <script src="js/controllers.js"></script>
    </head>
    <body>
        <div ng-controller="MyController as mc">
            <h1>{{ mc.title }}</h1>
            <p>{{ mc.description }}</p>
            <button ng-click="mc.clicked()">
                Click Me!
            </button>
        </div>
    </body>
</html>
```

.

```
<html ng-app='MyFirstApp'>
```

`ng-app` . .

```
<script src="js/controllers.js"></script>
```

/ Javascript .

```
<div ng-controller="MyController as mc">
```

`ng-controller` DOM ( ) .

`... as mc` (`MyController`) . .

```
<h1>{{ mc.title }}</h1>
```

`{{ ... }}` Angular . , `<h1>` `mc.title` `mc.title` .

: Angular . , `mc.title` .

. `{{ 1 + 2 }}` `{{ "Hello " + "World" }}` .

```
<button ng-click="mc.clicked()">
```

`ng-click` Angular , Click `MyController` `clicked()` .

`MyController` . `js/controller.js` .

Javascript .

```
var app = angular.module("MyFirstApp", []);
```

`ng-app` HTML .

app .

```
app.controller('MyController', function(){
    var ctrl = this;

    ctrl.title = "My First Angular App";
    ctrl.description = "This is my first Angular app!";

    ctrl.clicked = function(){
        alert("MyController.clicked()");
    };
});
```

: , `this` .

.

```
angular
    .module('app')
    .controller('SampleController', SampleController)

SampleController.$inject = ['$log', '$scope'];
function SampleController($log, $scope){
    $log.debug('*****SampleController******');

    /* Your code below */
}
```

: `.$inject` . .

,

.

. .

```
var app = angular.module('app');
app.controller('sampleController', ['$scope', '$http', function(a, b){
    //logic here
}]);
```

. $scope $http a $scope , b $http . .

$inject . .

```
var app = angular.module('app');
app.controller('sampleController', sampleController);
sampleController.$inject = ['$scope', '$http'];
function sampleController(a, b) {
    //logic here
}
```

.

▪

.

$scope $http . .

```
// Intentional Bug: injected dependencies are reversed which will cause a problem
app.controller('sampleController', ['$scope', '$http',function($http, $scope) {
    $http.get('sample.json');
}]);
```

Angular JS ControllerAs

Angular $scope Controller View . , . Angular (, $ scope Controller As) .

-

controllerAs

```
<div ng-controller="CustomerController as customer">
    {{ customer.name }}
</div>
```

controllerAs

```
function CustomerController() {
    this.name = {};
    this.sendMessage = function() { };
}
```

VM

```
function CustomerController() {
    /*jshint validthis: true */
    var vm = this;
    vm.name = {};
    vm.sendMessage = function() { };
}
```

controllerAs $scope . $scope . controllerAs . , -

- $scope . this.* . JavaScript .
- controllerAs parent $parent .
- , " (dotting)" View (: customer.name) " " .
- $parent .
- controllerAs . ViewModel vm . this . .

: controllerAs .

```
<div ng-controller="Controller as vm>...</div>
```

vm $scope.vm .

Minification-Safe

controller .

module.controller . .

. .

:

```
var app = angular.module('myApp');
```

.

```
app.controller('ctrlInject',
    [
        /* Injected Parameters */
        '$Injectable1',
        '$Injectable2',
        /* Controller Function */
        function($injectable1Instance, $injectable2Instance) {
            /* Controller Content */
        }
    ]
);
```

: .

.

```
var
a=angular.module('myApp');a.controller('ctrlInject',['$Injectable1','$Injectable2',function(b,c){/*
Controller Content */}]);
```

app a $Injectable1Instance b , $Injectable2Instance c .

$scope . $scope $scope .

```
.controller('parentController', function ($scope) {
    $scope.parentVariable = "I'm the parent";
});

.controller('childController', function ($scope) {
    $scope.childVariable = "I'm the child";

    $scope.childFunction = function () {
        $scope.parentVariable = "I'm overriding you";
    };
});
```

.

```
<body ng-controller="parentController">
    What controller am I? {{parentVariable}}
    <div ng-controller="childController">
        What controller am I? {{childVariable}}
        <button ng-click="childFunction()"> Click me to override! </button>
    </div>
</body>
```

, . ngController ngController .

: https://riptutorial.com/ko/angularjs/topic/601/

50:

AngularJS .

Examples

" " ng-controller html .

```
<div ng-controller="MainCtrl as main">
</div>
```

. .

```
<div ng-controller="MainCtrl as main">
    {{ main.greeting }}
</div>
```

($ scope).

```
angular
.module('ngNjOrg')
.controller('ForgotPasswordController',function ($log) {
  var self = this;

  self.greeting = "Hello World";
})
```

HTML . ***self*** . ? .

```
angular
.module('ngNjOrg')
.controller('ForgotPasswordController',function ($log) {
  var self = this;

  self.greeting = "Hello World";

  function itsLate () {
    this.greeting = "Goodnight";
  }

})
```

itsLate . JavaScript itsLate "this" "this" . ***self*** .

```
 angular
.module('ngNjOrg')
.controller('ForgotPasswordController',function ($log) {
  var self = this;

  self.greeting = "Hello World";
```

```
  function itsLate () {
    self.greeting = "Goodnight";
  }

})
```

"" . .

: https://riptutorial.com/ko/angularjs/topic/8867/----

51:

Examples

7

1) ng-repeat .

`ng-repeat` ng-repeat .

!

```
<div ng-repeat="user in userCollection">
  <div ng-repeat="details in user">
    {{details}}
  </div>
</div>
```

. ng-repeat track by $index (id) track by $index . ng-repeat . track by Angular $index object id .

```
<div ng-repeat="user in userCollection track by $index">
  {{user.data}}
</div>
```

, , limitTo . .

---

2)

. .

```
<!-- Default data binding has a performance cost -->
<div>{{ my.data }}</div>
```

(AngularJS> = 1.3)

```
<!-- Bind once is much faster -->
<div>{{ ::my.data }}</div>

<div ng-bind="::my.data"></div>

<!-- Use single binding notation in ng-repeat where only list display is needed  -->
<div ng-repeat="user in ::userCollection">
  {{::user.data}}
</div>
```

" (bind once)" Angular . Angular DOM .

`{{}}` .

`ng-bind` watcher . `ng-bind` .

`$digest` .

---

3) .

AngularJS . . ( ).

.

```
<div ng-controller="bigCalulations as calc">
  <p>{{calc.calculateMe()}}</p>
  <p>{{calc.data | heavyFilter}}</p>
</div>
```

```
<div ng-controller="bigCalulations as calc">
  <p>{{calc.preCalculatedValue}}</p>
  <p>{{calc.data | lightFilter}}</p>
</div>
```

:

```
app.controller('bigCalulations', function(valueService) {
    // bad, because this is called in every digest loop
    this.calculateMe = function() {
        var t = 0;
        for(i = 0; i < 1000; i++) {
            t += i;
        }
        return t;
    }
    // good, because this is executed just once and logic is separated in service to    keep
the controller light
    this.preCalulatedValue = valueService.valueCalculation(); // returns 499500
});
```

---

4)

. UI . .

Angular .

`$watch()` - .

`$watchCollection()` - (`$watch` `$watch`).

`$watch(..., true)` - `watchCollection` , "deep watch" `watchCollection`)

{{::variable}} .

. (@Words)

```
(function() {
    var root = angular.element(document.getElementsByTagName('body')),
        watchers = [],
        f = function(element) {
        angular.forEach(['$scope', '$isolateScope'], function(scopeProperty) {
            if(element.data() && element.data().hasOwnProperty(scopeProperty)) {
                angular.forEach(element.data()[scopeProperty].$$watchers, function(watcher) {
                watchers.push(watcher);
                });
            }
        });

        angular.forEach(element.children(), function(childElement) {
            f(angular.element(childElement));
        });
    };

    f(root);

    // Remove duplicate watchers
    var watchersWithoutDuplicates = [];
    angular.forEach(watchers, function(item) {
        if(watchersWithoutDuplicates.indexOf(item) < 0) {
            watchersWithoutDuplicates.push(item);
        }
    });
    console.log(watchersWithoutDuplicates.length);
})();
```

---

5) ng-if / ng-show

. **ng-if** DOM **ng-show** . ng-if ng-if .

, .

- ng-if ng-if
- / ng-show/ng-hide

```
<div ng-repeat="user in userCollection">
  <p ng-if="user.hasTreeLegs">I am special<!-- some complicated DOM --></p>
  <p ng-show="user.hasSubscribed">I am awesome<!-- switch this setting on and off --></p>
</div>
```

ng-if - ng-if test !

---

6)

. .

```
angular.module('exampleApp', []).config(['$compileProvider', function ($compileProvider) {
    $compileProvider.debugInfoEnabled(false);
}]);
```

---

7)

Dependency Injection . .

. Angular $ inject . .

PRO : $ inject . . annotate . if (! ($ inject = fn. $ inject)). $ inject , !

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

var DemoController = function (s, h) {
    h.get('https://api.github.com/users/angular/repos').success(function (repos) {
        s.repos = repos;
    });
}
// $inject property annotation
DemoController['$inject'] = ['$scope', '$http'];

app.controller('DemoController', DemoController);
```

PRO TIP 2 : `ng-app` `ng-strict-di` DI . :

```
<html ng-app="DemoApp" ng-strict-di>
```

:

```
angular.bootstrap(document, ['DemoApp'], {
    strictDi: true
});
```

.

Angular . Angular .

. .

: `{{my.data}}`

`::` . my.data . . Angular .

```
{{::my.data}}
<span ng-bind="::my.data"></span>
<span ng-if="::my.data"></span>
<span ng-repeat="item in ::my.data">{{item}}</span>
```

```
<span ng-class="::{ 'my-class': my.data }"></div>
```

: `my.data` . .

AngularJS . ( ).

:

```
<div ng-controller="bigCalulations as calc">
  <p>{{calc.calculateMe()}}</p>
  <p>{{calc.data | heavyFilter}}</p>
</div>
```

```
<div ng-controller="bigCalulations as calc">
  <p>{{calc.preCalculatedValue}}</p>
  <p>{{calc.data | lightFilter}}</p>
</div>
```

.

```
.controller("bigCalulations", function(valueService) {
  // bad, because this is called in every digest loop
  this.calculateMe = function() {
    var t = 0;
    for(i = 0; i < 1000; i++) {
      t = t + i;
    }
    return t;
  }
  //good, because it is executed just once and logic is separated in service to    keep the
controller light
  this.preCalulatedValue = valueService.caluclateSumm(); // returns 499500
});
```

.

`$watch()` `$watchCollection` new watcher .

, ?

Watcher . Angular . `$watch()` `$watchCollection` .

```
(function() {
  angular.module("app", []).controller("ctrl", function($scope) {
    $scope.value = 10;
    $scope.$watch(
      function() { return $scope.value; },
      function() { console.log("value changed"); }
    );
  }
})();
```

. . UI. ( )

Angular .

`$watch()` - .

`$watchCollection()` - ($ watch).

`$watch(..., true)` - , "deep watch" (watchCollection)

. `{{::variable}}` .

. (Jared @Words - ?

```
(function() {
  var root = angular.element(document.getElementsByTagName("body")),
      watchers = [];

  var f = function(element) {

    angular.forEach(["$scope", "$isolateScope"], function(scopeProperty) {
      if(element.data() && element.data().hasOwnProperty(scopeProperty)) {
        angular.forEach(element.data()[scopeProperty].$$watchers, function(watcher) {
          watchers.push(watcher);
        });
      }
    });

    angular.forEach(element.children(), function(childElement) {
      f(angular.element(childElement));
    });

  };

  f(root);

  // Remove duplicate watchers
  var watchersWithoutDuplicates = [];
  angular.forEach(watchers, function(item) {
    if(watchersWithoutDuplicates.indexOf(item) < 0) {
      watchersWithoutDuplicates.push(item);
    }
  });

  console.log(watchersWithoutDuplicates.length);

})();
```

ng-stats . Angular . `showAngularStats` `showAngularStats` .

```
showAngularStats({
  "position": "topleft",
  "digestTimeThreshold": 16,
  "autoload": true,
  "logDigest": true,
  "logWatches": true
});
```

( ).

ng-show ng-show

. `ng-if` DOM . `ng-if` . `ng-show` .

ng-if

ngIf DOM . ngIf DOM , DOM .

---

ngShow ngShow HTML . ng-hide CSS .

```
<div ng-repeat="user in userCollection">
  <p ng-if="user.hasTreeLegs">I am special
    <!-- some complicated DOM -->
  </p>
  <p ng-show="user.hasSubscribed">I am aweosme
    <!-- switch this setting on and off -->
  </p>
</div>
```

(: 95 % `ng-if` DOM `ng-show`).

`ng-if` !

: `ng-if` `ng-show` `ng-hide` . `$parent.property` .

```
<div ng-controller="ExampleController">
    <form name="userForm">
        Name:
        <input type="text" name="userName"
           ng-model="user.name"
           ng-model-options="{ debounce: 1000 }" />
            <button ng-click="userForm.userName.$rollbackViewValue();
user.name=''">Clear</button><br />
    </form>
    <pre>user.name = </pre>
</div>
```

1 1000 . , `ng-model` `$digest` .

debounce . . .

.

.

```
//always deregister these
$rootScope.$on(...);
$scope.$parent.$on(...);
```

:

```
//no need to deregister this
$scope.$on(...);
```

`$rootScope.$on` . .

.

```
angular.module('app').controller('badExampleController', badExample);
badExample.$inject = ['$scope', '$rootScope'];

function badExample($scope, $rootScope) {
    $rootScope.$on('post:created', function postCreated(event, data) {});
}
```

```
angular.module('app').controller('goodExampleController', goodExample);
goodExample.$inject = ['$scope', '$rootScope'];

function goodExample($scope, $rootScope) {
    var deregister = $rootScope.$on('post:created', function postCreated(event, data) {});

    $scope.$on('$destroy', function destroyScope() {
        deregister();
    });
}
```

: https://riptutorial.com/ko/angularjs/topic/1921/---

52:

Examples

`ng-repeat` `.app.filter()` . .

(`.toUpperCase()` javascript) .

```
var app = angular.module("MyApp", []);

// just like making a controller, you must give the
// filter a unique name, in this case "toUppercase"
app.filter('toUppercase', function(){
    // all the filter does is return a function,
    // which acts as the "filtering" function
    return function(rawString){
        // The filter function takes in the value,
        // which we modify in some way, then return
        // back.
        return rawString.toUpperCase();
    };
});
```

.

, "toUppercase" . `.app.filter(...)` . . .

: ., *( )* .

. ( ) .

`$filter` .

```
app.controller("MyController", function($scope, $filter){
    this.rawString = "Foo";
    this.capsString = $filter("toUppercase")(this.rawString);
});
```

HTML

(|) . `rawString` `MyController` .

```
<div ng-controller="MyController as ctrl">
    <span>Capital rawString: {{ ctrl.rawString | toUppercase }}</span>
</div>
```

: *Angular "" "toUppercase"* .

. null .

```
function removeNulls() {
    return function(list) {
        for (var i = list.length - 1; i >= 0; i--) {
            if (typeof list[i] === 'undefined' ||
                    list[i] === null) {
                list.splice(i, 1);
            }
        }
        return list;
    };
}
```

HTML .

```
{{listOfItems | removeNulls}}
```

```
listOfItems = removeNullsFilter(listOfItems);
```

. .

```
function convertToBooleanValue() {
    return function(input) {
        if (typeof input !== 'undefined' &&
                input !== null &&
                (input === true || input === 1 || input === '1' || input
                        .toString().toLowerCase() === 'true')) {
            return true;
        }
        return false;
    };
}
```

HTML .

```
{{isAvailable | convertToBooleanValue}}
```

:

```
var available = convertToBooleanValueFilter(isAvailable);
```

.

:

```
(function() {
  "use strict";
  angular
    .module('app', [])
    .controller('mainCtrl', mainCtrl);
```

```
  function mainCtrl() {
    var vm = this;

    vm.classifications = ["Saloons", "Sedans", "Commercial vehicle", "Sport car"];
    vm.cars = [
       {
          "name":"car1",
          "classifications":[
             {
                "name":"Saloons"
             },
             {
                "name":"Sedans"
             }
          ]
       },
       {
          "name":"car2",
          "classifications":[
             {
                "name":"Saloons"
             },
             {
                "name":"Commercial vehicle"
             }
          ]
       },
       {
          "name":"car3",
          "classifications":[
             {
                "name":"Sport car"
             },
             {
                "name":"Sedans"
             }
          ]
       }
    ];
  }
})();
```

:

```
<body ng-app="app" ng-controller="mainCtrl as main">
  Filter car by classification:
  <select ng-model="classificationName"
          ng-options="classification for classification in main.classifications"></select>
  <br>
  <ul>
    <li ng-repeat="car in main.cars |
                   filter: { classifications: { name: classificationName } } track by $index"
                  ng-bind-template="{{car.name}} - {{car.classifications | json}}">
    </li>
  </ul>
</body>
```

□□□ .

`$filter` Angular , , .

```
angular.module("app")
  .service("users", usersService)
  .controller("UsersController", UsersController);

function usersService () {
  this.getAll = function () {
    return [{
      id: 1,
      username: "john"
    }, {
      id: 2,
      username: "will"
    }, {
      id: 3,
      username: "jack"
    }];
  };
}

function UsersController ($filter, users) {
  var orderByFilter = $filter("orderBy");

  this.users = orderByFilter(users.getAll(), "username");
  // Now the users are ordered by their usernames: jack, john, will

  this.users = orderByFilter(users.getAll(), "username", true);
  // Now the users are ordered by their usernames, in reverse order: will, john, jack
}
```

ng-repeat

ng-repeat . ng-repeat as [variablename] .

```
<ul>
  <li ng-repeat="item in vm.listItems | filter:vm.myFilter as filtered">
    {{item.name}}
  </li>
</ul>
<span>Showing {{filtered.length}} of {{vm.listItems.length}}</span>
```

: https://riptutorial.com/ko/angularjs/topic/1401/

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