Departamento de
Informática e Ingeniería
de Sistemas
Universidad Zaragoza

Práctica 6
AngularJS

Sistemas y Tecnologías Web

Grado en Ingeniería Informática

Curso 2015-2016

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AngularJS

https://angularjs.org/

https://docs.angularjs.org/guide

https://docs.angularjs.org/api

AngularJS

- Framework estructural para construir aplicaciones Web
- Centrado en el *front-end*
- Curva de aprendizaje poco progresiva
- Extiende la sintaxis de HTML
  - Control sobre el DOM
  - *Data binding* {{ }}
  - Validación de campos y formularios
  - Agrupación de elementos HTML para crear componentes

Un ejemplo rápido

```
<!doctype html>
<html ng-app>
   <head>
      <script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.3/
angular.min.js"></script>
   </head>
   <body>
      <div>
         <label>Name:</label>
         <input type = "text" ng-model = "yourName"
             placeholder = "Enter a name here">
         <hr />
         <h1>Hello {{yourName}}!</h1>
      </div>
   </body>
</html>
```

Componentes

- **Template** - HTML with additional markup
- **Directives** - extend HTML with custom attributes and elements
- **Model** - the data shown to the user in the view and with which the user interacts
- **Scope** - context where the model is stored so that controllers, directives and expressions can access it
- **Expressions** - access variables and functions from the scope
- **Compiler** - parses the template and instantiates directives and expressions
- **Filter -** formats the value of an expression for display to the user
- **View** - what the user sees (the DOM)
- **Data Binding** - sync data between the model and the view
- **Controller** - the business logic behind views
- **Dependency Injection** - Creates and wires objects and functions
- **Injector** - dependency injection container
- **Module** - a container for the different parts of an app including controllers, services, filters, directives which configures the Injector
- **Service** - reusable business logic independent of views

Asociación de datos

```
<!doctype html>
<html ng-app>
   <head>
      <script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.3/
angular.min.js"></script>
   </head>
   <body>
     <div ng-app ng-init="qty=1;cost=2">
       <b>Invoice:</b>
       <div>
         Quantity: <input type="number" min="0" ng-model="qty">
       </div>
       <div>
         Costs: <input type="number" min="0" ng-model="cost">
       </div>
       <div>
         <b>Total:</b> {{qty * cost | currency}}
       </div>
     </div>
    </body>
</html>
/*
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can be found in the LICENSE file at http://angular.io/license
*/
```
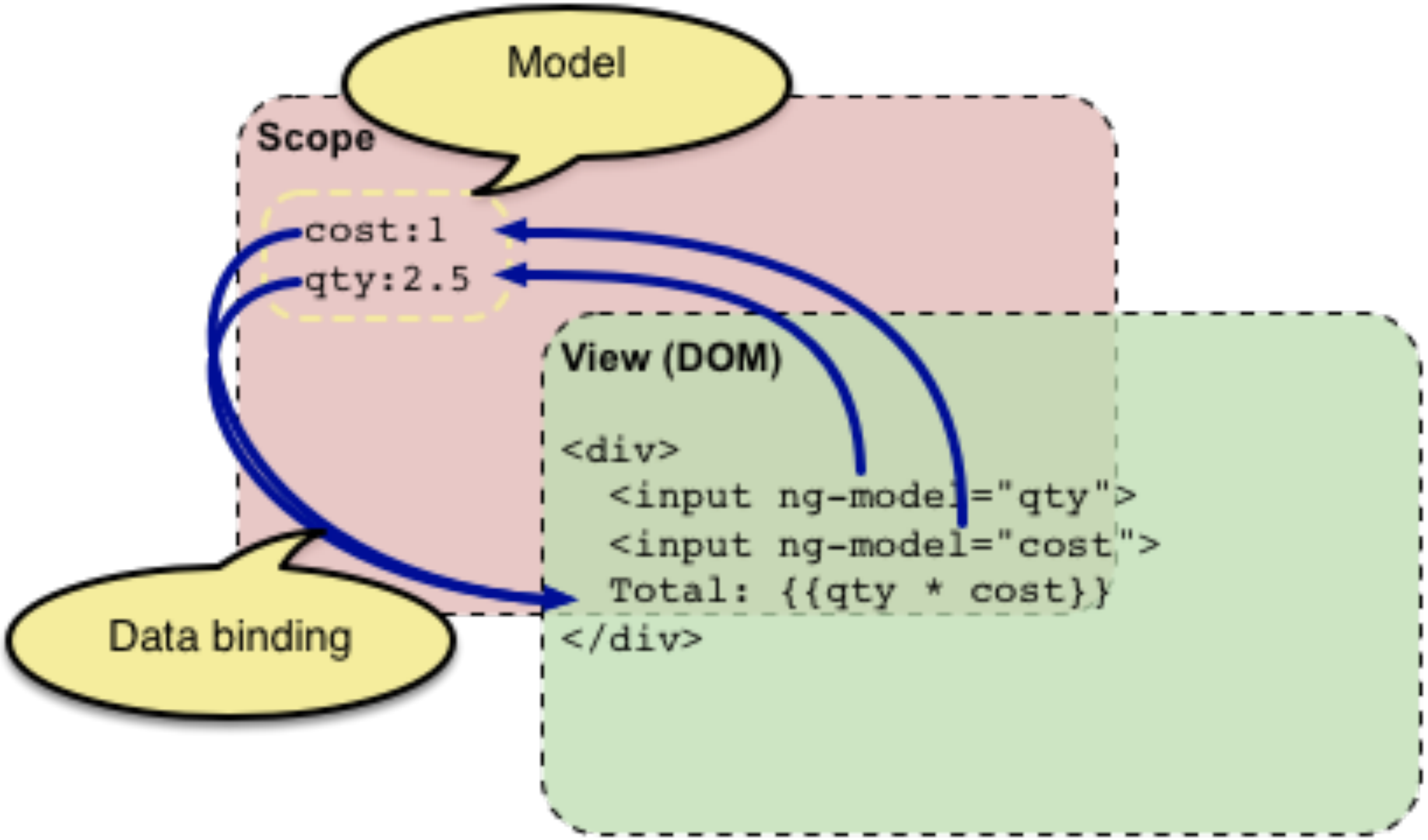

Asociación de datos



```
<div>
  <input ng-model="qty">
  <input ng-model="cost">
  Total: {{qty * cost}}
</div>
```

Controladores

```
invoice1.js

(function(angular) {
  'use strict';
angular.module('invoice1', [])
  .controller('InvoiceController', function() {
    this.qty = 1;
    this.cost = 2;
    this.inCurr = 'EUR';
    this.currencies = ['USD', 'EUR', 'CNY'];
    this.usdToForeignRates = {
      USD: 1,
      EUR: 0.74,
      CNY: 6.09
    };

    this.total = function total(outCurr) {
      return this.convertCurrency(this.qty * this.cost, this.inCurr, outCurr);
    };
    this.convertCurrency = function convertCurrency(amount, inCurr, outCurr) {
      return amount * this.usdToForeignRates[outCurr] / this.usdToForeignRates[inCurr];
    };
    this.pay = function pay() {
      window.alert("Thanks!");
    };
  });
})(window.angular);
/*
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*/
```

Controladores

index.html

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Example - example-guide-concepts-2-production</title>
  <script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.5.5/angular.min.js"></script>
  <script src="invoice1.js"></script>
</head>
<body >
  <div ng-app="invoice1" ng-controller="InvoiceController as invoice">
  <b>Invoice:</b>
  <div>
    Quantity: <input type="number" min="0" ng-model="invoice.qty" required >
  </div>
  <div>
    Costs: <input type="number" min="0" ng-model="invoice.cost" required >
    <select ng-model="invoice.inCurr">
      <option ng-repeat="c in invoice.currencies">{{c}}</option>
    </select>
  </div>
  <div>
    <b>Total:</b>
    <span ng-repeat="c in invoice.currencies">
      {{invoice.total(c) | currency:c}}
    </span>
    <button class="btn" ng-click="invoice.pay()">Pay</button>
  </div>
</div>
</body>
</html>
/*
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can be found in the LICENSE file at http://angular.io/license
*/
```
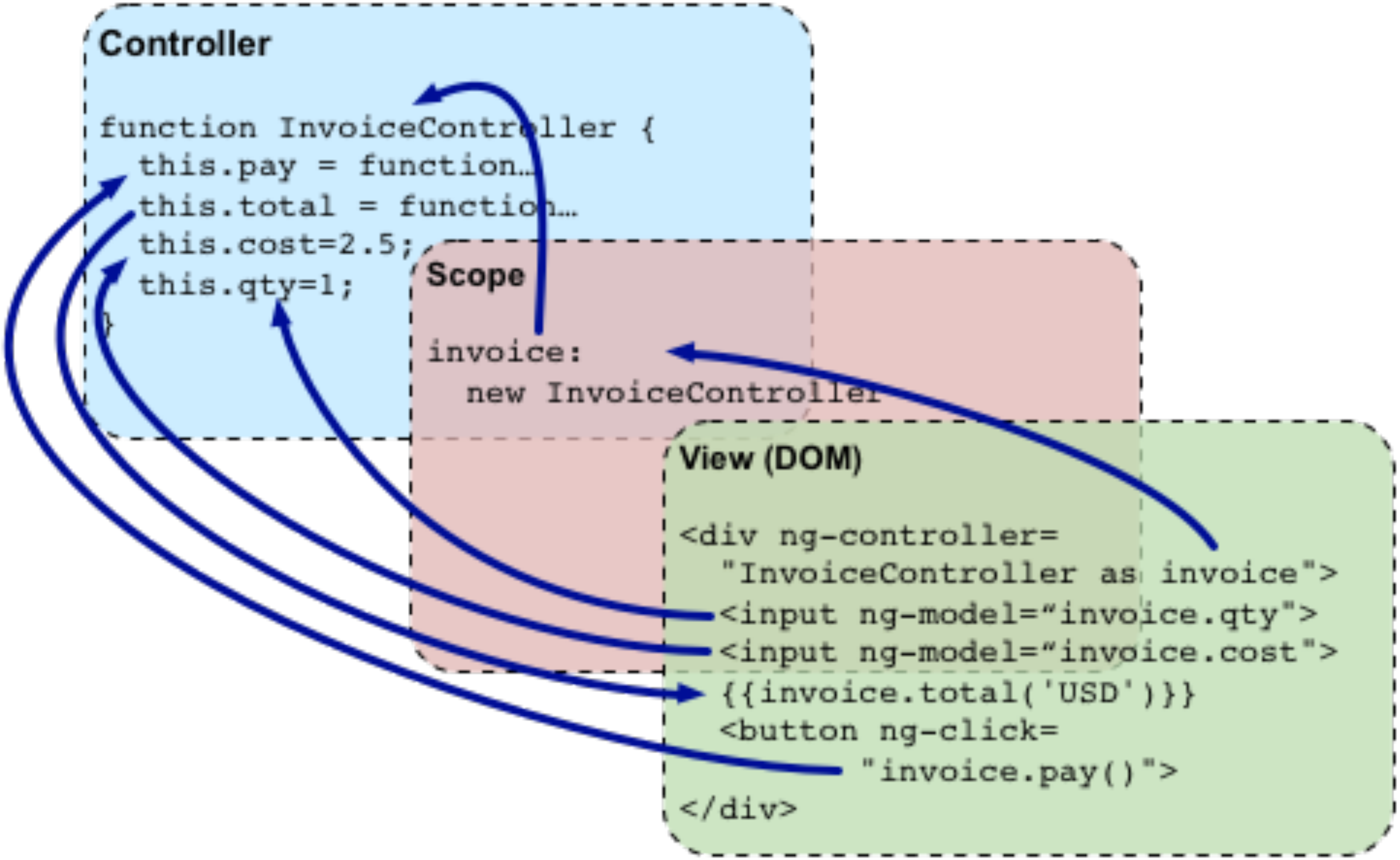

Controladores



Controller

```
function InvoiceController {
  this.pay = function…
  this.total = function…
  this.cost=2.5;
  this.qty=1;
}
```

Scope

```
invoice:
  new InvoiceController
```

View (DOM)

```
<div ng-controller=
  "InvoiceController as invoice">
  <input ng-model=“invoice.qty">
  <input ng-model=“invoice.cost">
  {{invoice.total('USD')}}
  <button ng-click=
    "invoice.pay()">
</div>
```

Servicios

finance2.js

```
(function(angular) {
  'use strict';
angular.module('finance2', [])
  .factory('currencyConverter', function() {
    var currencies = ['USD', 'EUR', 'CNY'];
    var usdToForeignRates = {
      USD: 1,
      EUR: 0.74,
      CNY: 6.09
    };
    var convert = function (amount, inCurr, outCurr) {
      return amount * usdToForeignRates[outCurr] / usdToForeignRates[inCurr];
    };

    return {
      currencies: currencies,
      convert: convert
    };
  });
})(window.angular);

/*
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*/
```

Servicios

invoice2.js

```
(function(angular) {
  'use strict';
angular.module('invoice2', ['finance2'])
  .controller('InvoiceController', ['currencyConverter', function(currencyConverter) {
    this.qty = 1;
    this.cost = 2;
    this.inCurr = 'EUR';
    this.currencies = currencyConverter.currencies;

    this.total = function total(outCurr) {
      return currencyConverter.convert(this.qty * this.cost, this.inCurr, outCurr);
    };
    this.pay = function pay() {
      window.alert("Thanks!");
    };
  }]);
})(window.angular);

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*/
```

Servicios

```
index.html

<!doctype html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Example - example-guide-concepts-21-production</title>


  <script src=”http://ajax.googleapis.com/ajax/libs/angularjs/1.5.5/angular.min.js"></script>
  <script src="finance2.js"></script>
  <script src="invoice2.js"></script>



</head>
<body >
  <div ng-app="invoice2" ng-controller="InvoiceController as invoice">
  <b>Invoice:</b>
  <div>
    Quantity: <input type="number" min="0" ng-model="invoice.qty" required >
  </div>
  <div>
    Costs: <input type="number" min="0" ng-model="invoice.cost" required >
    <select ng-model="invoice.inCurr">
      <option ng-repeat="c in invoice.currencies">{{c}}</option>
    </select>
  </div>
  <div>
    <b>Total:</b>
    <span ng-repeat="c in invoice.currencies">
      {{invoice.total(c) | currency:c}}
    </span>
    <button class="btn" ng-click="invoice.pay()">Pay</button>
  </div>
</div>
</body>
</html>

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-->
```
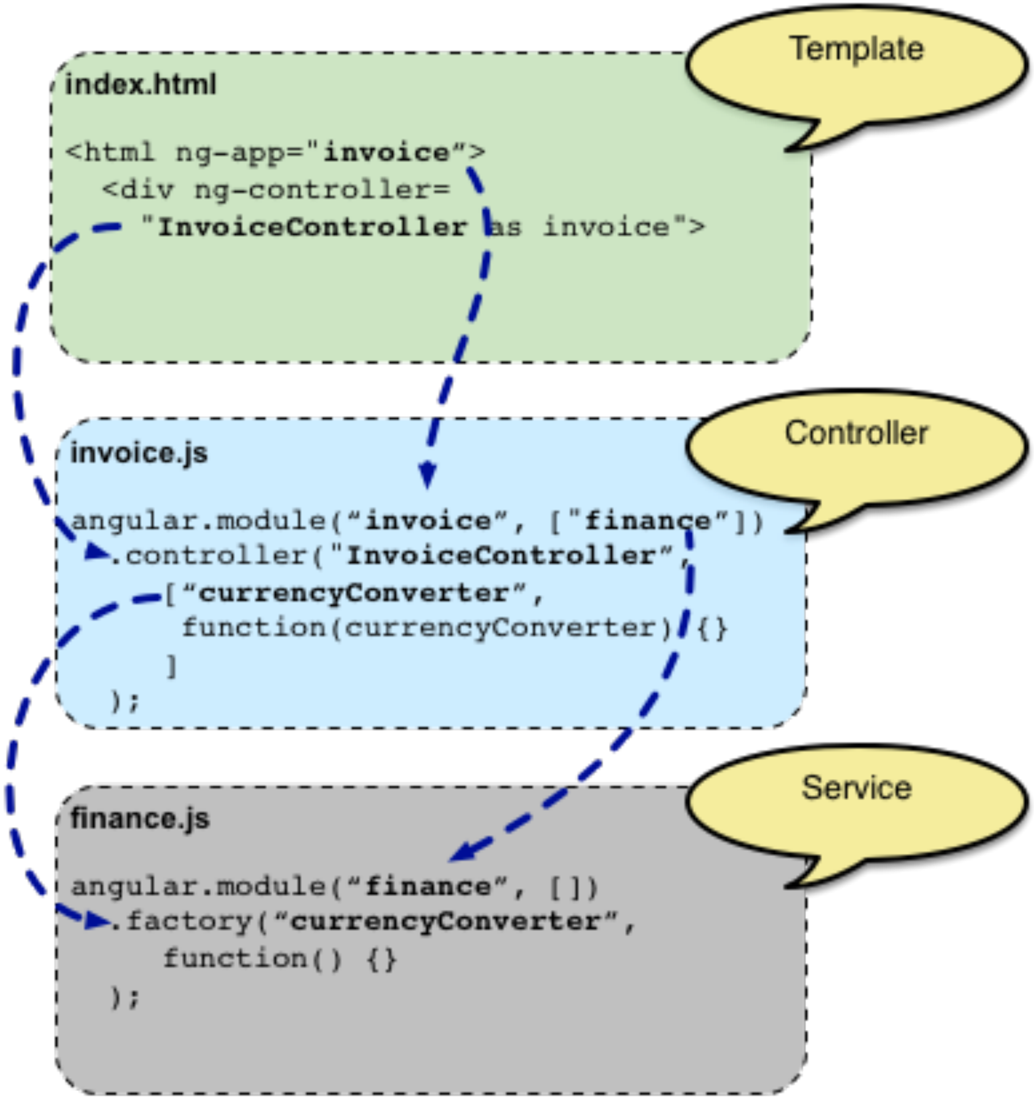

Servicios



index.html

```
<html ng-app="invoice">
  <div ng-controller=
    "InvoiceController as invoice">
```

Template

invoice.js

```
angular.module(“invoice”, ["finance"])
 .controller("InvoiceController",
    [“currencyConverter”,
     function(currencyConverter) {}
    ]
 );
```

Controller

finance.js

```
angular.module(“finance”, [])
 .factory(“currencyConverter”,
    function() {}
 );
```

Service

Backend (Yahoo Finance API)

finance3.js

```
(function(angular) {
  'use strict';
angular.module('finance3', [])
  .factory('currencyConverter', ['$http', function($http) {
    var YAHOO_FINANCE_URL_PATTERN =
          ’http://query.yahooapis.com/v1/public/yql?q=select * from '+
          'yahoo.finance.xchange where pair in ("PAIRS")&format=json&'+
          'env=store://datatables.org/alltableswithkeys&callback=JSON_CALLBACK';
    var currencies = ['USD', 'EUR', 'CNY'];
    var usdToForeignRates = {};

    var convert = function (amount, inCurr, outCurr) {
      return amount * usdToForeignRates[outCurr] / usdToForeignRates[inCurr];
    };

    var refresh = function() {
      var url = YAHOO_FINANCE_URL_PATTERN.
                 replace('PAIRS', 'USD' + currencies.join('","USD'));
      return $http.jsonp(url).then(function(response) {
        var newUsdToForeignRates = {};
        angular.forEach(response.data.query.results.rate, function(rate) {
          var currency = rate.id.substring(3,6);
          newUsdToForeignRates[currency] = window.parseFloat(rate.Rate);
        });
        usdToForeignRates = newUsdToForeignRates;
      });
    };

    refresh();

    return {
      currencies: currencies,
      convert: convert
    };
  }]);
})(window.angular);

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*/
```

Backend (Yahoo Finance API)

invoice3.js

```
(function(angular) {
  'use strict';
angular.module('invoice3', ['finance3'])
  .controller('InvoiceController', ['currencyConverter', function(currencyConverter) {
    this.qty = 1;
    this.cost = 2;
    this.inCurr = 'EUR';
    this.currencies = currencyConverter.currencies;

    this.total = function total(outCurr) {
      return currencyConverter.convert(this.qty * this.cost, this.inCurr, outCurr);
    };
    this.pay = function pay() {
      window.alert("Thanks!");
    };
  }]);
})(window.angular);

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*/
```

Backend (Yahoo Finance API)

index.html

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Example - example-guide-concepts-3-production</title>


  <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.5/angular.min.js"></script>
  <script src="invoice3.js"></script>
  <script src="finance3.js"></script>



</head>
<body >
  <div ng-app="invoice3" ng-controller="InvoiceController as invoice">
  <b>Invoice:</b>
  <div>
    Quantity: <input type="number" min="0" ng-model="invoice.qty" required >
  </div>
  <div>
    Costs: <input type="number" min="0" ng-model="invoice.cost" required >
    <select ng-model="invoice.inCurr">
      <option ng-repeat="c in invoice.currencies">{{c}}</option>
    </select>
  </div>
  <div>
    <b>Total:</b>
    <span ng-repeat="c in invoice.currencies">
      {{invoice.total(c) | currency:c}}
    </span>
    <button class="btn" ng-click="invoice.pay()">Pay</button>
  </div>
</div>
</body>
</html>

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-->
```
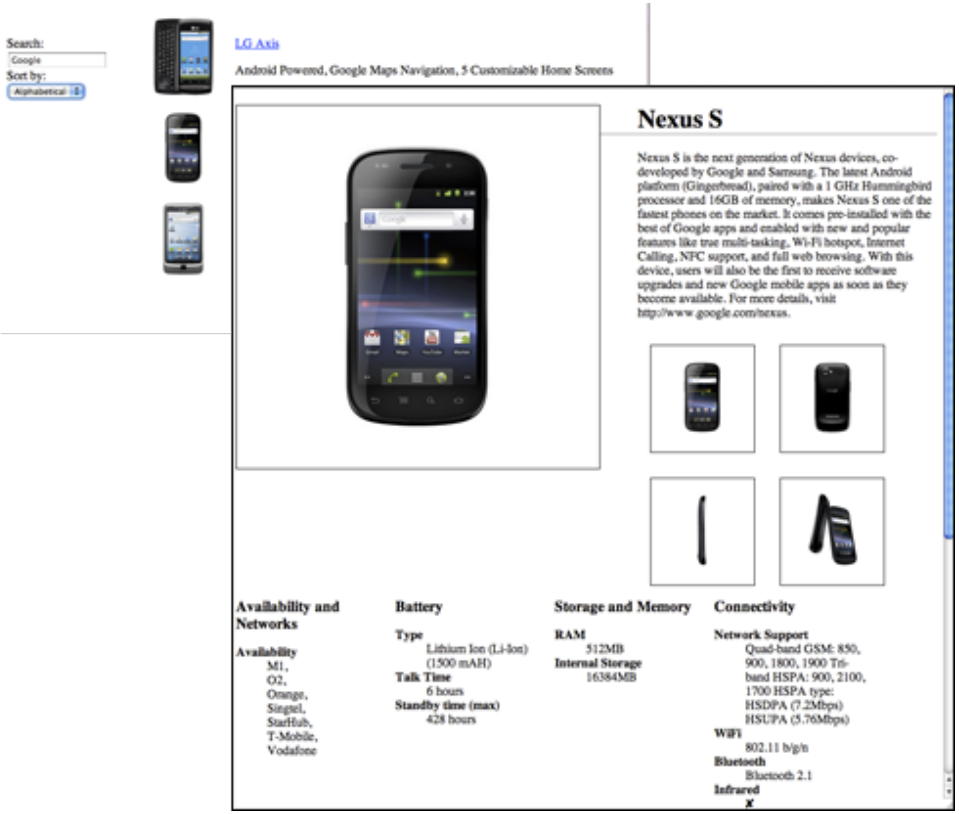

PhoneCat Tutorial App

https://docs.angularjs.org/tutorial/

- Construcción de una Webapp
- Git
- Node
  - Bower
  - Http-Server
  - Karma
  - Protractor



Search: Google

Sort by: Alphabetical

LG Axis

Android Powered, Google Maps Navigation, 5 Customizable Home Screens

Nexus S

Nexus S is the next generation of Nexus devices, co-developed by Google and Samsung. The latest Android platform (Gingerbread), paired with a 1 GHz Hummingbird processor and 16GB of memory, makes Nexus S one of the fastest phones on the market. It comes pre-installed with the best of Google apps and enabled with new and popular features like true multi-tasking, Wi-Fi hotspot, Internet Calling, NFC support, and full web browsing. With this device, users will also be the first to receive software upgrades and new Google mobile apps as soon as they become available. For more details, visit http://www.google.com/nexus.

Availability and Networks

Availability
M1,
O2,
Orange,
Singtel,
StarHub,
T-Mobile,
Vodafone

Battery

Type
Lithium Ion (Li-Ion) (1500 mAH)
Talk Time
6 hours
Standby time (max)
428 hours

Storage and Memory

RAM
512MB
Internal Storage
16384MB

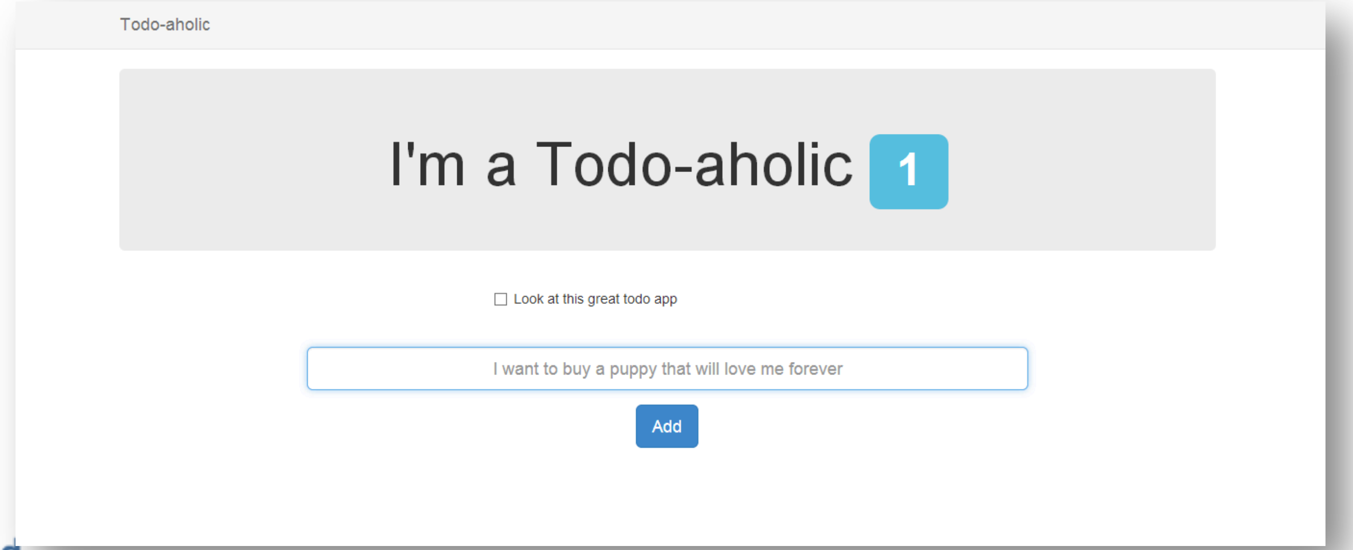
Connectivity

Network Support
Quad-band GSM: 850, 900, 1800, 1900 Tri-band HSPA: 900, 2100, 1700 HSPA type: HSDPA (7.2Mbps) HSUPA (5.76Mbps)
WiFi
802.11 b/g/n
Bluetooth
Bluetooth 2.1
Infrared
✗

Aplicación de recordatorios

- NodeJS + Express + MongoDB + Mongoose
- RESTful Node Api
- Angular+Bootstrap para el *frontend*

https://scotch.io/tutorials/creating-a-single-page-todo-app-with-node-and-angular



Todo-aholic

I'm a Todo-aholic 1

□ Look at this great todo app

I want to buy a puppy that will love me forever

Tarea

Modificar el desarrollo de la tarea de la Práctica 5 para que incluya un *frontend* realizado con AngularJS + Bootstrap

Elabora una breve memoria documentando el desarrollo del frontend

Entrega: hasta el 5 de Mayo a las 23:55h