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View this presentation in its full glory at:  
<http://pres.crbdev.com/angularjs/>

# What is AngularJS?

- MV\* framework
- Ideal for single page applications
- "HTML Enhanced"

# Features

- Templating
- Data binding
- Directives
- Services
- Dependency injection
- Filters
- Routing
- Testability

# Templating

```
<!DOCTYPE html>
<html ng-app="myApp">
  <head>
    ...
  </head>
  <body ng-controller="PageCtrl">

    <h1>{{title}}</h1>

    <p>{{content}}</p>

  </body>
</html>
```

# Data Binding

```
var myApp = angular.module('myApp');

myApp.controller('PageCtrl', function ($scope) {

    $scope.title = 'The Eleventh Hour';

    $scope.content = "There's something you better understand about me
, 'cause it's important and one day your life may depend on it. I am defin
itely a madman with a box!";

});
```

# Data Binding

## View demo

(<http://pres.crbdev.com/angularjs/demo/binding.html>)

```
<!DOCTYPE html>
<html ng-app>
  <head>
    ...
  </head>
  <body>

    <input ng-model="items" type="text" />

    <p>{{items || 'Fezes'}} are cool!</p>

  </body>
</html>
```

# Directives

"Teach HTML new tricks"

Add behavior to DOM elements with custom attributes

Create custom elements

- ng-model
- ng-repeat
- ng-click
- ng-view
- ng-pluralize

# Directives in Action

## View demo

(<http://pres.crbdev.com/angularjs/demo/directive.html>)

```
<!DOCTYPE html>
<html ng-app="quoteApp">
  <head>
    ...
  </head>
  <body ng-controller="QuoteCtrl">
    <ul>
      <li ng-repeat="quote in quotes"
          ng-class="{emphasize: quote.em}"
          ng-click="toggleEmphasis(quote)">
        "{{quote.text}}"
      </li>
    </ul>
  </body>
</html>
```



# Directives in Action

```
var quoteApp = angular.module('quoteApp', []);
quoteApp.controller('QuoteCtrl', function ($scope) {
  $scope.quotes = [
    { em : false, text : "Never ignore a ..." },
    { em : true, text : "Bow ties are cool." },
    { em : false, text : "It's a lot to take ..." },
    { em : false, text : "First things first. You ..." }
  ];

  $scope.toggleEmphasis = function (quote) {
    quote.em = !quote.em;
  };
});
```

# Directives - make your own!

## Attributes

```
<select chosen>
  <option value="1">1</option>
  <option value="2">2</option>
  <option value="3">3</option>
</select>
```

**Chosen site**

(<http://harvesthq.github.com/chosen/>)

**Tutorial**

(<http://www.youtube.com/watch?v=8ozyXwLzFYs>)

# Directives - make your own!

## Elements

```
<markdown>
  # AngularJS

  * Directives
  * Services
  * Filters
</markdown>
```

### Tutorial Part 1

(<http://www.youtube.com/watch?v=A6wq16Ow5Ec>)

### Tutorial Part 2

(<http://www.youtube.com/watch?v=nKJDHnXaKTY>)

# Services

Injectable objects that carry out specific tasks  
Provide a way to separate concerns and re-use code

- \$http
- \$resource
- \$locale
- \$timeout
- \$filter
- \$routeProvider

# Dependency Injection

## services.js

```
angular.module('quoteServices', ['ngResource'])  
.factory('Quote', function ($resource) {  
    return $resource('/quotes/:id');  
});
```

## quote\_controller.js

```
var quoteApp = angular.module('quoteApp', ['quoteServices']);  
quoteApp.controller('QuoteCtrl', function ($scope, Quote) {  
    $scope.quotes = Quote.query();  
  
    $scope.toggleEmphasis = function (quote) {  
        quote.em = !quote.em;  
    };  
});
```

# Filters

Used in template expressions to format the display of data

- currency
- date
- json
- orderBy
- filter

currency

**View demo**

(<http://pres.crbdev.com/angularjs/demo/currency.html>)

```
<input type="number" ng-model="amount">
<p>{{amount | currency}}</p>
```

filter

**View demo**

(<http://pres.crbdev.com/angularjs/demo/filter.html>)

```
<input type="text" ng-model="query">
<ul>
  <li ng-repeat="item in items | filter:query">
    {{item}}
  </li>
</ul>
```

# Routing

## View demo

(<http://pres.crbdev.com/angularjs/demo/routing.html>)

```
angular.module('quoteApp', [],  
  function($routeProvider) {  
    $routeProvider  
      .when('/', {  
        templateUrl : 'views/index.html',  
        controller : 'QuoteCtrl'  
      })  
      .when('/quote/:id', {  
        templateUrl : 'views/show.html',  
        controller : 'QuoteDetailCtrl'  
      })  
      .otherwise({ redirectTo : '/' });  
  }  
);
```



# Testability

- "Built to be testable"
  - Dependency injection
  - Separation of concerns
- Mocks for unit tests
- DSL for end-to-end tests
- Resources provided are Jasmine-only
- Developers favor Testacular

# Unit Tests

## quote\_controller.js

```
var myApp = angular.module('myApp');

myApp.controller('QuoteCtrl', function ($scope, $http) {
    $http.get('/quotes').success(function(data) {
        $scope.quotes = data;
    });
});
```

# controller\_spec.js

```
describe('QuoteCtrl', function() {
  var scope, ctrl, $httpBackend;

  beforeEach(inject(function(_$httpBackend_, $rootScope, $controller) {
    $httpBackend = _$httpBackend_;
    $httpBackend.expectGET('/quotes')
      .respond([
        {text: 'Four score...'},
        {text: 'Ask not...'}
      ]);
    scope = $rootScope.$new();
    ctrl = $controller('QuoteCtrl', {$scope: scope});
  }));

  it('creates a quotes model with 2 quotes fetched from xhr', function() {
    expect(scope.quotes).toBeUndefined();
    $httpBackend.flush();
    expect(scope.quotes)
      .toEqual([
        {text: 'Four score...'},
        {text: 'Ask not...'}
      ]);
  });
});
```

# End-to-end Tests

## Filter demo

(<http://pres.crbdev.com/angularjs/demo/filter.html>)

```
describe('Grocery list', function() {  
  beforeEach(function() {  
    browser().navigateTo('/');  
  });  
  
  it('filters the grocery list based on the search query', function() {  
    expect(repeater('.groceries li').count()).toBe(7);  
  
    input('query').enter('b');  
    expect(repeater('.groceries li').count()).toBe(2);  
  
    input('query').enter('cheese');  
    expect(repeater('.groceries li').count()).toBe(3);  
  });  
});
```

# Resources

## Learning

- [angularjs.org](http://angularjs.org)  
(<http://angularjs.org>)
- YouTube
  - [johnlindquist](http://www.youtube.com/user/johnlindquist?feature=watch)  
(<http://www.youtube.com/user/johnlindquist?feature=watch>)
  - [simpulton](http://www.youtube.com/user/simpulton)  
(<http://www.youtube.com/user/simpulton>)

## Troubleshooting

- [groups.google.com/group/angular](http://groups.google.com/group/angular)  
(<http://groups.google.com/group/angular>)
- IRC - #angularjs

# Resources

## Useful Stuff

- [angular-ui.github.com](http://angular-ui.github.com)  
(<http://angular-ui.github.com>)
- [github.com/angular/angular-seed](http://github.com/angular/angular-seed)  
(<http://github.com/angular/angular-seed>)

# Why use AngularJS?

- Reduces boilerplate
- 2-way data binding
- Separation of concerns
- Dependency injection
- Full-featured
- Extensible
- Testable

**Thank You!**