



# ANGULARJS

by Google



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# DIA 1

Introdução, história das web-apps, AngularJS, Hello World ng









[http://bit.ly/material\\_referencia](http://bit.ly/material_referencia)

**git clone https://github.com/tiagolpadua/cadastro-patrimonio-ng.git**

# Parte I

# Introdução

A green rectangular street sign with a white border and a scalloped edge. The words "The Beginning" are written in large, white, sans-serif capital letters. The sign is mounted on a wooden post. The background is plain white.

The Beginning



EXPLORER



WORKING FILE

www.ts src



NODE-EXPRES

.vscode

node\_mod

SRC

public

routes

styles

style.less

views

app.ts

tsconfig.json

tsd.d.ts

www.ts

tests

ext install

C# 181280

0.3.7 Microsoft

C# for Visual Studio Code (powered by OmniSharp).

README

LICENSE



Python 105661

0.3.7 Don Jayamanne

Linting, Debugging (multi-threaded, remote), Intellisense, auto-completion...

older

```
12    // into css files to the ./public/stylesheets folder
13    gulp.task('less', function () {
14        return gulp.src('./src/styles/**/*.less')
15            .pipe(less({ var path: any
16                paths: [path.join(__dirname, 'less', 'includes')]
17            }))
18            .pipe(gulp.dest('./src/public/stylesheets'));
19    });
20
21
22    // run mocha tests in the ./tests folder
23    gulp.task('test', function () {
24
```



master\*



0



0

Ln 16, Col 24

Spaces: 4

UTF-8

LF

JavaScript



serpro@serpro-VirtualBox: ~/workspace\_js/cadastro-patrimonio-ng

serpro@serpro-VirtualBox: ~/work... X serpro@serpro-VirtualBox: ~/work... X serpro@serpro-VirtualBox: ~/work... X

```
serpro@serpro-VirtualBox:~/workspace_js/cadastro-patrimonio-ng$ node --version  
v4.4.5
```

```
serpro@serpro-VirtualBox:~/workspace_js/cadastro-patrimonio-ng$ npm --version  
2.15.5
```

```
serpro@serpro-VirtualBox:~/workspace_js/cadastro-patrimonio-ng$ npm list -g --depth=0  
/usr/lib  
└── bower@1.7.9  
├── grunt@1.0.1  
├── jscs@3.0.5  
├── jshint@2.9.2  
├── npm@2.15.5  
├── tslint@3.11.0  
├── typescript@1.8.10  
└── typings@1.3.0
```

```
serpro@serpro-VirtualBox:~/workspace_js/cadastro-patrimonio-ng$ █
```

Hello



```
hello.html hello_world
```

```
1  <!DOCTYPE html>
2  <html>
3
4  <head>
5      <title>Hello World!</title>
6      <meta charset="UTF-8">
7      <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
8      <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.6/angular.min.js"></script>
9  </head>
10
11 <body>
12     <h1 id="output"></h1>
13     <input id="input" type="text">
14 </body>
15
16 </html>
```

```
hello.jq.html hello_world
```

```
1  <!DOCTYPE html>
2  <html>
3
4  <head>
5      <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
6  </head>
7
8  <body>
9      <h1 id="output"></h1>
10     <input id="input" type="text">
11     <script>
12         var input = $('#input');
13         var output = $('#output');
14         |
15         input.keyup(updateOutput);
16
17         updateOutput();
18
19         function updateOutput() {
20             console.log('Atualizando!');
21             output.text('Hello ' + input.val());
22         }
23
24     </script>
25 </body>
26
27 </html>
```

```
hello.ng.html hello_world
```

```
1  <!DOCTYPE html>
2  <html ng-app>
3
4  <head>
5      <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.5.6/angular.min.js"></script>
6  </head>
7
8  <body>
9      <h1>Hello {{texto}}</h1>
10     <input type="text" ng-model="texto">
11 </body>
12
13 </html>
```



**ANGULARJS**  
by Google

Data Binding

MVC

Routing

Testing

jqLite

Templates

History

Factories



angularJS is a full-featured  
SPA framework

ViewModel

Controllers

Views

Directives

Services

Dependency Injection

Validation

## Comparar Termos de pesquisa ▾

jsf

Termo de pesquisa

aspx

Termo de pesquisa

angularjs

Termo de pesquisa

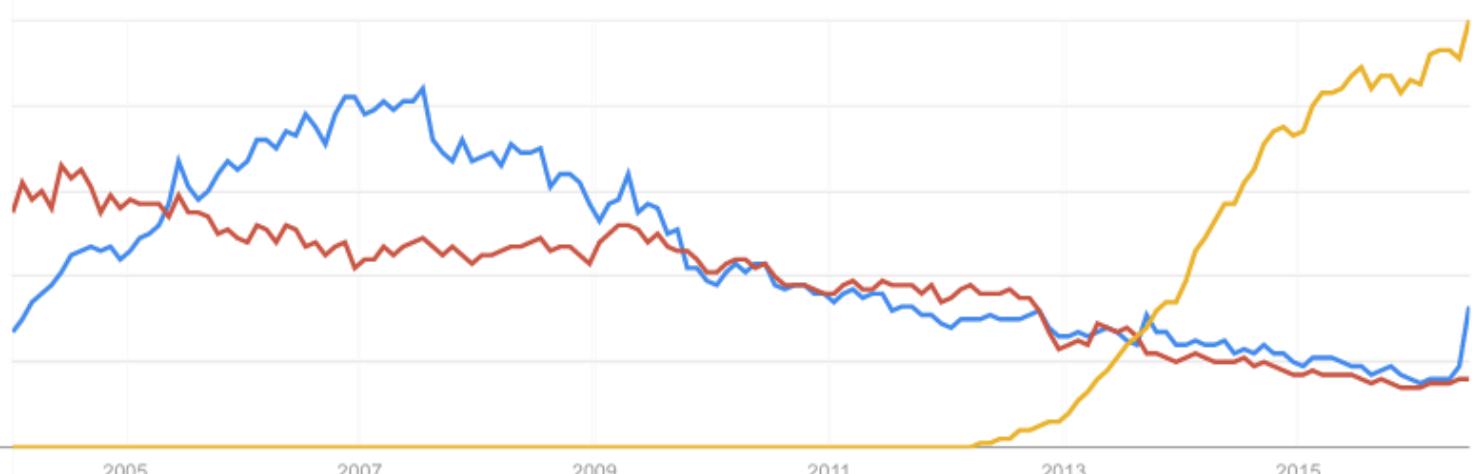
+ Adicionar termo

Interesse com o passar do tempo



Títulos das notícias

Previsão



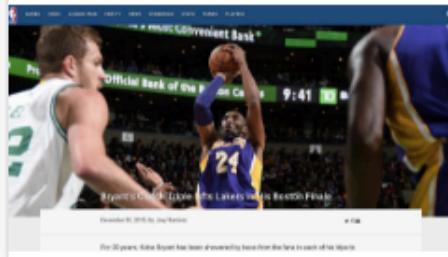
[SEE ALL](#)

## Sports

### NBA.com Stats



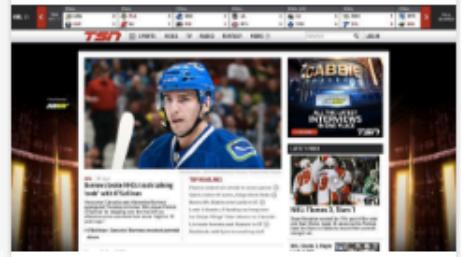
### NBA Global



### Atlantic Coast Conference



### The Sports Network

[SEE ALL](#)

## By Google

### Google Analytics



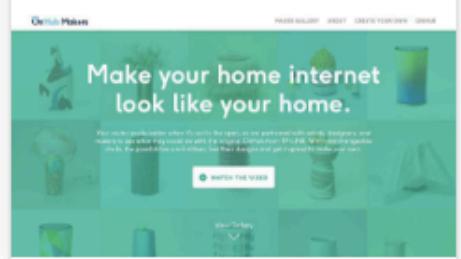
### Android Experiments



### Google One Today

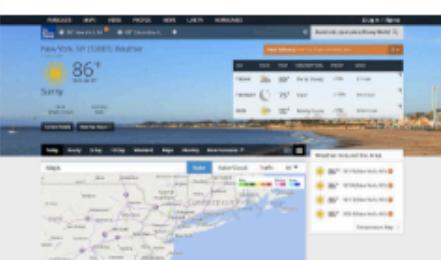


### OnHub Makers

[SEE ALL](#)

## Weather

### The Weather Channel



## Books & Reference

[SEE ALL](#)

The screenshot shows the Apple Developer Search interface. At the top, there's a navigation bar with links for Home, Find Items, Resources, Programs, Support, Member Center, and Help. Below the navigation is a large search bar with the placeholder "Search". Underneath the search bar are two dropdown menus: "Categories" and "Topics". The "Categories" menu is currently set to "All". The "Topics" menu has several items listed, with "Swift" being the selected one. The main content area displays search results for "Swift". There are two entries shown:

- Platform Swift 3.0 Beta**  
A detailed description of the Platform Swift 3.0 Beta, including its version number (3.0.0-beta), release date (2017-04-10), and a link to "View Details".
- Apple Swift**  
A detailed description of the Apple Swift programming language, including its version number (3.0), release date (2015-07-10), and a link to "View Details".

The screenshot shows the Ancestry.com website. At the top, there's a search bar with placeholder text "Search Ancestry.com". Below it is a "Family Tree" section featuring a green leaf icon and a "Get Started on Ancestry" button. The main content area has a large "Find your family story" heading with a "Start Searching" button. To the right, there's a "Discover your family history" sidebar with sections for "Product of the Month" (Family Tree), "AncestryDNA", "Ancestry.com", and "Ancestry.com Research". At the bottom, there are "My Account" and "Log In" buttons.

The image shows the homepage of Britannica.com. At the top, the website's name "Britannica.com" is displayed in a large, white, sans-serif font. Below it is the "ENCYCLOPÆDIA BRITANNICA" logo, which includes a blue circular emblem with a figure and the word "BRITANNICA" above the Latin text "ENCYCLOPÆDIA BRITANNICA". The main navigation menu consists of several tabs: "STORIES", "TOPICS", "GUIDES", "GLOSSARY", and "LISTS". A search bar with the placeholder "Search Britannica..." is positioned to the right of the menu. Below the header, there are several news stories with thumbnail images and titles. One story features a bee and is titled "Bee Population United in Fight Against Pesticides". Another story features a lion and is titled "Africa's Wild Parks Face New Aftermath in Brexit". Other visible stories include "Year of the Monkey", "Ancient Mayanists Use Advanced Geometry", and "U.S. Gains Light-Gene Editing of Human Embryos". The overall design is clean and modern, with a focus on providing access to comprehensive knowledge.

## Transportation

[SEE ALL](#)

The image shows the official Ford website. At the top left is the classic blue oval Ford logo. To its right is a horizontal navigation bar with links: Home, Discover Extras, Ford+Me, Shopping Tools, Dealer, Vehicles, and Contact. Below the navigation is a large, stylized graphic of the word "Ford" in white script, with "FUSION" written vertically above the letter "o". To the right of the text is a white Ford Fusion sedan. The background of the main section is a textured, purple and blue gradient.

The image shows the top portion of the Blue Origin website. It features the "Blue Origin" logo in white on a dark blue background. Below the logo is a navigation bar with links like "HOME", "ABOUT", "MISSIONS", "LAUNCHES", "TECHNOLOGY", "PARTNERS", and "CONTACT". A large, bold headline "SOAR WITH BLUE ORIGIN" is centered, accompanied by a small image of a rocket. A blue play button icon is visible at the bottom.

The image shows the official website for Lyft. At the top, there's a large 'Lyft' logo. Below it is a navigation bar with links like 'Lyft', 'Jobs', 'Careers', and 'Press'. The main visual is a photograph of a man and a woman smiling from inside a car. Overlaid on the image is the text 'Rides in Minutes' and a pink button labeled 'Find a ride now!'. At the bottom, there's a pink bar with the text 'Take the wheel!' and a 'DRIVE WITH LYFT' button.

The screenshot shows the homepage of the Small Unmanned Aircraft System (sUAS) Registration Service. At the top, there's a navigation bar with links for Home, About, Register, Log In, and Help. Below the navigation is a large green header with the text "sUAS Registration". The main content area has a blue background featuring a circular logo with a drone icon and the text "Faastracker.com". Below the logo, the text reads "Welcome to the Small Unmanned Aircraft System (sUAS) Registration Service". A subtext says "You can self-assign your registration number, save the date and register online." There are two buttons at the bottom of this section: "REGISTER YOUR DRONE" and "REGISTER ONLINE". The footer contains a "Footer" link and a "Privacy Policy" link.

## Finance

[SEE ALL](#)

A screenshot of the PayPal Checkout landing page. The top features the PayPal logo and a large, bold title "PayPal Checkout". Below the title is a blurred background image of cherry blossoms. A central text overlay reads "At PayPal, we put people at the center of everything we do." At the bottom, there are three buttons labeled "Get Started", "Continue", and "Log In".

The image shows the Wells Fargo Rewards homepage. At the top, there's a red bar with the text "Wells Fargo Rewards". Below it, a banner features a woman smiling and the text "Welcome to the Wells Fargo Rewards Program". The main content area has a blurred background of people at a social event. A purple button on the right says "Get Started". At the bottom, there's a section titled "Discover exciting features" with a "Find your Rewards" button.

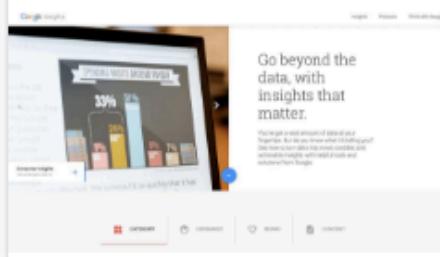
## Business

[SEE ALL](#)

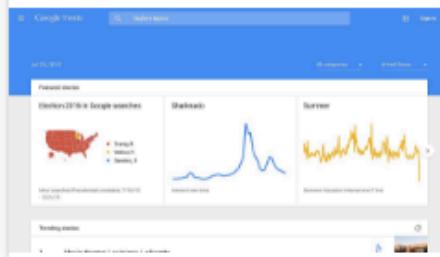
### Staples



### Google Insights



### Google Trends



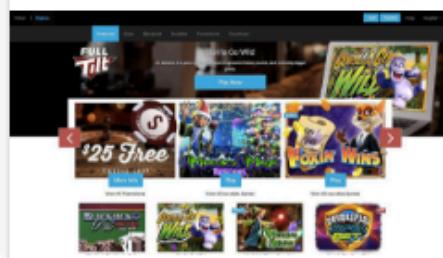
### Google Careers



## Entertainment

[SEE ALL](#)

### Full Tilt



### Google Star Wars



### LEGO.com Star Wars



### Lego



## From the Community

[SEE ALL](#)

### DevChat.tv



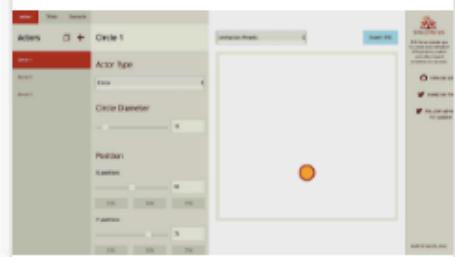
### Che Armstrong



### Provecta POS



### SVG Circus





PRODUTOS E SERVIÇOS

ATENDIMENTO

SOBRE NÓS

BUSCAR

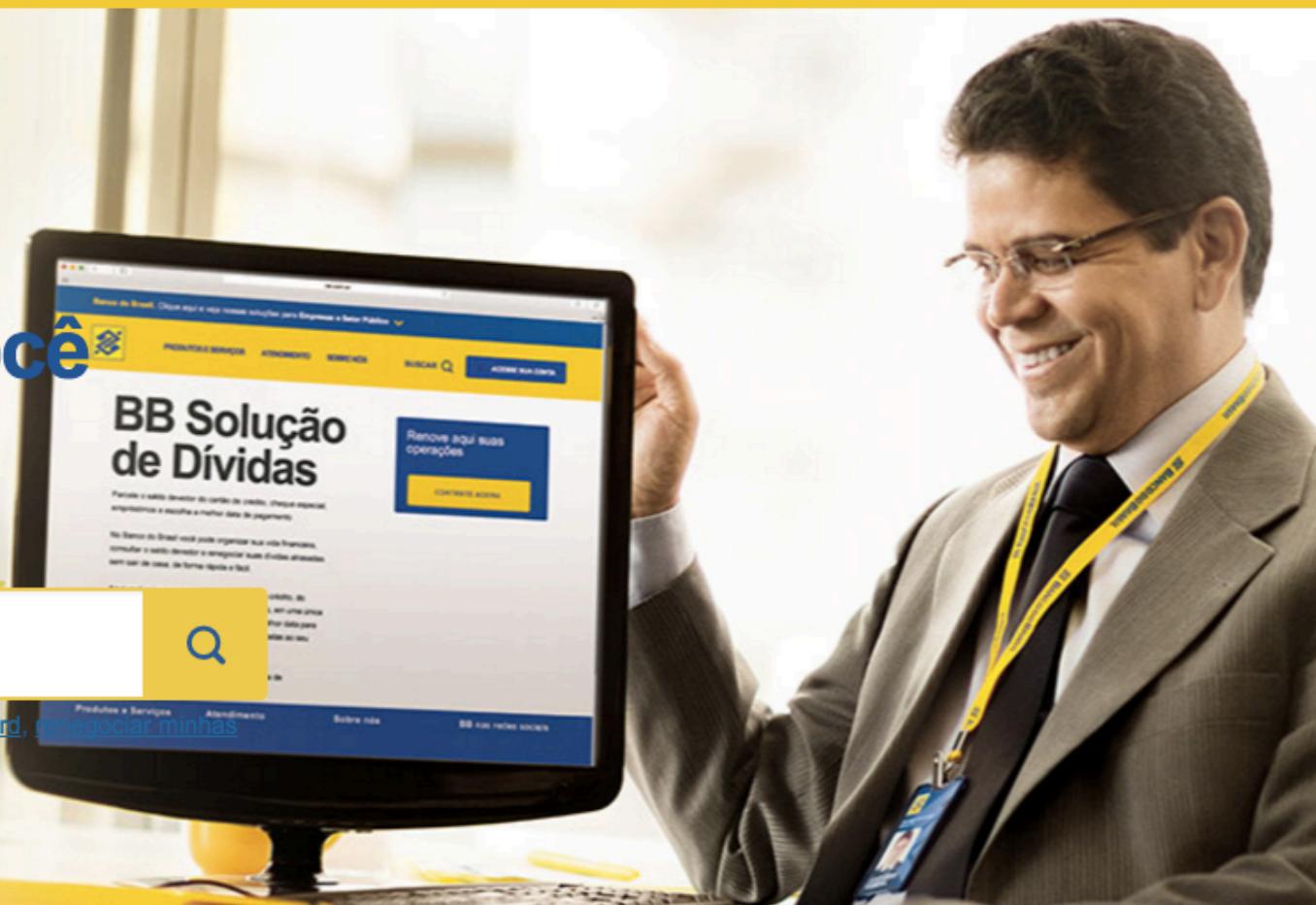
ACESSE SUA CONTA

# Do que você precisa?

Estamos aqui para ajudar



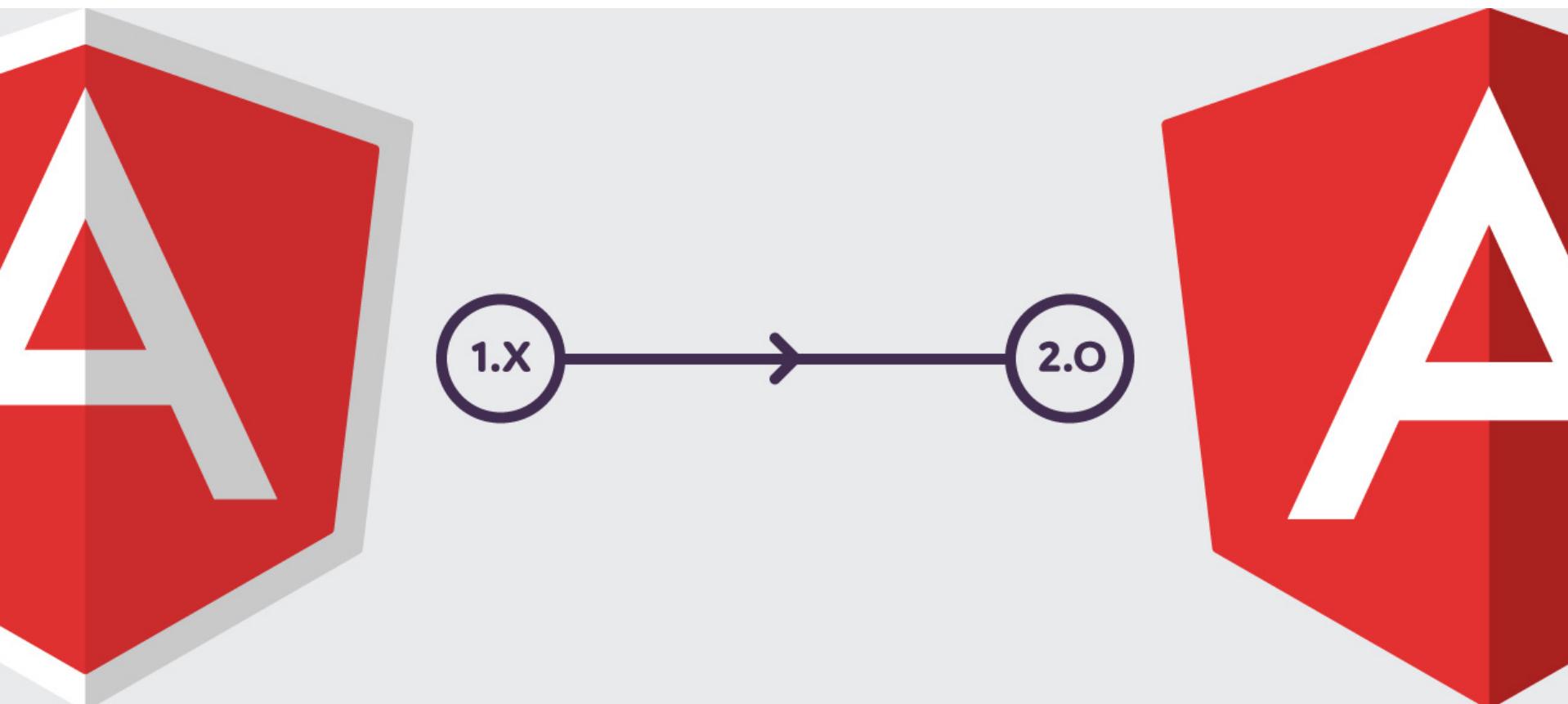
Mais buscados: [carro novo](#), [ouocard](#), [renegociar minhas dívidas](#)



## Solução de dívidas

Gerencie suas finanças sem sair de casa: consulte e renegocie suas dívidas, de forma simples e rápida

**VEJA AQUI**



# DIA 2

JavaScript

# Parte II

# Conhecimentos Básicos

**JS**

Back    Forward

Home

Reload

Images

Open

Print

Find

Stop

Location: about:

What's New! What's Cool! Handbook Net Search Net Directory Software



NETSCAPE

## Netscape Navigator™ Version 2.02

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JAVA COMPATIBLE

Contains Java™ software developed by Sun Microsystems, Inc.  
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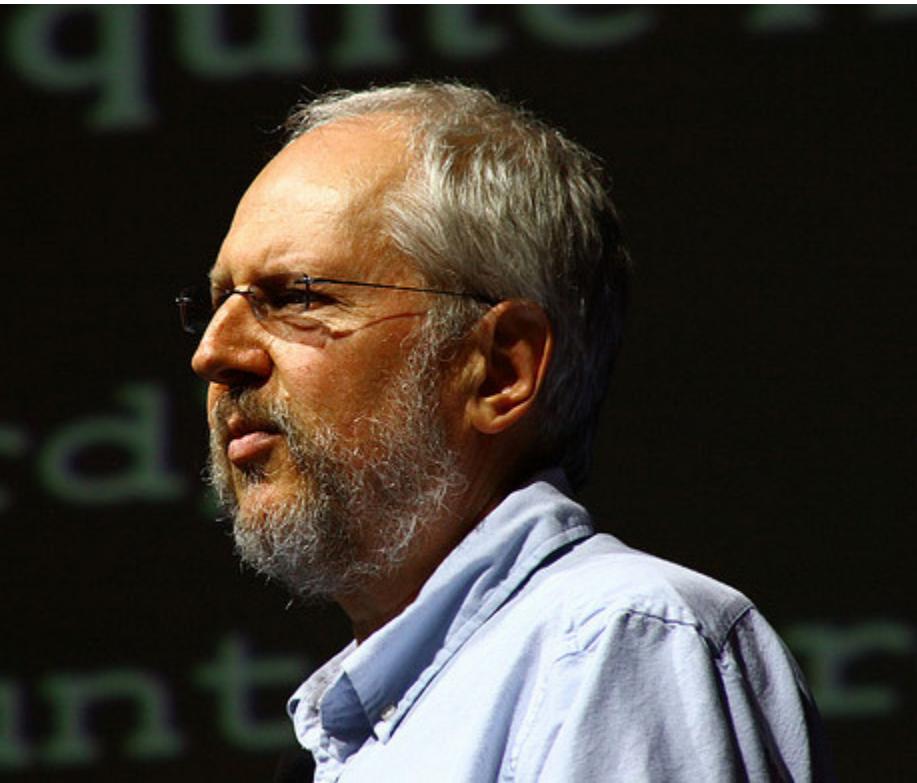


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This version supports International security with RSA Public Key Cryptography, MD2, MD5, RC4.

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# JavaScript: The Good Parts



## Douglas Crockford

Compartilhada publicamente - 10 de abr de 2015

I was trying to explain to someone the difference between Java and JavaScript. "It is like the difference between Star Trek and Star Wars."

Java is Star Trek. It was first, and it is all uniforms, regulations, and red alerts.  
JavaScript is Star Wars. Grit, chaos, and mysticism.

Google

https://www.google.com.br

Tiago

Gmail Imagens

2

Brasil

Pesquisa Google Estou com sorte

Publicidade Negócios Sobre Privacidade Termos Configurações

Elements Console Sources Network Timeline Profiles Resources Security Audits AngularJS

top ▾  Preserve log

Console

Google

https://www.google.com.br

Tiago

Gmail Imagens

2

Brasil

Pesquisa Google Estou com sorte

Publicidade Negócios Sobre Privacidade Termos Configurações

Elements Console Sources Network Timeline Profiles Resources Security Audits AngularJS

top ▾  Preserve log

Console

Escreva um laço de repetição que faça 7 chamadas à função console.log e imprima o triângulo abaixo:

```
#  
##  
###  
####  
#####  
######  
#######
```

```
var a = '';  
while(a.length < 7) {  
    a=a + '#'  
    console.log(a);  
}
```

Escreva uma função min que recebe dois argumentos e retorna o menor:

> console.log(min(0,10));

< 0

> console.log(min(0,-10));

< -10

```
function min(a, b) {  
    return (a < b) ? a : b;  
}
```

```
1 function makePerson(first, last) {  
2     return {  
3         first: first,  
4         last: last  
5     };  
6 }  
7 function personFullName(person) {  
8     return person.first + ' ' + person.last;  
9 }  
10 function personFullNameReversed(person) {  
11     return person.last + ', ' + person.first;  
12 }  
13  
14 s = makePerson("Simon", "Willison");  
15 personFullName(s); // "Simon Willison"  
16 personFullNameReversed(s); // "Willison, Simon"
```

```
1 function makePerson(first, last) {  
2     return {  
3         first: first,  
4         last: last,  
5         fullName: function() {  
6             return this.first + ' ' + this.last;  
7         },  
8         fullNameReversed: function() {  
9             return this.last + ', ' + this.first;  
10        }  
11    };  
12 }  
13  
14 s = makePerson("Simon", "Willison")  
15 s.fullName(); // "Simon Willison"  
16 s.fullNameReversed(); // "Willison, Simon"
```

```
1 | s = makePerson("Simon", "Willison");
2 | var fullName = s.fullName;
3 | fullName(); // undefined undefined
```

```
1 function Person(first, last) {  
2     this.first = first;  
3     this.last = last;  
4     this.fullName = function() {  
5         return this.first + ' ' + this.last;  
6     };  
7     this.fullNameReversed = function() {  
8         return this.last + ', ' + this.first;  
9     };  
10 }  
11 var s = new Person("Simon", "Willison");
```

```
1 | function Person(first, last) {  
2 |   this.first = first;  
3 |   this.last = last;  
4 | }  
5 | Person.prototype.fullName = function fullName() {  
6 |   return this.first + ' ' + this.last;  
7 | };  
8 | Person.prototype.fullNameReversed = function fullNameReversed() {  
9 |   return this.last + ', ' + this.first;  
10|};
```

```
1 var s = "Simon";
2 s.reversed(); // TypeError on line 1: s.reversed is not a function
3
4 String.prototype.reversed = function reversed() {
5     var r = "";
6     for (var i = this.length - 1; i >= 0; i--) {
7         r += this[i];
8     }
9     return r;
10};
11
12 s.reversed(); // nomiS
```

Escreva uma função que recebe um argumento e retorna este argumento

```
<- identity(5)  
-> 5
```

```
function identity(x) {  
  return x;  
}
```

Escreva duas funções que recebem dois argumentos, uma retorna a soma e a outra o produto

-> add(1, 3)

<- 4

-> mul(2, 3)

<- 6

```
function add(x, y) {  
    return x + y;  
}
```

```
function mul(x, y) {  
    return x * y;  
}
```

Escreva uma função que recebe um argumento e retorna uma função que retorna este argumento

-> identityf(5)();

<- 5

```
function identityf(x) {  
  return function() {  
    return identity(x);  
  };  
}
```

Escreva uma função que soma com duas invocações:

-> addf(5)(6)

<- 11

```
function addf(x) {  
  return function(y) {  
    return add(x, y);  
  };  
}
```

Escreva uma função que recebe uma função binária e a aciona após duas invocações:

```
-> var app = applyf(add)
```

```
-> app(5)(6);
```

```
<- 11
```

```
function applyf(f) {  
  return function(x) {  
    return function(y) {  
      return f(x, y);  
    };  
  };  
}
```

Utilizando a função ‘forEach’, imprima cada um dos elementos do array ‘a’ multiplicado por 2:

-> var a = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

```
5  console.log('Multiplicados por 2');
6  a.forEach(function (n) {
7      console.log(n*2);
8  });
```

Utilizando a função ‘map’, crie um novo array ‘quad’ onde cada elemento é o quadrado ( $n \times n$ ) de cada elemento de ‘a’

-> var a = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

<- quad // [ 1, 4, 9, 16, 25, 36, 49, 64, 81, 100 ]

```
10  console.log('Quadrados');
11  var quad = a.map(function (n) {
12      return n*n;
13  });
14  console.log(quad);
```

Utilizando a função ‘filter’, crie um novo array ‘ímpar’ que possui os elementos ímpares de ‘a’:

-> var a = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

<- ímpar // [ 1, 3, 5, 7, 9 ]

```
console.log('Ímpares');
var ímpar = a.filter(function (n) {
    return n % 2 === 1;
});
console.log(ímpar);
```

Utilizando a função ‘reduce’, crie uma variável ‘soma’ que é a soma dos elementos de ‘a’:

-> var a = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

<- soma //55

```
console.log('Soma');
var soma = a.reduce(function (anterior, atual) {
    return anterior + atual;
}, 0);
console.log(soma);
```

Crie um a variável ‘somaPar’ que é a soma dos elementos pares de ‘a’:

-> var a = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]  
<- soma //30

```
console.log('Soma Pares');
var somaPar = a
.filter(function (n) {
    return n % 2 === 0;
})
.reduce(function (anterior, atual) {
    return anterior + atual;
}, 0);
console.log(somaPar);
```

# DIA 3

full-stack JS, controllers

# Cadastro Patrimônio

## Funcionalidades

- Listar os bens cadastrados;
- Filtrar a lista de bens;
- Detalhar um bem cadastrado;
- Cadastrar um novo bem;
- Alterar um bem cadastrado;
- Remover um bem cadastrado;

# Listagem de Bens

Lista dos bens cadastrados de: Barão de Mauá

Busca:

[Novo Bem](#)



Bem ID: I6bjUTXbYhv7V08d



[Palácio dos Buritis, sede do GDF](#)

Tipo: imovel

[Mais Detalhes](#)

[Alterar](#)

[Excluir](#)

# Cadastro de Novo Bem

**URL Foto**

URL Foto

**Descrição**

Descrição

Móvel    Imóvel

Salvar

Cancelar

# Alterando o Bem: l6bjUTXbYhv7V08d

---

**URL Foto**

<http://bit.ly/imgburiti>

**Descrição**

Palácio dos Buritis, sede do GDF

Móvel    Imóvel

**Salvar**

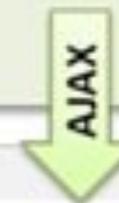
[Cancelar](#)



ANGULARJS

by Google

Client



express<sup>®</sup>

Server



Database



# NodeJS

```
> sudo apt-get purge nodejs npm  
  
> sudo apt-get install -y build-essential  
  
> curl  
-sL https://deb.nodesource.com/setup_4.x  
| sudo -E bash -  
  
> sudo apt-get install -y nodejs  
  
> node --version  
< v4.4.5  
  
> npm --version  
< 2.15.5
```

# Estrutura de Pastas da Aplicação

The screenshot shows the Visual Studio Code (VS Code) interface with a dark theme. The left sidebar (Explorer) lists the project structure:

- WORKING FILES
- CADASTRO-PATRIMONIO-NG
  - client
    - index.html
  - node\_modules
  - server
    - app
      - api
        - index.js
      - routes
        - index.js
    - config
      - database.js
      - express.js
      - data.db
      - server.js
  - test
    - .editorconfig
    - .gitignore
    - .jscsrc
    - .jshintrc
    - LICENSE
  - package.json
  - README.md

```
1  {
2   "version": "0.1.0",
3   "name": "cadastro-patrimonio-ng",
4   "description": "Aplicação Exemplo de Cadastro de Patrimônio em AngularJS",
5   "license": "MIT",
6   "scripts": {
7     "start": "node server/server.js"
8   },
9   "dependencies": {
10    "body-parser": "^1.15.1",
11    "express": "^4.14.0",
12    "nedb": "1.8.0"
13  }
14}
15
```

# Overview do Backend

server.js server

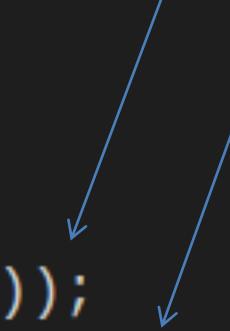
```
1 var http = require('http'),  
2     app = require('./config/express'),  
3     db = require('./config/database');  
4  
5 http.createServer(app).listen(3000, function () {  
6     console.log('Servidor escutando na porta: ' + this.address().port);  
7 });  
8
```

database.js server/config

```
1  var Datastore = require('nedb'),
2      dbName = 'server/data.db',
3      db;
4
5  if (!db) {
6      db = new Datastore({
7          filename: dbName,
8          autoload: true
9      });
10     console.log('Banco ' + dbName + ' pronto para uso');
11 }
12
13 module.exports = db;
```

express.js server/config

```
1 var express = require('express'),  
2     app = express(),  
3     bodyParser = require('body-parser'),  
4     routes = require('../app/routes');  
5  
6 app.use(express.static('./client_gabarito'));  
7 //app.use(express.static('./client_exercicios'));  
8 app.use(bodyParser.urlencoded({extended: true}));  
9 app.use(bodyParser.json());  
10  
11 routes(app);  
12  
13 module.exports = app;
```



index.js server/app/routes

```
1  var api = require('../api'),  
2      path = require('path');  
3  
4  module.exports = function (app) {  
5  
6      app.route('/api/v1/bens')  
7          .post(api.adiciona)  
8          .get(api.lista);  
9  
10     app.route('/api/v1/bens/:bemId')  
11         .delete(api.remove)  
12         .get(api.busca)  
13         .put(api.atualiza);  
14  
15     app.get('/api/v1/tipos', api.listaTipos);  
16     app.get('/api/v1/bens/tipo/:tipoId', api.listaPorTipo);  
17  
18     // habilita o HTML5MODE  
19     app.all('*', function (req, res) {  
20         res.sendFile(path.resolve('client_gabarito/index.html'));  
21     });  
22 };
```

```
1  var db = require('../config/database');
2
3  var api = {};
4
5  api.adiciona = function (req, res) {
6      db.insert(req.body, function (err, newDoc) {
7          if (err) {
8              return console.log(err);
9          }
10         console.log('Adicionado com sucesso: ' + newDoc._id);
11         res.json(newDoc._id);
12     });
13 };
14
15 api.busca = function (req, res) {
16     db.findOne({
17         _id: req.params.bemId
18     }, function (err, doc) {
19         if (err) {
20             return console.log(err);
21         }
22         res.json(doc);
23     });
24 };
```

Uma tela simples para testar o  
servidor

- index.html client\_gabarito

```
1  <!DOCTYPE html>
2  <html lang="pt-br">
3
4  <head>
5    <title>Cadastro de Patrimônio</title>
6    <meta charset="UTF-8">
7  </head>
8
9  <body>
10   <h1>Olá Cadastro de Patrimônio</h1>
11  </body>
12
13 </html>
```

Transformando um html em uma view  
AngularJS

```
index.html client_gabarito
```

```
1  <!DOCTYPE html>
2  | <html lang="pt-br" ng-app="cadpat">1
3
4  | <head>
5    |   <title>Cadastro de Patrimônio</title>
6    |   <meta charset="UTF-8">
7    |   <script src="bower_components/angular/angular.js"></script>4
8    |   <script src="app/app.module.js"></script> 5
9  | </head>
10 |3
11 | <body ng-controller="ListagemController">
12 |   <h1>Olá Cadastro de Patrimônio</h1>
13 |   
    <h1>Olá Cadastro de Patrimônio!</h1>
    
    
39     <h1>Olá Cadastro de Patrimônio!</h1>
40     
41 </body>
```

Um pouco de Bootstrap para melhorar  
a exibição da aplicação

```
<!-- jQuery -->
<script src="bower_components/jquery/dist/jquery.min.js"></script>

<!-- Bootstrap -->
<link href="bower_components/bootstrap/dist/css/bootstrap.min.css" rel="stylesheet">
<script src="bower_components/bootstrap/dist/js/bootstrap.min.js"></script>
```

```
24 <body ng-controller="ListagemController">
25     <div class="container">
26         <div class="page-header">
27             <h1>Listagem de Bens</h1>
28         </div>
29         <div ng-repeat="foto in fotos" class="row">
30             <div class="col-md-3">
31                 <a class="thumbnail">
32                     
33                 </a>
34             </div>
35         </div>
36     </div>
37 </body>
' style="height:300px; margin:0 auto;">
```



```
1 angular.module('cadpat', [])
2   .controller('ListagemController', function ($scope) {
3     $scope.bens = [
4       {
5         descricao: 'Prédio do Banco Central do Brasil – BACEN',
6         urlFoto: 'http://bit.ly/imgbacen'
7       },
8       {
9         descricao: 'Palácio dos Buritis, sede do GDF',
10        urlFoto: 'http://bit.ly/imgburiti'
11      },
12      {
13        descricao: 'Câmara dos deputados do DF',
14        urlFoto: 'http://bit.ly/imgcamara'
15      }
16    ];
17  });

```

```
24  <body ng-controller="ListagemController">
25      <div class="container">
26          <div class="page-header">
27              <h1>Listagem de Bens</h1>
28          </div>
29          <div ng-repeat="bem in bens" class="row">
30              <div class="col-md-3">
31                  <a class="thumbnail">
32                      
33                      <div class="caption">
34                          <h3>{{bem.descricao}}</h3>
35                      </div>
36                  </a>
37              </div>
38          </div>
39      </div>
40  </body>
```

```
24 <body ng-controller="ListagemController">
25     <div class="container">
26         <div class="page-header">
27             <h1>Listagem de Bens</h1>
28         </div>
29         <div class="row">
30             <!-- Barra Lateral -->
31             <div class="col-md-2">
32                 Busca: <input ng-model="criterio">
33             </div>
34
35             <!-- Conteúdo -->
36             <div class="col-md-10">
37                 <div ng-repeat="bem in bens | filter:criterio" class="row">
38                     <div class="col-md-3">
39                         <a class="thumbnail">
40                             
41                             <div class="caption">
42                                 <h3>{{bem.descricao}}</h3>
43                             </div>
44                         </a>
45                     </div>
46                 </div>
47             </div>
48         </div>
49     </div>
50 </body>
```

```
24  <body ng-controller="ListagemController">
25      <div class="container">
26          <div class="page-header">
27              <h1>Listagem de Bens</h1>
28          </div>
29          <div class="row">
30              <!-- Barra Lateral -->
31              <div class="col-md-2">
32                  Busca: <input ng-model="criterio">
33              </div>
34
35              <!-- Conteúdo -->
36              <div class="col-md-10">
37                  <div ng-repeat="bem in bens | filter:criterio" class="row">
38                      <div class="col-md-3">
39                          <a class="thumbnail">
40                              
41                              <div class="caption">
42                                  <h3 ng-bind="bem.descricao"></h3>
43                              </div>
44                          </a>
45                      </div>
46                  </div>
47              </div>
48          </div>
49      </div>
50  </body>
51  |
52 </html>
```

## Listagem de Bens

Busca:



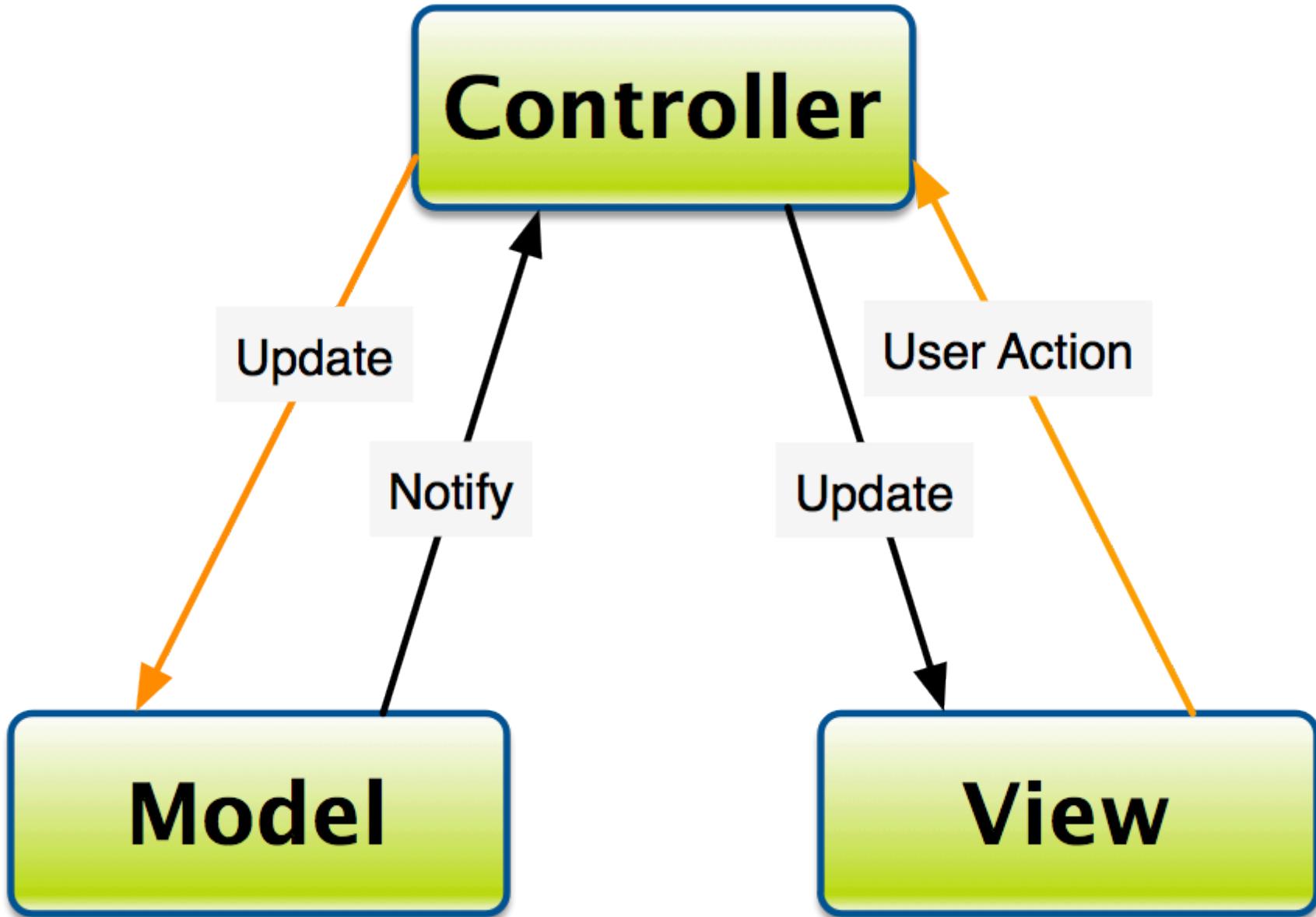
**Prédio do  
Banco Central  
do Brasil -  
BACEN**

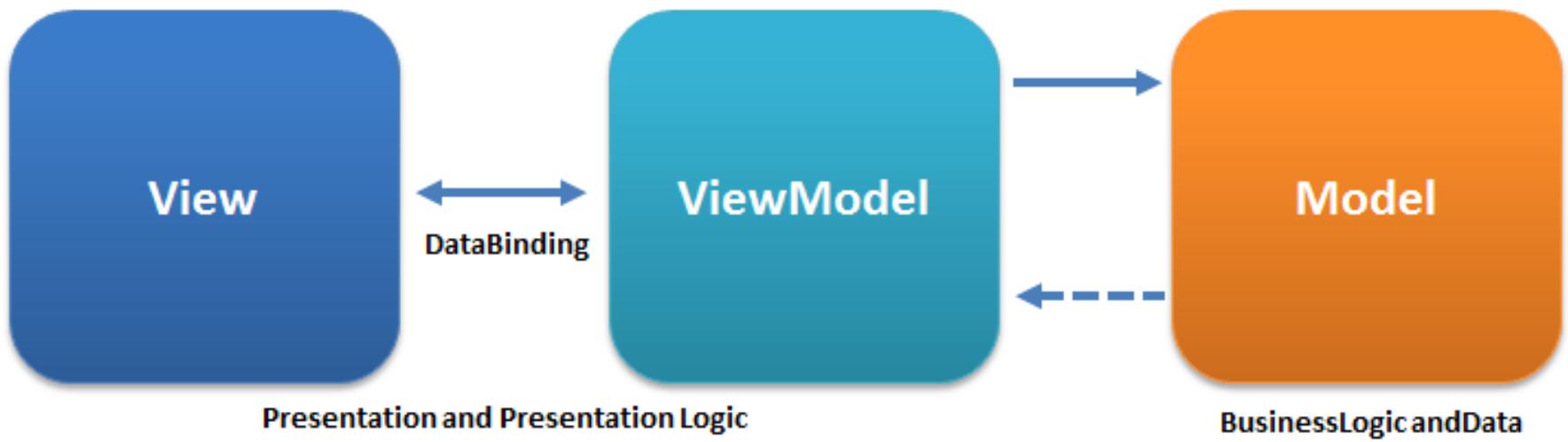


**Palácio dos  
Buritis, sede do  
GDF**



**MVC - MVVM - MVW**





**DIA 4**

# Ferramentas de Debug para o AngularJS

localhost:3000/bens



Busca:

div.row::before 0px x 0px

Novo Bem



Bem ID: l6bjUTXbYhv7V08d

Elements Console Sources Network Timeline Profiles Resources Security Audits AngularJS

07

```
<!-- Conteúdo -->
<div class="col-md-10">
  <div class="row">
    <div class="col-md-6">
      <div ng-mouseenter="pause()" ng-mouseleave="play()" class="carousel ng-isolate-scope" ng-swipe-right="prev()" ng-swipe-left="next()" active="0">
        <div class="carousel-inner" ng-transclude>
          <!-- ngRepeat: bem in vm.bens -->
          <div ng-class="{
            'active': active
          }" class="item text-center ng-scope ng-isolate-scope" ng-transclude ng-repeat="bem in vm.bens" index="$index" style="...</div>
          <!-- end ngRepeat: bem in vm.bens -->
        <div ng-class="{
          'active': active
        }" class="item text-center ng-scope ng-isolate-scope active" ng-transclude ng-repeat="bem in vm.bens" index="$index" style=">
          
        </div>
      </div>
    </div>
  </div>

```

Styles

Filter

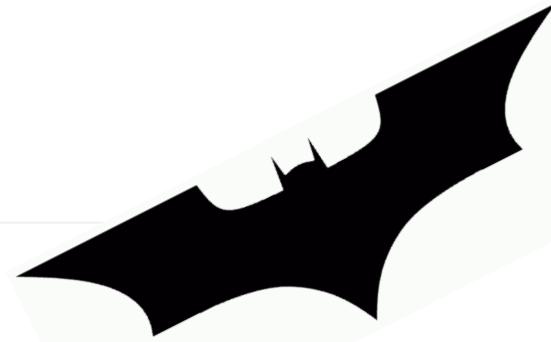
Computed Event Listeners

+ .cls

# Listagem de Bens

Lista dos bens cadastrados de: Chico Buarque

Busca:

Novo Bem

Elements Console Sources Network Timeline Profiles Resources Security Audits AngularJS

AngularJS

Enable

Scopes

Hints

Performance (Alpha)

```
<ng-app="cadpat">
<ng-controller="AlertaController as vm">
<scope.$id=3>
<scope.$id=4>
<scope.$id=5>
<scope.$id=6>
<scope.$id=7>
<scope.$id=8>
<scope.$id=19>
<scope.$id=20>
<ng-repeat="slide in slides | orderBy:indexOfSlide track by $index"
  <scope.$id=92>
<ng-repeat="slide in slides | orderBy:indexOfSlide track by $index"
<scope.$id=21>
<ng-repeat="bem in vm.bens">
  <scope.$id=55>
  <scope.$id=56>
<ng-repeat="bem in vm.bens">
  <scope.$id=57>
  <scope.$id=58>
<ng-repeat="bem in vm.bens">
  <scope.$id=59>
```

Models

- \$id: 84
- slide:
  - slide:
    - \$id: 55
    - index: 0
    - active: false
    - direction: "next"
  - element:
    - 0: Object
    - context:
      - jQuery224098724380246491952:
    - \$scope:
      - \$id: 35
      - bem: Object
      - \$index: 0
      - \$first: true
      - \$last: false
      - \$middle: false
      - \$even: true
      - \$odd: false
    - \$isolateScope:

Seguindo o guia de estilo de código de  
John Papa

## cadastro-patrimonio-ng/client/app/app.module.js

```
1 (function() {
2     'use strict';
3
4     angular.module('cadpat', ['bemControllers']);
5 })();
```

## cadastro-patrimonio-ng/client/app/bem/bem.controllers.js

```
1 (function() {
2     'use strict';
3
4     angular
5         .module('bemControllers', [])
6         .controller('ListagemController', ListagemController);
7
8     ListagemController.$inject = [];
9     function ListagemController() {
10         var vm = this;
11         activate();
12
13         ///////////////////
14         function activate() {
15             vm.bens = [
16                 {
17                     descricao: 'Prédio do Banco Central do Brasil – BACEN',
18                     urlFoto: 'http://bit.ly/imgbacen'
19                 },
20                 {
21                     descricao: 'Palácio dos Buritis, sede do GDF',
22                     urlFoto: 'http://bit.ly/imgburiti'
23                 },
24                 {
25                     descricao: 'Câmara dos deputados do DF',
26                     urlFoto: 'http://bit.ly/imgcamara'
27                 }
28             ];
29         }
30     }
31 })(());
```

```
25 <body ng-controller="ListagemController as vm">
26     <div class="container">
27         <div class="page-header">
28             <h1>Listagem de Bens</h1>
29         </div>
30         <div class="row">
31             <!-- Barra Lateral -->
32             <div class="col-md-2">
33                 Busca: <input ng-model="criterio">
34             </div>
35
36             <!-- Conteúdo -->
37             <div class="col-md-10">
38                 <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
39                     <div class="col-md-3">
40                         <a class="thumbnail">
41                             
43                                 <h3 ng-bind="bem.descricao"></h3>
44                             </div>
45                         </a>
46                     </div>
47                 </div>
48             </div>
49         </div>
50     </div>
51 </body>
```

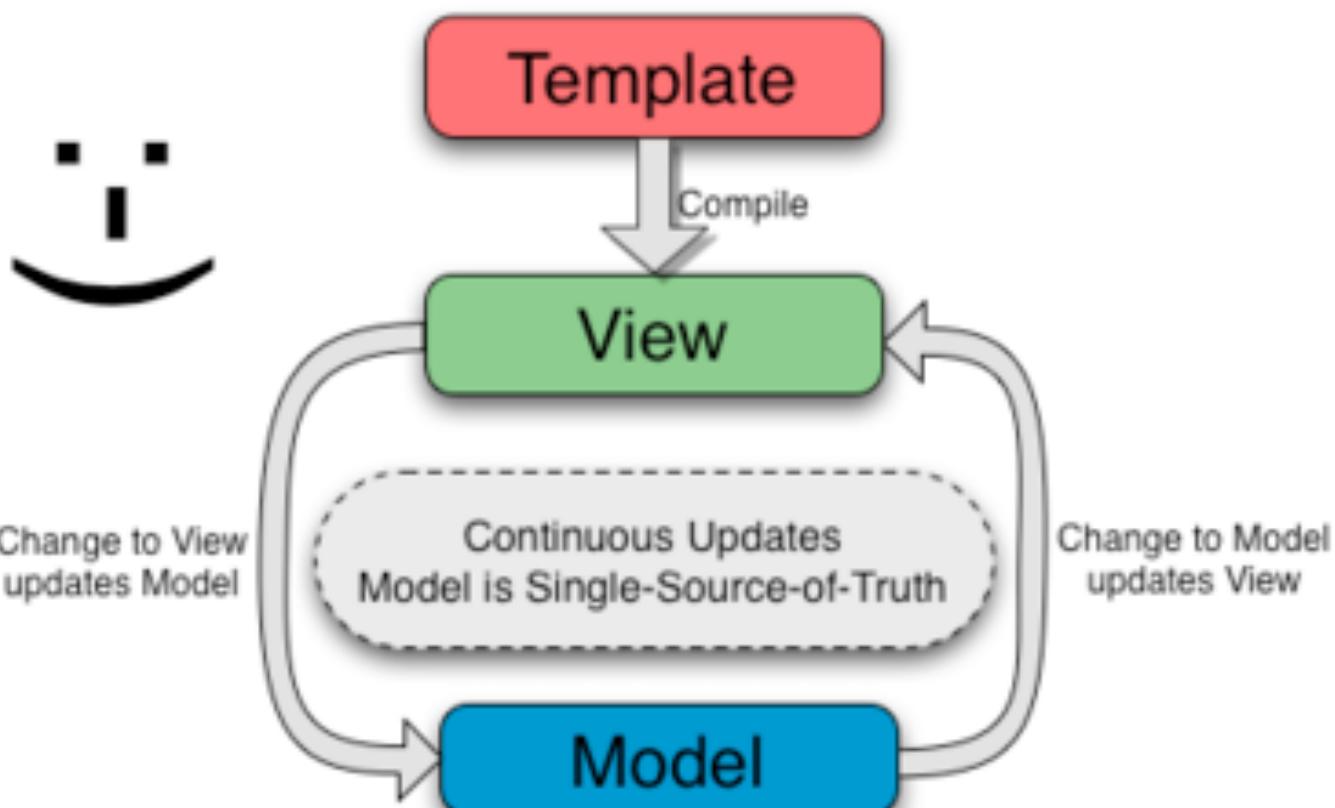
# Buscando dados no servidor

```
8 | ListagemController.$inject = ['$http'];
9 | function ListagemController($http) {
10 |     var vm = this;
11 |
12 |     activate();
13 |
14 |     ///////////////////
15 |
16 |     function activate() {
17 |         vm.bens = $http.get('/api/v1/bens');
18 |     }
19 | }
```

```
8 | ListagemController.$inject = ['$http', '$window'];
9 | function ListagemController($http, $window) {
10|     var vm = this;
11|
12|     activate();
13|
14|     ///////////////////
15|
16|     function activate() {
17|         var promise = $http.get('/api/v1/bens');
18|         promise.then(function(response) {
19|             vm.bens = response.data;
20|         })
21|         .catch(function(error) {
22|             $window.alert(error);
23|         });
24|     }
25| }
26| })();
```

```
8 | ListagemController.$inject = ['$http', '$window'];
9 | function ListagemController($http, $window) {
10 |     var vm = this;
11 |
12 |     activate();
13 |
14 |     ///////////////////
15 |
16 |     function activate() {
17 |         $http.get('/api/v1/bens')
18 |             .success(function(response) {
19 |                 vm.bens = response;
20 |             })
21 |             .error(function(error) {
22 |                 $window.alert(error);
23 |             });
24 |     }
25 | }
```

# Two-Way Data Binding



# DIA 5

TypeScript

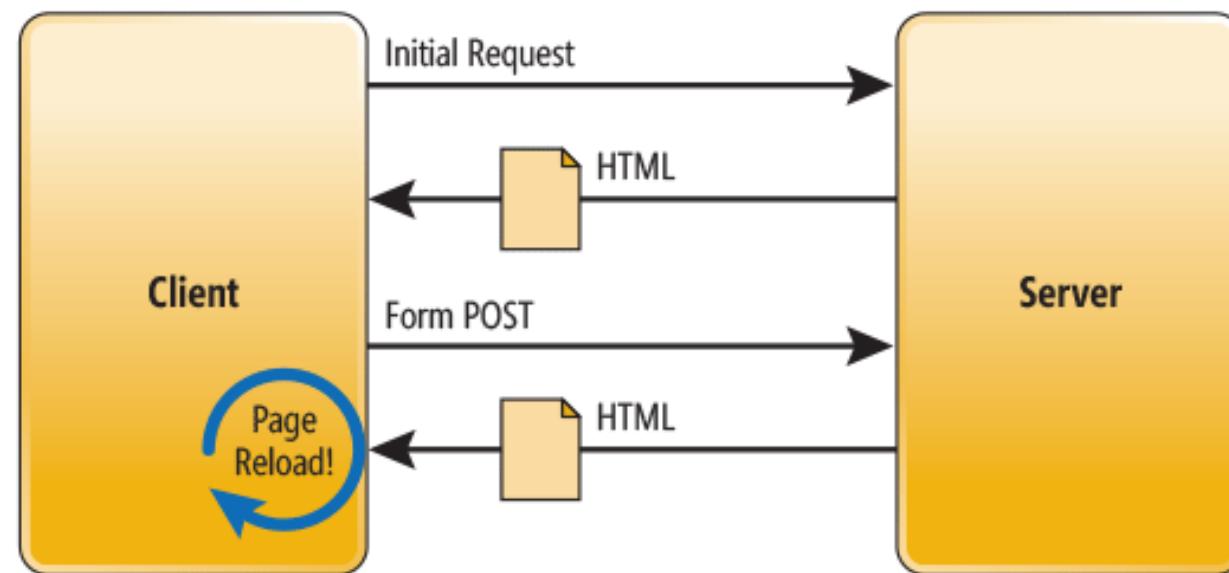
# Parte III

# Módulos, Serviços e

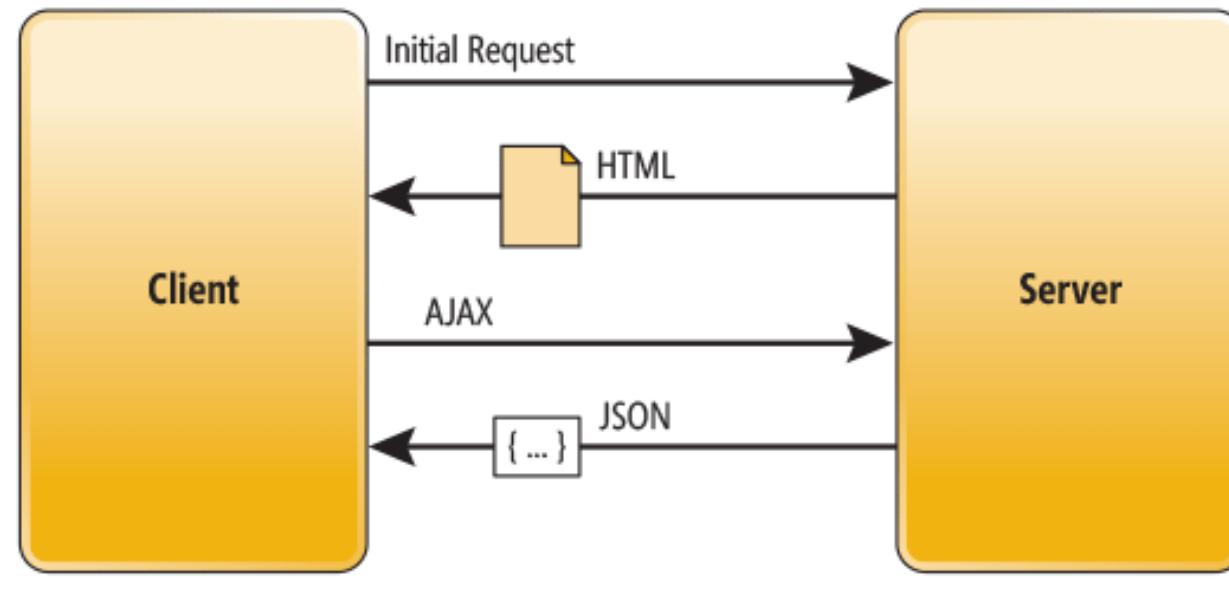
# Roteamento

# O que é uma SPA

## Traditional Page Lifecycle

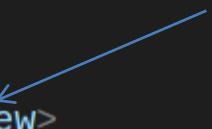


## SPA Lifecycle



# Trabalhando com rotas e partials

```
17    <!-- angular -->
18    <script src="bower_components/angular/angular.js"></script>
19    <script src="bower_components/angular-route/angular-route.js"></script>
20    <script src="app/app.module.js"></script>
21    <script src="app/app.config.js"></script> ←
22    <script src="app/bem/bem.controllers.js"></script>
23    <link href="styles/app.css" rel="stylesheet">
24
25  </head>
26
27  <body>
28    <div class="container" ng-view>
29    </div>
30  </body>
31
32  </html>
```



```
1 (function (angular, undefined) {  
2     'use strict';  
3     angular.module('cadpat', [  
4         'ngRoute', ←  
5         'bemControllers'  
6     ]);  
7 })(angular);
```

```
app.config.js client/app
1  (function (angular, undefined) {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider'];
8      function config($routeProvider) {
9          $routeProvider
10             .when('/bens', {
11                 templateUrl: 'app/bem/bem-lista.html',
12                 controller: 'ListagemController',
13                 controllerAs: 'vm'
14             })
15             .otherwise({
16                 redirectTo: '/bens'
17             });
18     }
19 })(angular);
```

bem-lista.html client/app/bem

```
1 <div class="page-header">
2     <h1>Listagem de Bens</h1>
3 </div>
4 <div class="row">
5     <!-- Barra Lateral -->
6     <div class="col-md-2">
7         Busca: <input ng-model="criterio">
8     </div>
9
10    <!-- Conteúdo -->
11    <div class="col-md-10">
12        <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
13            <div class="col-md-3">
14                <a class="thumbnail">
15                    
16                    <div class="caption">
17                        <h3 ng-bind="bem.descricao"></h3>
18                    </div>
19                </a>
20            </div>
21        </div>
22    </div>
23 </div>
```

# Listagem de Bens

Busca:



Palácio dos  
Buritis, sede do  
GDF



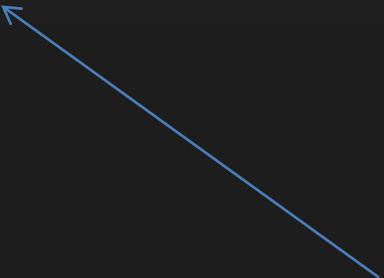
Prédio do Banco  
Central do Brasil  
- BACEN

# Ativando o modo html5

```
... ...
1  (function (angular, undefined) {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider', '$locationProvider'];
8      function config($routeProvider, $locationProvider) {
9          $locationProvider.html5Mode(true);
10
11         $routeProvider
12             .when('/bens', {
13                 templateUrl: 'app/bem/bem-lista.html',
14                 controller: 'ListagemController',
15                 controllerAs: 'vm'
16             })
17             .otherwise({
18                 redirectTo: '/bens'
19             });
20     }
21 })(angular);
```



```
~  
4 <head>  
5     <meta charset="utf-8">  
6     <meta http-equiv="X-UA-Compatible" content="IE=edge">  
7     <meta name="viewport" content="width=device-width, initial-scale=1">  
8     <title>Cadastro de Patrimônio</title>  
9     <base href="/">
```





# Listagem de Bens

Busca:



Palácio dos  
Buritis, sede do  
GDF



# CRUD: Detalhar

```
app.module('cadpat')
```

```
1  (function (angular, undefined) {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider', '$locationProvider'];
8      function config($routeProvider, $locationProvider) {
9          $locationProvider.html5Mode(true);
10
11         $routeProvider
12             .when('/bens', {
13                 templateUrl: 'app/bem/bem-lista.html',
14                 controller: 'ListagemController',
15                 controllerAs: 'vm'
16             })
17             .when('/bens/:id', { -----
18                 templateUrl: 'app/bem/bem-detalhe.html',
19                 controller: 'DetalheController',
20                 controllerAs: 'vm'
21             })
22             .otherwise({
23                 redirectTo: '/bens'
24             });
25     }
26 })(angular);
```

```
1 (function (angular, undefined) {
2     'use strict';
3
4     angular
5         .module('bemControllers', [])
6         .controller('ListagemController', ListagemController)
7         .controller('DetalheController', DetalheController) ←
8
9     DetalheController.$inject = ['$http', '$routeParams', '$window'];
10    function DetalheController($http, $routeParams, $window) {
11        var vm = this;
12
13        activate();
14
15        ///////////////////
16
17        function activate() {
18            $http.get('/api/v1/bens/' + $routeParams.id)
19                .success(function (response) {
20                    vm.bem = response;
21                })
22                .error(function (message) {
23                    $window.alert(message);
24                });
25        }
26    }
},
```

```
1  <div class="page-header">
2      <h1>Detalhamento de Bem: {{vm.bem._id}}</h1>
3  </div>
4  <div class="row">
5      <!-- Conteúdo -->
6      <div class="col-md-12">
7          <div class="row">
8              <div class="col-md-3">
9                  <div class="thumbnail">
10                     
11                     <div class="caption">
12                         <h3>{{vm.bem.descricao}}</h3>
13                     </div>
14                     <a href="/">Voltar</a>
15                 </div>
16             </div>
17         </div>
18     </div>
19 </div>
```

# CRUD: Inclusão

```
1 <div class="page-header">
2     <h1>Listagem de Bens</h1>
3 </div>
4 <div class="row">
5     <!-- Barra Lateral -->
6     <div class="col-md-2">
7         Busca: <input ng-model="criterio">
8         <a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>
9     </div>
10
11    <!-- Conteúdo -->
12    <div class="col-md-10">
13        <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
14            <div class="col-md-3">
15                <a class="thumbnail" href="/bens/{{bem.id}}">
16                    
17                    <div class="caption">
18                        <h3>{{bem.descricao}}</h3>
19                    </div>
20                </a>
21            </div>
22        </div>
23    </div>
24 </div>
```

```
1 <form ng-submit="vm.salvar()">
2     <div class="form-group">
3         <label for="urlFoto">URL Foto</label>
4         <input type="text" ng-model="vm.bem.urlFoto"
5                 class="form-control" id="urlFoto" placeholder="URL Foto">
6     </div>
7     <div class="form-group">
8         <label for="descricao">Descrição</label>
9         <input type="text" ng-model="vm.bem.descricao"
10            class="form-control" id="descricao" placeholder="Descrição">
11     </div>
12     <button type="submit" class="btn btn-primary">Salvar</button>
13     <a href="/bens" class="btn btn-default">Cancelar</a>
14 </form>
```

```
4 angular
5     .module('bemControllers', [])
6     .controller('ListagemController', ListagemController)
7     .controller('DetalheController', DetalheController)
8     .controller('IncluirController', IncluirController);
9
10
11 IncluirController.$inject = ['$http', '$location', '$window'];
12 function IncluirController($http, $location, $window) {
13     var vm = this;
14     vm.bem = {};
15     vm.salvar = salvar;
16
17     ///////////////////
18
19     function salvar() {
20         $http.post('/api/v1/bens', vm.bem)
21             .success(function (response) {
22                 $window.alert('Bem incluído com sucesso');
23                 $location.path('/bens');
24             })
25             .error(function (message) {
26                 $window.alert(message);
27             });
28     }
29 }
```

```
1 (function (angular, undefined) {
2     'use strict';
3
4     angular.module('cadpat')
5         .config(config);
6
7     config.$inject = ['$routeProvider', '$locationProvider'];
8     function config($routeProvider, $locationProvider) {
9         $locationProvider.html5Mode(true);
10
11         $routeProvider
12             .when('/bens', {
13                 templateUrl: 'app/bem/bem-lista.html',
14                 controller: 'ListagemController',
15                 controllerAs: 'vm'
16             })
17             .when('/bens/incluir', { ←
18                 templateUrl: 'app/bem/bem-mantem.html',
19                 controller: 'IncluirController',
20                 controllerAs: 'vm'
21             })
22             .when('/bens/:id', {
23                 templateUrl: 'app/bem/bem-detalhe.html',
24                 controller: 'DetalheController',
25                 controllerAs: 'vm'
26             })
27             .otherwise({
28                 redirectTo: '/bens'
29             });
30     }
}
```

```
1 <form novalidate name="frmbem" ng-submit="vm.salvar()">
2     <div class="form-group">
3         <label for="urlFoto">URL Foto</label>
4         <input type="text" name="urlFoto" ng-model="vm.bem.urlFoto" required
5             class="form-control" id="urlFoto" placeholder="URL Foto">
6         <span ng-show="frmbem.urlFoto.$dirty && frmbem.urlFoto.$error.required"
7             class="form-control alert-danger">
8             URL da foto não informada
9         </span>
10    </div>
11    <div class="form-group">
12        <label for="descricao">Descrição</label>
13        <input type="text" name="descricao" ng-model="vm.bem.descricao" required minlength="10"
14            class="form-control" id="descricao" placeholder="Descrição">
15        <span ng-show="frmbem.descricao.$dirty && frmbem.descricao.$error.required"
16            class="form-control alert-danger">
17            descrição não informada
18        </span>
19        <span ng-show="frmbem.descricao.$dirty && frmbem.descricao.$error.minlength"
20            class="form-control alert-danger">
21            descrição deve ter no mínimo de 10 caracteres
22        </span>
23    </div>
24    <button type="submit" class="btn btn-primary" ng-disabled="frmbem.$invalid">Salvar</button>
25    <a href="/bens" class="btn btn-default">Cancelar</a>
26 </form>
```

# DIA 6

Diretivas

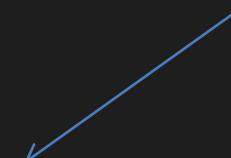
# Acessando o objeto do Fomulário pelo Controller

```
4 <form novalidate name="vm.frmbem" ng-submit="vm.salvar()>
5     <div class="form-group">
6         <label for="urlFoto">URL Foto</label>
7         <input type="text" name="urlFoto" ng-model="vm.bem.urlFoto" required
8             class="form-control" id="urlFoto" placeholder="URL Foto">
9         <span ng-show="vm.frmbem.urlFoto.$dirty && vm.frmbem.urlFoto.$error.required"
10            class="form-control alert-danger">
11                URL da foto não informada
12            </span>
13        </div>
14        <div class="form-group">
15            <label for="descricao">Descrição</label>
16            <input type="text" name="descricao" ng-model="vm.bem.descricao" required minlength="10"
17                class="form-control" id="descricao" placeholder="Descrição">
18            <span ng-show="vm.frmbem.descricao.$dirty && vm.frmbem.descricao.$error.required"
19                class="form-control alert-danger">
20                    Descrição não informada
21                </span>
22            <span ng-show="vm.frmbem.descricao.$dirty && vm.frmbem.descricao.$error.minlength"
23                class="form-control alert-danger">
24                    Descrição deve ter no mínimo de 10 caracteres
25                </span>
26        </div>
27        <button type="submit" class="btn btn-primary" ng-disabled="vm.frmbem.$invalid">Salvar</button>
28        <a href="/bens" class="btn btn-default">Cancelar</a>
29    </form>
```

```
48 //////////////////////////////////////////////////////////////////
49
50     function salvar() {
51         if (vm.frmbem.$valid) {
52             $http.post('/api/v1/bens', vm.bem)
53                 .success(function (response) {
54                     $window.alert('Bem incluído com sucesso');
55                     $location.path('/bens');
56                 })
57                 .error(function (message) {
58                     $window.alert(message);
59                 });
60     }
61 }
62 }
```

# CRUD: Alteração

```
1 <div class="page-header">
2     <h1>Listagem de Bens</h1>
3 </div>
4 <div class="row">
5     <!-- Barra Lateral -->
6     <div class="col-md-2">
7         Busca: <input ng-model="criterio">
8         <a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>
9     </div>
10
11     <!-- Conteúdo -->
12     <div class="col-md-10">
13         <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
14             <div class="col-md-3">
15                 <div class="thumbnail">
16                     <a href="/bens/{{bem.id}}">
17                         
18                         <div class="caption">
19                             <h3>{{bem.descricao}}</h3>
20                         </div>
21                     </a>
22                     <a ng-href="{{'/bens/alterar/' + bem._id}}" 
23                         class="btn btn-primary" role="button">Alterar</a>
24                 </div>
25             </div>
26         </div>
27     </div>
28 </div>
```



```
1 <div ng-show="vm.bem._id" class="page-header">
2     <h1>Alterando o Bem: {{vm.bem._id}}</h1> ←
3 </div>
4 <form novalidate name="frmBem" ng-submit="vm.salvar()">
5     <div class="form-group">
6         <label for="urlFoto">URL Foto</label>
7         <input type="text" name="urlFoto" ng-model="vm.bem.urlFoto" required
8             class="form-control" id="urlFoto" placeholder="URL Foto">
9         <span ng-show="frmBem.urlFoto.$dirty && frmBem.urlFoto.$error.required"
10            class="form-control alert-danger">
11             URL da foto não informada
12         </span>
13     </div>
14     <div class="form-group">
15         <label for="descricao">Descrição</label>
16         <input type="text" name="descricao" ng-model="vm.bem.descricao" required minlength="10"
17             class="form-control" id="descricao" placeholder="Descrição">
18         <span ng-show="frmBem.descricao.$dirty && frmBem.descricao.$error.required"
19            class="form-control alert-danger">
20             descrição não informada
21         </span>
22         <span ng-show="frmBem.descricao.$dirty && frmBem.descricao.$error.minlength"
23            class="form-control alert-danger">
24             descrição deve ter no mínimo de 10 caracteres
25         </span>
26     </div>
27     <button type="submit" class="btn btn-primary" ng-disabled="frmBem.$invalid">Salvar</button>
28     <a href="/bens" class="btn btn-default">Cancelar</a>
29 </form>
```

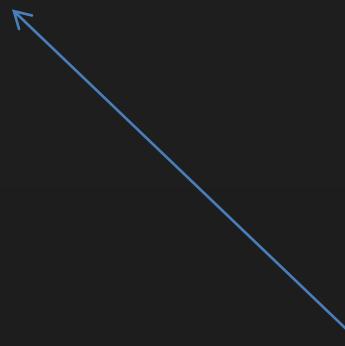
```
7 config.$inject = ['$routeProvider', '$locationProvider'];
8 function config($routeProvider, $locationProvider) {
9     $locationProvider.html5Mode(true);
10
11     $routeProvider
12         .when('/bens', {
13             templateUrl: 'app/bem/bem-lista.html',
14             controller: 'ListagemController',
15             controllerAs: 'vm'
16         })
17         .when('/bens/incluir', {
18             templateUrl: 'app/bem/bem-mantem.html',
19             controller: 'IncluirController',
20             controllerAs: 'vm'
21         })
22         .when('/bens/alterar/:id', { ←
23             templateUrl: 'app/bem/bem-mantem.html',
24             controller: 'AlterarController',
25             controllerAs: 'vm'
26         })
27         .when('/bens/:id', {
28             templateUrl: 'app/bem/bem-detalhe.html',
29             controller: 'DetalheController',
30             controllerAs: 'vm'
31         })
32         .otherwise({
33             redirectTo: '/bens'
34         });
35     }

```

```
4 angular
5     .module('bemControllers', [])
6     .controller('ListagemController', ListagemController)
7     .controller('DetalheController', DetalheController)
8     .controller('IncluirController', IncluirController)
9     .controller('AlterarController', AlterarController);
10
11 AlterarController.$inject = ['$http', '$location', '$routeParams', '$window'];
12 function AlterarController($http, $location, $routeParams, $window) {
13     var vm = this;
14     vm.salvar = salvar;
15
16     activate();
17
18     ///////////////////
19
20     function activate() {
21         $http.get('/api/v1/bens/' + $routeParams.id)
22             .success(function (response) {
23                 vm.bem = response;
24             })
25             .error(function (message) {
26                 $window.alert(message);
27             });
28     }
29
30     function salvar() {
31         $http.put('/api/v1/bens/' + vm.bem._id, vm.bem)
32             .success(function (response) {
33                 $window.alert('Bem alterado com sucesso');
34                 $location.path('/bens');
35             })
36             .error(function (message) {
37                 $window.alert(message);
38             });
39     }
40 }
```

# A última operação do CRUD: Remoção

```
~  
11     <!-- Conteúdo -->  
12     <div class="col-md-10">  
13         <div ng-repeat="bem in vm.bens | filter:criterio" class="row">  
14             <div class="col-md-3">  
15                 <div class="thumbnail">  
16                     <a href="/bens/{{bem.id}}>  
17                           
19                             <h3>{{bem.descricao}}</h3>  
20                         </div>  
21                     </a>  
22                     <a ng-href="{{'/bens/alterar/' + bem._id}}>  
23                         class="btn btn-primary" role="button">Alterar</a>  
24                     <button ng-click="vm.excluir(bem._id)">  
25                         class="btn btn-default" role="button">Excluir</a>  
26                 </div>  
27             </div>  
28         </div>  
29     </div>
```



```
81 ListagemController.$inject = ['$http', '$window'];
82 function ListagemController($http, $window) {
83     var vm = this;
84
85     vm.excluir = excluir;
86
87     activate();
88
89     ///////////////////
90
91     function activate() {
92         $http.get('/api/v1/bens')
93             .success(function (response) {
94                 vm.bens = response;
95             })
96             .error(function (message) {
97                 $window.alert(message);
98             });
99     }
100
101     function excluir(id) {
102         if(!$window.confirm('Confirma a exclusão do bem id: ' + id + '?')) {
103             return;
104         }
105         $http.delete('/api/v1/bens/' + id)
106             .success(function (response) {
107                 $window.alert('Bem excluído com sucesso!');
108                 activate();
109             })
110             .error(function (message) {
111                 $window.alert(message);
112             });
113     }
114 }
```

# Criando um Filtro Customizado

```
1  <div class="page-header">
2      <h1>Listagem de Bens</h1>
3  </div>
4  <div class="row">
5      <!-- Barra Lateral -->
6      <div class="col-md-2">
7          Busca: <input ng-model="criterio">
8          <a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>
9      </div>
10
11     <!-- Conteúdo -->
12     <div class="col-md-10">
13         <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
14             <div class="col-md-3">
15                 <div class="thumbnail">
16                     <a href="/bens/{{bem._id}}">
17                         
18                         <div class="caption">
19                             <h3>{{bem.descricao | maiusculo}}</h3>|-----^
20                         </div>
21                     </a>
22                     <a ng-href="{{'/bens/alterar/' + bem._id}}"
23                         class="btn btn-primary" role="button">Alterar</a>
24                     <button ng-click="vm.excluir(bem._id)"
25                         class="btn btn-default" role="button">Excluir</a>
26                 </div>
27             </div>
28         </div>
29     </div>
30 </div>
```

```
1  (function() {
2    'use strict';
3
4    angular
5      .module('cadpatFilters', [])
6      .filter('maiusculo', maiusculo);
7
8    maiusculo.$inject = [];
9
10   function maiusculo() {
11     return function(input) {
12       return input.toUpperCase();
13     };
14   }
15 })();
```

```
17    <!-- angular.js -->
18    <script src="bower_components/angular/angular.js"></script>
19    <script src="bower_components/angular-animate/angular-animate.js"></script>
20    <script src="bower_components/angular-route/angular-route.js"></script>
21
22    <!-- angular ui-bootstrap -->
23    <link href="bower_components/angular-bootstrap/ui-bootstrap-csp.css" rel="stylesheet">
24    <script src="bower_components/angular-bootstrap/ui-bootstrap-tpls.js"></script>
25
26    <script src="app/app.module.js"></script>
27    <script src="app/app.config.js"></script>
28    <script src="app/app.filters.js"></script> ←
29    <script src="app/bem/bem.controllers.js"></script>
```

```
1  (function (angular, undefined) {  
2      'use strict';  
3      angular.module('cadpat', [  
4          'ngRoute',  
5          'cadpatFilters', ←  
6          'bemControllers'  
7      ]);  
8  })(angular);
```

# Parte IV

# TypeScript

# TypeScript



# TypeScript

- types
- annotations

# ES6

- classes
- modules

# ES5

# Experiências em TS

```
1 function saudar(pessoa) {  
2     return 'Olá, ' + pessoa;  
3 }  
4 var usuario = 'Mundo';  
5 console.log(saudar(usuario));
```

```
1 function saudar(pessoa: string) {  
2     return 'Olá, ' + pessoa;  
3 }  
4  
5 var usuario = 100;  
6  
7 console.log(saudar(usuario));
```

```
1 interface Pessoa {  
2     primeiroNome: string;  
3     ultimoNome: string;  
4 }  
5  
6 function saudar(pessoa: Pessoa) {  
7     return 'Olá, ' + pessoa.primeiroNome + ' ' + pessoa.ultimoNome;  
8 }  
9  
10 var usuario = { primeiroNome: 'José', ultimoNome: 'Silva' };  
11  
12 console.log(saudar(usuario));
```

```
1 class Estudante {  
2     nomeCompleto: string;  
3     constructor(public primeiroNome, public nomeMeio, public ultimoNome) {  
4         this.nomeCompleto = primeiroNome + ' ' + nomeMeio + ' ' + ultimoNome;  
5     }  
6 }  
7  
8 interface Pessoa {  
9     primeiroNome: string;  
10    ultimoNome: string;  
11 }  
12  
13 function saudar(pessoa: Pessoa) {  
14     return 'Olá, ' + pessoa.primeiroNome + ' ' + pessoa.ultimoNome;  
15 }  
16  
17 var usuario = new Estudante('Arthur', 'C.', 'Clark');  
18  
19 console.log(saudar(usuario));
```

```
1 class Pessoa {
2     constructor(public primeiroNome: string, public ultimoNome: string) {
3     }
4 }
5
6 class Estudante extends Pessoa {
7     nomeCompleto: string;
8     constructor(primeiroNome, public nomeMeio: string, ultimoNome) {
9         super(primeiroNome, ultimoNome);
10        this.nomeCompleto = this.primeiroNome + ' ' + nomeMeio +
11            ' ' + this.ultimoNome;
12    }
13 }
14
15 function saudar(pessoa: Pessoa): string {
16     return 'Olá, ' + pessoa.primeiroNome + ' ' + pessoa.ultimoNome;
17 }
18
19 var usuario = new Estudante('Arthur', 'C.', 'Clark');
20
21 console.log(saudar(usuario));
```

```
1 var __extends = (this && this.__extends) || function (d, b) {
2     for (var p in b) if (b.hasOwnProperty(p)) d[p] = b[p];
3     function __() { this.constructor = d; }
4     d.prototype = b === null ? Object.create(b) : (__.prototype = b.prototype, new __());
5 };
6 var Pessoa = (function () {
7     function Pessoa(primeiroNome, ultimoNome) {
8         this.primeiroNome = primeiroNome;
9         this.ultimoNome = ultimoNome;
10    }
11    return Pessoa;
12 })();
13 var Estudante = (function (_super) {
14     __extends(Estudante, _super);
15     function Estudante(primeiroNome, nomeMeio, ultimoNome) {
16         _super.call(this, primeiroNome, ultimoNome);
17         this.nomeMeio = nomeMeio;
18         this.nomeCompleto = this.primeiroNome + ' ' + nomeMeio +
19             ' ' + this.ultimoNome;
20    }
21    return Estudante;
22 })(Pessoa);
23 function saudar(pessoa) {
24     return 'Olá, ' + pessoa.primeiroNome + ' ' + pessoa.ultimoNome;
25 }
26 var usuario = new Estudante('Arthur', 'C.', 'Clark');
27 console.log(saudar(usuario));
```

**WELL**

**THAT ESCALATED QUICKLY**

Como o compilador irá reconhecer o  
AngularJS 1 se ele não foi escrito em  
Typescript?

```
1  {
2    "globalDependencies": {
3      "angular": "registry:dt/angular#1.5.0+20160619025852",
4      "angular-animate": "registry:dt/angular-animate#1.5.0+20160614091201",
5      "angular-mocks": "registry:dt/angular-mocks#1.5.0+20160608104721",
6      "angular-resource": "registry:dt/angular-resource#1.5.0+20160613142217",
7      "angular-route": "registry:dt/angular-route#1.3.0+20160317120654",
8      "bootstrap": "registry:dt/bootstrap#3.3.5+20160619023404",
9      "jquery": "registry:dt/jquery#1.10.0+20160417213236"
10    }
11 }
```

WORKING FILES

- index.html client\_gabarito
- bem.controllers.js client\_gabarito/a...
- express.js server/config
- index.js server/app/routes
- .bowerrc
- bem.controllers.ts client\_gabarito/a...
- bem-manter.html client\_gabarito/a...
- bem-lista.html client\_gabarito/app/b...
- app.module.js client\_gabarito/app

CADASTRO-PATRIMONIO-NG

- client\_exercicios
- client\_gabarito
- exercicios
- node\_modules
- referencias
- server
- test
- typings
  - globals
    - angular
      - index.d.ts
      - typings.json
- angular-animate
  - index.d.ts
  - typings.json
- angular-mocks
  - index.d.ts
  - typings.json
- angular-resource
- angular-route
- bootstrap
- jquery

index.d.ts typings/globals/angular

```
20 declare namespace angular {
21
22     // not directly implemented, but ensures that constructed class implements $get
23     interface IServiceProviderClass {
24         new (...args: any[]): IServiceProvider;
25     }
26
27     interface IServiceProviderFactory {
28         (...args: any[]): IServiceProvider;
29     }
30
31     // All service providers extend this interface
32     interface IServiceProvider {
33         $get: any;
34     }
35
36     interface IAngularBootstrapConfig {
37         strictDi?: boolean;
38         debugInfoEnabled?: boolean;
39     }
40
41     /////////////////////////////////
42     // AngularStatic
43     // see http://docs.angularjs.org/api
44     /////////////////////////////////
45     interface IAngularStatic {
46         bind(context: any, fn: Function, ...args: any[]): Function;
```

# Configurando o compilador TS

tsconfig.json

```
1  {
2      "compilerOptions": {
3          "target": "es5",
4          "watch": true
5      },
6      "exclude": [
7          "node_modules",
8          "client/bower_components"
9      ]
10 }
```

# Migrando nossa aplicação para TS

## app.module.ts

```
1  namespace cadpat {  
2      'use strict';  
3      angular.module('cadpat', [  
4          'ngRoute',  
5          'bemControllers'  
6      ]);  
7  }
```

## app.config.ts

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider', '$locationProvider'];
8      function config($routeProvider: ng.route.IRouteProvider,
9                      $locationProvider: ng.ILocationProvider) {
10         $locationProvider.html5Mode(true);
11
12         $routeProvider
13             .when('/bens', {
14                 templateUrl: 'app_ts/bem/bem-lista.html',
15                 controller: 'ListagemController',
16                 controllerAs: 'vm'
17             })
18             .when('/bens/incluir', {
19                 templateUrl: 'app_ts/bem/bem-mantem.html',
20                 controller: 'IncluirController',
21                 controllerAs: 'vm'
22             })
23             .when('/bens/alterar/:id', {
24                 templateUrl: 'app_ts/bem/bem-mantem.html',
25                 controller: 'AlterarController',
26                 controllerAs: 'vm'
27             })
28             .when('/bens/:id', {
29                 templateUrl: 'app_ts/bem/bem-detalhe.html',
30                 controller: 'DetalheController',
31                 controllerAs: 'vm'
32             })
33             .otherwise({
34                 redirectTo: '/bens'
35             });
36     }
37 }
```

## bem.controllers.js

```
1  namespace cadpat.bem {
2      'use strict';
3
4      interface IBem {
5          _id: string;
6          urlFoto: string;
7          descricao: string;
8      }
9
10     interface IRouteParamsServiceBem extends ng.route.IRouteParamsService {
11         id: string;
12     }
```

## bem.controllers.js

```
88     class ListagemController {
89         static $inject = ['$http', '$window'];
90         bens: IBem[];
91
92         constructor(private $http: ng.IHttpService,
93                     private $window: ng.IWindowService) {
94             this.listar();
95         }
96
97         ///////////////
98
99         listar() {
100             this.$http.get('/api/v1/bens')
101                 .success((response: IBem[]) => {
102                     this.bens = response;
103                 })
104                 .error((message) => {
105                     this.$window.alert(message);
106                 });
107         }
108
109         excluir(id: string) {
110             if (!this.$window.confirm('Confirma a exclusão do bem id: ' + id + '?')) {
111                 return;
112             }
113             this.$http.delete('/api/v1/bens/' + id)
114                 .success((response) => {
115                     this.$window.alert('Bem excluído com sucesso!');
116                     this.listar();
117                 })
118                 .error((message) => {
119                     this.$window.alert(message);
120                 });
121     }
```

## bem.controllers.js

```
57
58     class DetalheController {
59         static $inject = ['$http', '$routeParams', '$window'];
60         bem: IBem;
61
62         /////////////////
63
64         constructor($http: ng.IHttpService,
65             $routeParams: IRouteParamsServiceBem,
66             $window: ng.IWindowService) {
67
68             $http.get('/api/v1/bens/' + $routeParams.id)
69                 .success((response: IBem) => {
70                     this.bem = response;
71                 })
72                 .error((message) => {
73                     $window.alert(message);
74                 });
75         }
76     }
77
78 --
```

## bem.controllers.js

```
45  class IncluirController {
46      static $inject = ['$http', '$location', '$window'];
47      bem: IBem;
48
49      constructor(private $http: ng.IHttpService,
50                  private $location: ng.ILocationService,
51                  private $window: ng.IWindowService) {
52  }
53
54  ///////////////
55
56  salvar() {
57      this.$http.post('/api/v1/bens', this.bem)
58          .success((response) => {
59              this.$window.alert('Bem incluído com sucesso');
60              this.$location.path('/bens');
61          })
62          .error((message) => {
63              this.$window.alert(message);
64          });
65    }
66}
```

## bem.controllers.js

```
14     class AlterarController {
15         static $inject = ['$http', '$location', '$routeParams', '$window'];
16         bem: IBem;
17
18         constructor(private $http: ng.IHttpService,
19             private $location: ng.ILocationService,
20             private $routeParams: IRouteParamsServiceBem,
21             private $window: ng.IWindowService) {
22             $http.get('/api/v1/bens/' + $routeParams.id)
23                 .success((response: IBem) => {
24                     this.bem = response;
25                 })
26                 .error((message) => {
27                     this.$window.alert(message);
28                 });
29     }
30
31     ///////////////
32
33     salvar() {
34         this.$http.put('/api/v1/bens/' + this.bem._id, this.bem)
35             .success((response) => {
36                 this.$window.alert('Bem alterado com sucesso');
37                 this.$location.path('/bens');
38             })
39             .error((message) => {
40                 this.$window.alert(message);
41             });
42 }
```

## bem.controllers.js

```
124     angular
125         .module('bemControllers', [])
126             .controller('ListagemController', ListagemController)
127             .controller('DetalheController', DetalheController)
128             .controller('IncluirController', IncluirController)
129             .controller('AlterarController', AlterarController);
130
131 }
```

# DIA 7

Components

# Parte V

# Diretivas

# AngularJS Directives

## Application

- `ng-app`
- `ng-controller`

## Forms

- `ng-pattern`
- `ng-minlength`
- `ng-maxlength`
- `ng-required`
- `ng-list`
- `ng-true-value`
- `ng-false-value`
- `ng-options`
- `ng-submit`

## Template

- `ng-csp`
- `ng-disabled`
- `ng-hide | show`
- `ng-if`
- `ng-mouse`
- `ng-repeat`
- `ng-switch`
- `ng-transclude`
- `ng-view`
- `ng-include`

## Operation

- `ng-change`
- `ng-checked`
- `ng-click`
- `ng-href`
- `ng-selected`

## Binding

- `ng-bind`
- `ng-model`
- `ng-init`
- `ng-src`
- `ng-style`

```
<my-dir></my-dir>
<span my-dir="exp"></span>
<!-- directive: my-dir exp -->
<span class="my-dir: exp;"></span>
```

bem-lista.html client/app\_ts/bem

```
1  <!--<div class="page-header">
2      <h1>Listagem de Bens</h1>
3  </div>-->
4 | <ac-cabecalho></ac-cabecalho>
5 | <div class="row">
6     <!-- Barra Lateral -->
7     <div class="col-md-2">
8         Busca: <input ng-model="criterio">
9         <a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>
10    </div>
```

---

```
bem-detalhe.html client/app_ts/bem
```

```
1 | <!--<div class="page-header">
2 |     <h1>Detalhamento de Bem: {{vm.bem._id}}</h1>
3 | </div>-->
4 | <ac-cabecalho></ac-cabecalho>
5 | <div class="row">
6 |     <!-- Conteúdo -->
7 |     <div class="col-md-12">
8 |         <div class="row">
```

```
ac-cabecalho.directive.ts client/app_ts/directives
```

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acCabecalho', accCabecalho);
6
7      accCabecalho.$inject = [];
8      function accCabecalho() {
9          let directive: ng.IDirective = {
10              template: `<div class="page-header">
11                  <h1>{{vm.textoCabecalho}}</h1>
12              </div>`
13          };
14
15          return directive;
16      }
17 }
```

```
68     class DetalheController {
69         static $inject = ['$http', '$routeParams', '$window'];
70         bem: IBem;
71         textoCabecalho: string; ←
72
73         ///////////////
74
75         constructor($http: ng.IHttpService,
76                     $routeParams: IRouteParamsServiceBem,
77                     $window: ng.IWindowService) {
78
79             $http.get('/api/v1/bens/' + $routeParams.id)
80                 .success((response: IBem) => {
81                     this.bem = response;
82                     this.textoCabecalho = `Detalhamento de Bem: ${this.bem._id}`; ←
83                 })
84                 .error((message) => {
85                     $window.alert(message);
86                 });
87         }
88     }
89
90     class ListagemController {
91         static $inject = ['$http', '$window'];
92         bens: IBem[];
93         textoCabecalho: string; ←
94
95         constructor(private $http: ng.IHttpService,
96                     private $window: ng.IWindowService) {
97             this.listar();
98             this.textoCabecalho = 'Listagem de Bens'; ←
99         }

```

ac-cabecalho.directive.ts client/app\_ts/directives

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acCabecalho', accCabecalho);
6
7      accCabecalho.$inject = [];
8      function accCabecalho() {
9          let directive: ng.IDirective = {
10              templateUrl: 'app_ts/directives/ac-cabecalho.directive.html'
11          };
12
13          return directive;
14      }
15  }
```



- ac-cabecalho.directive.html client/app\_ts/directives

```
1  <div class="page-header">
2      <h1>{{vm.textoCabecalho}}</h1>
3  </div>
```

---

ac-cabecalho.directive.ts client/app\_ts/directives

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acCabecalho', acCabecalho);
6
7      acCabecalho.$inject = [];
8      function acCabecalho() {
9          let directive: ng.IDirective = {
10              templateUrl: 'app_ts/directives/ac-cabecalho.directive.html',
11              restrict: 'E' ←
12          };
13
14          return directive;
15      }
16 }
```

ac-cabecalho.directive.ts client/app\_ts/directives

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acCabecalho', accCabecalho);
6
7      accCabecalho.$inject = [];
8      function accCabecalho() {
9          let directive: ng.IDirective = {
10              templateUrl: 'app_ts/directives/ac-cabecalho.directive.html',
11              scope: {
12                  texto: '@' ←
13              },
14              restrict: 'E'
15          };
16
17          return directive;
18      }
19  }
```

```
ac-cabecalho.directive.html client/app_ts/directives
```

```
1 <div class="page-header">
2     <h1>{{texto}}</h1>
3 </div>
4 |
```

```
bem-lista.html client/app_ts/bem
```

```
1 <!--<div class="page-header">
2     <h1>Listagem de Bens</h1>
3 </div>-->
4 <ac-cabecalho texto="Listagem de Bens"></ac-cabecalho>
5 <div class="row">
6     <!-- Barra Lateral -->
7     <div class="col-md-2">
```

```
bem-detalhe.html client/app_ts/bem
```

```
1 <!--<div class="page-header">
2     <h1>Detalhamento de Bem: {{vm.bem._id}}</h1>
3 </div>-->
4 <ac-cabecalho texto="Detalhamento de Bem: {{vm.bem._id}}"></ac-cabecalho>
5 <div class="row">
6     <!-- Conteúdo -->
7     <div class="col-md-12">
8         <div class="row">
```

bem-lista.html client/app\_ts/bem

```
1 <ac-cabecalho texto="Listagem de Bens">
2   <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
3 </ac-cabecalho>
4 <div class="row">
5   <!-- Barra Lateral -->
6   <div class="col-md-2">
7     Busca: <input ng-model="criterio">
8     <a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>
9   </div>
```

ac-cabecalho.directive.ts client/app\_ts/directives

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acCabecalho', acCabecalho);
6
7      acCabecalho.$inject = [];
8      function acCabecalho() {
9          let directive: ng.IDirective = {
10              templateUrl: 'app_ts/directives/ac-cabecalho.directive.html',
11              scope: {
12                  texto: '@'
13              },
14              transclude: true, ←
15              restrict: 'E'
16          };
17
18          return directive;
19      }
20  }
```

ac-cabecalho.directive.html client/app\_ts/directives

```
1  <div class="page-header">
2      <h1>{{texto}}</h1>
3      <div ng-transclude></div>
4  </div>
```

```
angular.module('multiSlotTranscludeExample', [])
.directive('pane', function(){
  return {
    restrict: 'E',
    transclude: {
      'title': '?pane-title',
      'body': 'pane-body',
      'footer': '?pane-footer'
    },
    template: '<div style="border: 1px solid black;">' +
      '<div class="title" ng-transclude="title">Fallback Title</div>' +
      '<div ng-transclude="body"></div>' +
      '<div class="footer" ng-transclude="footer">Fallback Footer</div>' +
      '</div>'
  };
})
```

The diagram illustrates the mapping of transclude slots to template elements. Three blue arrows point from the keys in the directive's transclude object to the corresponding attributes in the template string:

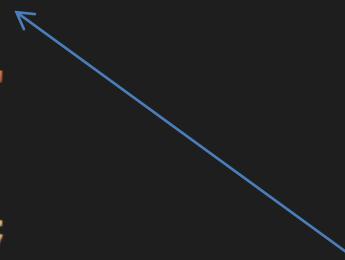
- An arrow points from 'title' to the first 'ng-transclude="title"' attribute.
- An arrow points from 'body' to the second 'ng-transclude="body"' attribute.
- An arrow points from 'footer' to the third 'ng-transclude="footer"' attribute.

```
bem-mantem.html client/app_ts/bem
```

```
1 <ac-cabecalho ng-show="vm.bem._id" texto="Alterando o Bem: {{vm.bem._id}}"></ac-cabecalho>
2 <ac-cabecalho ng-show="!vm.bem._id" texto="Cadastro de Novo Bem"></ac-cabecalho>
3
4 <form novalidate name="frmBem" ng-submit="vm.salvar()">
5     <div class="form-group">
6         <label for="urlFoto">URL Foto</label>
7         <input type="text" name="urlFoto" ng-model="vm.bem.urlFoto" required
8             class="form-control" id="urlFoto" placeholder="URL Foto">
9         <span ng-show="frmBem.urlFoto.$dirty && frmBem.urlFoto.$error.required"
10            class="form-control alert-danger">
11             URL da foto não informada
12         </span>
```

```
ac-bt-atencao.directive.ts client/app_ts/directives
```

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acBtAtencao', acBtAtencao);
6
7      acBtAtencao.$inject = [];
8      function acBtAtencao() {
9          let directive: ng.IDirective = {
10              template: `<button ng-click="acao()"
11                  class="btn btn-danger" role="button">{{texto}}</button>`,
12              scope: {
13                  texto: '@',
14                  acao: '&'
15              },
16              restrict: 'E'
17          };
18
19          return directive;
20      }
21  }
```



## bem-lista.html

```
25
26      <ac-bt-atencao acao="vm.excluir(bem._id)" texto="Excluir">
27      </ac-bt-atencao>
28
29      <!--<button ng-click="vm.excluir(bem._id)"
30          class="btn btn-default" role="button">Excluir</button>-->
31      </div>
32  </div>
33  </div>
34  </div>
35 </div>
```

```
1  <ac-cabecalho texto="Listagem de Bens">
2      <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
3  </ac-cabecalho>
4  <div class="row">
5      <!-- Barra Lateral -->
6      <div class="col-md-2">
7          Busca: <input ng-model="criterio">
8          <!--<a href="/bens/incluir" class="btn btn-primary" role="button">Novo Bem</a>-->
9          <ac-bt-navegar destino="/bens/incluir" texto="Novo Bem">
10         </ac-bt-navegar> ←
11     </div>
12
13     <!-- Conteúdo -->
14     <div class="col-md-10">
15         <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
16             <div class="col-md-3">
17                 <div class="thumbnail">
18                     <a href="/bens/{{bem.id}}">
19                         
20                         <div class="caption">
21                             <h3>{{bem.descricao}}</h3>
22                         </div>
23                     </a>
24
25                     <!--<a ng-href="{{'/bens/alterar/' + bem._id}}" -->
26                         class="btn btn-primary" role="button">Alterar</a>-->
27
28                     <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}" texto="Alterar">
29                     </ac-bt-navegar> →
30
31                     <ac-bt-atencao acao="vm.excluir(bem._id)" texto="Excluir">
32                     </ac-bt-atencao>
33
34     </div>
```

ac-bt-navegar.directive.ts client/app\_ts/directives

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .directive('acBtNavegar', acBtNavegar);
6
7      acBtNavegar.$inject = [];
8      function acBtNavegar() {
9          let directive: ng.IDirective = {
10              template: `<a ng-href="{{destino}}"
11                                class="btn btn-primary" role="button">{{texto}}</a>`,
12              scope: {
13                  texto: '@',
14                  destino: '@'
15              },
16              restrict: 'E'
17          };
18
19          return directive;
20      }
21  }
```

# DIA 8

Angular-UI

```
1  <ac-cabecalho texto="Listagem de Bens">
2      <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
3  </ac-cabecalho>
4  <div class="row">
5      <!-- Barra Lateral -->
6      <barra-lateral></barra-lateral> ←
7      <!--<div class="col-md-2">
8          Busca: <input ng-model="criterio">
9          <ac-bt-navegar destino="/bens/incluir" texto="Novo Bem">
10         </ac-bt-navegar>
11     </div>-->
12
13     <!-- Conteúdo -->
14     <div class="col-md-10">
15         <div ng-repeat="bem in vm.bens | filter:criterio" class="row">
16             <div class="col-md-3">
17                 <div class="thumbnail">
18                     <a href="/bens/{{bem._id}}">
19                         
20                         <div class="caption">
21                             <h3>{{bem.descricao}}</h3>
22                         </div>
23                     </a>
24
25                     <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}" texto="Alterar">
26                     </ac-bt-navegar>
27
28                     <ac-bt-atencao acao="vm.excluir(bem._id)" texto="Excluir">
29                     </ac-bt-atencao>
30                 </div>
31             </div>
32         </div>
33     </div>
```

```
barra-lateral.component.ts client/app_ts/components
```

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .component('barraLateral', {
6              templateUrl: 'app_ts/components/barra-lateral.component.html'
7          });
8  }
9
```

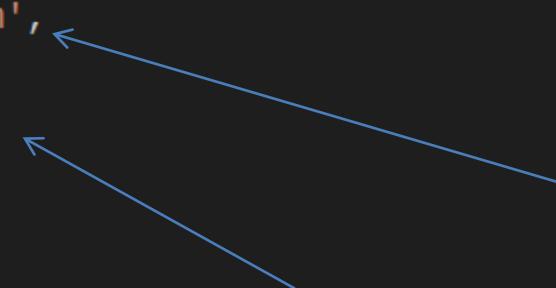
```
barra-lateral.component.html client/app_ts/components
```

```
1  <div class="col-md-2">
2      Busca: <input ng-model="criterio">
3      <ac-bt-navegar destino="/bens/incluir" texto="Novo Bem">
4      </ac-bt-navegar>
5  </div>
```

```
1  <ac-cabecalho texto="Listagem de Bens">
2      <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
3  </ac-cabecalho>
4  <div class="row">
5      <!-- Barra Lateral -->
6      <barra-lateral criterio="vm.criterio"></barra-lateral>
7      <!--<div class="col-md-2">
8          Busca: <input ng-model="criterio">
9          <ac-bt-navegar destino="/bens/incluir" texto="Novo Bem">
10         </ac-bt-navegar>
11     </div>-->
12
13      <!-- Conteúdo -->
14      <div class="col-md-10">
15          <div ng-repeat="bem in vm.bens | filter:vm.criterio" class="row">
16              <div class="col-md-3">
17                  <div class="thumbnail">
18                      <a href="/bens/{{bem.id}}">
19                          
20                          <div class="caption">
21                              <h3>{{bem.descricao}}</h3>
22                          </div>
23                      </a>
24
25                      <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}" texto="Alterar">
26                      </ac-bt-navegar>
27
28                      <ac-bt-atencao acao="vm.excluir(bem._id)" texto="Excluir">
29                      </ac-bt-atencao>
30                  </div>
31              </div>
32          </div>
33      </div>
```

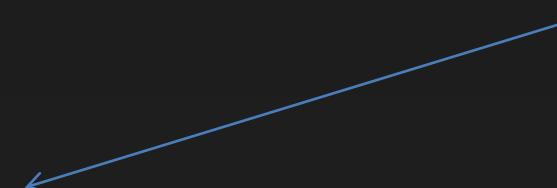
barra-lateral.component.ts client/app\_ts/components

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .component('barraLateral', {
6              templateUrl: 'app_ts/components/barra-lateral.component.html',
7              controllerAs: 'vm',
8              bindings: {
9                  criterio: '='
10             }
11         });
12     }
```



barra-lateral.component.html client/app\_ts/components

```
1  <div class="col-md-2">
2      Busca: <input ng-model="vm.criterio">
3      <ac-bt-navegar destino="/bens/incluir" texto="Novo Bem">
4      </ac-bt-navegar>
5  </div>
```



```
<ac-cabecalho texto="Listagem de Bens">
    <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
</ac-cabecalho>
<div class="row">
    <!-- Barra Lateral -->
    <barra-lateral criterio="vm.criterio"></barra-lateral>

    <!-- Conteúdo -->
    <lista-bens bens="vm.bens" criterio="vm.criterio" on-excluir="vm.excluir(bemId)">
    </lista-bens>
    <!--<div class="col-md-10">
        <div ng-repeat="bem in vm.bens | filter:vm.criterio" class="row">
            <div class="col-md-3">
                <div class="thumbnail">
                    <a href="/bens/{{bem._id}}">
                        
                        <div class="caption">
                            <h3>{{bem.descricao}}</h3>
                        </div>
                    </a>

                    <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}" texto="Alterar">
                    </ac-bt-navegar>

                    <ac-bt-atencao acao="vm.excluir(bem._id)" texto="Excluir">
                    </ac-bt-atencao>
                </div>
            </div>
        </div>
    </div>
</div>
```

lista-bens.component.ts client/app\_ts/components

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .component('listaBens', {
6              templateUrl: 'app_ts/components/lista-bens.component.html',
7              controllerAs: 'vm',
8              bindings: {
9                  bens: '=',
10                 criterio: '=',
11                 onExcluir: '&'
12             }
13         });
14 }
```

lista-bens.component.html client/app\_ts/components

```
1  <div class="col-md-10">
2      <div ng-repeat="bem in vm.bens | filter:vm.criterio" class="row">
3          <div class="col-md-3">
4              <div class="thumbnail">
5                  <a href="/bens/{{bem.id}}">
6                      
7                      <div class="caption">
8                          <h3>{{bem.descricao}}</h3>
9                      </div>
10                 </a>
11
12                 <ac-bt-navegar
13                     destino="{{'/bens/alterar/' + bem._id}}"
14                     texto="Alterar">
15                 </ac-bt-navegar>
16
17                 <ac-bt-atencao
18                     acao="vm.onExcluir({ bemId: bem._id })"
19                     texto="Excluir">
20                     </ac-bt-atencao>
21                 </div>
22             </div>
23         </div>
24     </div>
```

```
bem-lista.html client/app_ts/bem
```

```
1 | <home-bens></home-bens>
2 | <!--<ac-cabecalho texto="Listagem de Bens">
3 |     <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
4 | </ac-cabecalho>
5 | <div class="row">-->
6 |     <!-- Barra Lateral -->
7 |     <!--<barra-lateral criterio="vm.criterio"></barra-lateral>-->
8 |
9 |     <!-- Conteúdo -->
10 |    <!--<lista-bens bens="vm.bens" criterio="vm.criterio" on-excluir="vm.excluir(ben)">
11 |        </lista-bens>
12 |    </div>-->
13 |
```

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider', '$locationProvider'];
8      function config($routeProvider: ng.route.IRouteProvider,
9                      $locationProvider: ng.ILocationProvider) {
10         $locationProvider.html5Mode(true);
11
12         $routeProvider
13             .when('/bens', {
14                 templateUrl: 'app_ts/bem/bem-lista.html' ←
15                 // controller: 'ListagemController',
16                 // controllerAs: 'vm'
17             })
18             .when('/bens/incluir', {
19                 templateUrl: 'app_ts/bem/bem-mantem.html',
20                 controller: 'IncluirController',
21                 controllerAs: 'vm'
22             })
23             .when('/bens/alterar/:id', {
24                 templateUrl: 'app_ts/bem/bem-mantem.html',
25                 controller: 'AlterarController',
26                 controllerAs: 'vm'
27             })
28             .when('/bens/:id', {
29                 templateUrl: 'app_ts/bem/bem-detalhe.html',
```

home-bens.component.html client/app\_ts/components

```
1  <ac-cabecalho texto="Listagem de Bens">
2      <h3>Lista dos bens cadastrados de: {{vm.nomePessoa}}</h3>
3  </ac-cabecalho>
4  <div class="row">
5      <!-- Barra Lateral -->
6      <barra-lateral criterio="vm.criterio"></barra-lateral>
7
8      <!-- Conteúdo -->
9      <lista-bens bens="vm.bens"
10         criterio="vm.criterio"
11         on-excluir="vm.excluir(bemId)">
12     </lista-bens>
13 </div>
```

home-bens.component.ts client/app\_ts/components

```
1  namespace cadpat {
2      'use strict';
3
4      class HomeBensController {
5          static $inject = ['$http', '$window'];
6          bens: cadpat.bem.IBem[];
7          nomePessoa: string;
8
9          constructor(private $http: ng.IHttpService,
10             private $window: ng.IWindowService) {
11                 this.nomePessoa = 'Chico Buarque';
12                 this.listar();
13             }
14
15             ///////////////
16
17             listar() {
18                 this.$http.get('/api/v1/bens')
19                     .success((response: cadpat.bem.IBem[]) => {
20                         this.bens = response;
21                     })
22                     .error((message) => {
23                         this.$window.alert(message);
24                     });
25             }
}
```

```
26
27     excluir(id: string) {
28         if (!this.$window.confirm('Confirma a exclusão do bem id: ' + id + '?')) {
29             return;
30         }
31         this.$http.delete('/api/v1/bens/' + id)
32             .success((response) => {
33                 this.$window.alert('Bem excluído com sucesso!');
34                 this.listar();
35             })
36             .error((message) => {
37                 this.$window.alert(message);
38             });
39     }
40 }
41
42 angular.module('cadpat')
43     .component('homeBens', {
44         templateUrl: 'app_ts/components/home-bens.component.html',
45         controller: HomeBensController,
46         controllerAs: 'vm',
47     });
48 }
```

app.config.ts client/app\_ts

```
1  namespace cadpat {
2      'use strict';
3
4      angular.module('cadpat')
5          .config(config);
6
7      config.$inject = ['$routeProvider', '$locationProvider'];
8      function config($routeProvider: ng.route.IRouteProvider,
9                      $locationProvider: ng.ILocationProvider) {
10         $locationProvider.html5Mode(true);
11
12         $routeProvider
13             .when('/bens', {
14                 template: '<home-bens></home-bens>' ←
15             })
16             .when('/bens/incluir', {
17                 templateUrl: 'app_ts/bem/bem-mantem.html',
18                 controller: 'IncluirController',
19                 controllerAs: 'vm'
20             })
21             .when('/bens/alterar/:id', {
22                 templateUrl: 'app_ts/bem/bem-mantem.html',
23                 controller: 'AlterarController',
24                 controllerAs: 'vm'
25             })
26     }
27 }
```

# DIA 9

Integração

# Parte VI

## UI Bootstrap – AngularUI



# AngularUI

The companion suite(s) to the [AngularJS](#) framework.

# UI Bootstrap

Bootstrap components written in pure AngularJS by the  
AngularUI Team

index.html client

```
1  <!DOCTYPE html>
2  <html lang="pt-br" ng-app="cadpat">
3
4  <head>
5      <meta charset="utf-8">
6      <meta http-equiv="X-UA-Compatible" content="IE=edge">
7      <meta name="viewport" content="width=device-width, initial-scale=1">
8      <title>Cadastro de Patrimônio</title>
9      <base href="/">
10
11     <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
12     <script src="bower_components/jquery/dist/jquery.min.js"></script>
13
14     <!-- Bootstrap -->
15     <link href="bower_components/bootstrap/dist/css/bootstrap.min.css" rel="stylesheet">
16     <script src="bower_components/bootstrap/dist/js/bootstrap.min.js"></script>
17
18     <!-- angular.js -->
19     <script src="bower_components/angular/angular.js"></script>
20     <script src="bower_components/angular-route/angular-route.js"></script>
21
22     <!-- angular ui-bootstrap -->
23     <link href="bower_components/angular-bootstrap/ui-bootstrap-csp.css" rel="stylesheet">
24     <script src="bower_components/angular-bootstrap/ui-bootstrap.js"></script>
25     <script src="bower_components/angular-bootstrap/ui-bootstrap-tpls.js"></script>
```

```
app.module.ts client/app_ts
```

```
1  namespace cadpat {  
2      'use strict';  
3      angular.module('cadpat', [  
4          'ngRoute',  
5          'ui.bootstrap', ←  
6          'bemControllers'  
7      ]);  
8  }  
9
```

# Accordion (ui.bootstrap.accordion)

[Toggle last panel](#)

[Enable / Disable first panel](#)

Open only one at a time

## Static Header, initially expanded

This content is straight in the template.

## Dynamic Group Header - 1

## Dynamic Group Header - 2

Dynamic Group Body - 2

Dynamic Body Content

Custom template

Custom template with custom header template



Delete account

Log In / Logout / Log Out



lista-bens.component.html client/app\_ts/components

```
1  <div class="col-md-10">
2    <uib-accordion>
3      <uib-accordion-group heading="Bem ID: {{bem._id}}"
4        ng-repeat="bem in vm.bens | filter:vm.criterio">
5        <div class="col-md-12">
6          <a href="/bens/{{bem.id}}">
7            
8            <div class="caption">
9              <h3>{{bem.descricao}}</h3>
10             </div>
11           </a>
12
13           <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}"
14             texto="Alterar">
15           </ac-bt-navegar>
16
17           <ac-bt-atencao acao="vm.onExcluir({ bemId: bem._id })">
18             | texto="Excluir">
19             </ac-bt-atencao>
20           </div>
21         </uib-accordion-group>
22       </uib-accordion>
23     </div>
```

# Alert (ui.bootstrap.alert)

---

Oh snap! Change a few things up and try submitting again.



Well done! You successfully read this important alert message.



A happy alert!

Add Alert

```
index.html client
41  </head>
42
43  <body>
44      <div class="container">
45          <div ng-controller="AlertaController as vm">
46              <uib-alert ng-repeat="alerta in vm.alertas"
47                  type="{{alerta.tipo}}"
48                  close="vm.fecharAlerta($index)">
49                  {{alerta.msg}}
50              </uib-alert>
51          </div>
52          <div ng-view></div>
53      </div>
54  </body>
55
56  </html>
```

- alerta.controllers.ts client/app\_ts/alerta

```
1  namespace cadpat.alerta {
2      'use strict';
3
4      class AlertaController {
5          static $inject = ['alertaService'];
6          alertas: cadpat.alerta.IAlerta[];
7
8          constructor(private alertaService: cadpat.alerta.AlertService) {
9              this.alertas = alertaService.alertas;
10         }
11
12         /////////////////
13
14         fecharAlerta(index) {
15             this.alertas.splice(index, 1);
16         }
17     }
18
19     angular
20         .module('alertaControllers', [])
21         .controller('AlertaController', AlertaController);
22 }
```

```
► alerta.services.ts client/app_ts/alerta

1  namespace cadpat.alerta {
2      'use strict';
3
4      export type TipoAlerta = 'danger' | 'success';
5
6      export interface IAlerta {
7          tipo: TipoAlerta;
8          msg: string;
9      }
10
11     export class AlertaService {
12         alertas: IAlerta[] = [];
13     }
14
15     angular
16         .module('alertaServices', [])
17         .service('alertaService', AlertaService);
18
19 }
```

```
14 class AlterarController {
15     static $inject = ['$http', '$location', '$routeParams', 'alertaService'];
16     bem: IBem;
17
18     constructor(private $http: ng.IHttpService,
19                 private $location: ng.ILocationService,
20                 private $routeParams: IRouteParamsServiceBem, ↓
21                 private alertaService: cadpat.alerta.AlertService) {
22         $http.get('/api/v1/bens/' + $routeParams.id)
23             .success((response: IBem) => {
24                 this.bem = response;
25             })
26             .error((message) => {
27                 this.alertaService.alertas.push({tipo: 'danger', msg: message });
28             });
29     }
30
31     ///////////////
32
33     salvar() {
34         this.$http.put('/api/v1/bens/' + this.bem._id, this.bem)
35             .success((response) => {
36                 →this.alertaService.alertas.push({tipo: 'success', msg: 'Bem alterado com sucesso' });
37                 this.$location.path('/bens');
38             })
39             .error((message) => {
40                 →this.alertaService.alertas.push({tipo: 'danger', msg: message });
41             });
42     }
43 }
```

# Buttons (ui.bootstrap.buttons)

---

## Single toggle

```
0
```

Single Toggle

## Checkbox

```
Model: {"left":false,"middle":false,"right":false}
```

```
Results: []
```

Left    Middle    Right

## Radio & Uncheckable Radio

```
Right
```

Left    Middle    Right

Left    Middle    Right

Toggle uncheckable

```
bem-mantem.html client/app_ts/bem
16      
18      <span ng-show="frmbem.descricao.$dirty && frmbem.descricao.$error.required">
19          class="form-control alert-danger">
20              Descrição não informada
21      </span>
22      <span ng-show="frmbem.descricao.$dirty && frmbem.descricao.$error.minlength">
23          class="form-control alert-danger">
24              Descrição deve ter no mínimo de 10 caracteres
25      </span>
26      <div class="btn-group">
27          <label class="btn btn-primary" ng-model="vm.bem.tipo" uib-btn-radio="...
28              'movel'">Móvel</label>
29          <label class="btn btn-primary" ng-model="vm.bem.tipo" uib-btn-radio="...
30              'imovel'">Imóvel</label>
31      </div>
32  </div>
33  <button type="submit" class="btn btn-primary" ng-disabled="frmbem.$invalid">Sal...
34  <a href="/bens" class="btn btn-default">Cancelar</a>
35 </form>
```

```
lista-bens.component.html client/app_ts/components
```

```
1  <div class="col-md-10">
2    <uib-accordion>
3      <uib-accordion-group heading="Bem ID: {{bem._id}}"
4        ng-repeat="bem in vm.bens | filter:vm.criterio">
5        <div class="col-md-12">
6          <a href="/bens/{{bem.id}}">
7            
8            <div class="caption">
9              <h3>{{bem.descricao}}</h3>
10             <h4>Tipo: {{bem.tipo}}</h4> ←
11           </div>
12         </a>
13
14         <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}"
15           texto="Alterar">
16         </ac-bt-navegar>
17
18         <ac-bt-atencao acao="vm.onExcluir({ bemId: bem._id })">
19           texto="Excluir">
20         </ac-bt-atencao>
21       </div>
22     </uib-accordion-group>
23   </uib-accordion>
24 </div>
```

# Carousel (ui.bootstrap.carousel)



[Add Slide](#)

[Randomize slides](#)

Disable Slide Looping

Interval, in milliseconds:

5000

Enter a negative number or 0 to stop the interval.

lista-bens.component.html client/app\_ts/components

```
1  <div class="col-md-10">
2    <div class="row">
3      <div class="col-md-6">
4        <uib-carousel active="0">
5          <uib-slide ng-repeat="bem in vm.bens" index="$index">
6            
8            <div class="carousel-caption">
9              <p>{{bem.descricao}}</p>
10         </div>
11       </uib-slide>
12     </uib-carousel>
13   </div>
14 </div>
```

# Collapse (ui.bootstrap.collapse)

---

`Toggle collapse`

---

Some content

---

```
15  <div class="row">
16    <uib-accordion>
17      <uib-accordion-group heading="Bem ID: {{bem._id}}"
18        ng-repeat="bem in vm.bens | filter:vm.criterio">
19        <div class="col-md-12">
20          <a href="/bens/{{bem._id}}">
21            
22            <div class="caption">
23              <h3>{{bem.descricao}}</h3>
24              <h4>Tipo: {{bem.tipo}}</h4>
25            </div>
26          </a>
27
28          <button type="button" class="btn btn-default"           ↴
29            ng-click="exibirDetalhes = !exibirDetalhes">
30              {{exibirDetalhes? 'Menos' : 'Mais'}} Detalhes
31            </button>
32            <hr>
33            <div uib-collapse="!exibirDetalhes">
34              <div class="well well-lg">Lorem ipsum dolor sit amet, consectetur adipiscing elit.
35                Donec auctor sed metus in dignissim. In hac habitasse platea dictumst. Etiam
36                commodo lacus ligula, ut posuere mauris egestas non. Donec elementum tristique
37                lacinia. Ut semper, tortor et tristique vulputate, elit enim tristique velit,
38                quis dapibus augue odio ut elit. Vivamus semper sed tortor tempor viverra.
39                Maecenas tempor congue lectus pharetra convallis. Nullam vitae dictum justo,
40                eget accumsan erat. Praesent lacinia at elit quis hendrerit. In eu viverra sapien.</div>
41            </div>
42
43            <ac-bt-navegar destino="{{'/bens/alterar/' + bem._id}}"
44              texto="Alterar">
45            </ac-bt-navegar>
```

**DIA 10**

# RESTful API

GET PUT POST DELETE

http://

**Verbo HTTP**

**Seguro**

**Idempotente**

**GET**



**POST**



**PUT**



**DELETE**



**GET****PUT****POST****DELETE**

## **http://acme.com.br/api/v1/clientes**

<b>Lista os clientes</b>	<b>Substitui</b> toda a lista de clientes por outra lista de clientes	<b>Cria</b> um novo cliente, geralmente a URI do cliente criado retorna como resposta	<b>Apaga</b> toda a lista de clientes
--------------------------	---	---	---------------------------------------

## **http://acme.com.br/api/v1/clientes/42876234**

<b>Retorna</b> o cliente identificado pelo código 42876234	<b>Substitui</b> o cliente 42876234 com os dados enviados no request	Geralmente não utilizado	<b>Apaga</b> o cliente 42876234
--	--	--------------------------	---------------------------------

**Correto:**

**/ufs**

**/clientes**

**/propostas**

**Errado:**

**/produto**

**/cadastrarCliente**

**/propostas/excluir**



{JSON}

```
{ "users": [
    {
        "firstName": "Ray",
        "lastName": "Villalobos",
        "joined": {
            "month": "January",
            "day": 12,
            "year": 2012
        }
    },
    {
        "firstName": "John",
        "lastName": "Jones",
        "joined": {
            "month": "April",
            "day": 28,
            "year": 2010
        }
    }
]} 
```

# Parte VII

# Projeto Prático

# Referências

## JavaScript

[https://developer.mozilla.org/en-US/docs/Web/JavaScript/A\\_re-introduction\\_to\\_JavaScript](https://developer.mozilla.org/en-US/docs/Web/JavaScript/A_re-introduction_to_JavaScript)  
[http://eloquentjavascript.net/Eloquent\\_JavaScript.pdf](http://eloquentjavascript.net/Eloquent_JavaScript.pdf)

## TypeScript

<https://www.typescriptlang.org/>  
<https://www.gitbook.com/download/pdf/book/basarat/typescript>

## AngularJS

<https://angularjs.org/>  
<http://www.angularjsbook.com/angular-basics/chapters/introduction/>  
<https://github.com/johnpapa/angular-styleguide>

## Bootstrap

<http://getbootstrap.com/>  
<https://angular-ui.github.io/bootstrap/>

## NodeJS

<https://nodejs.org/en/>

## Visual Studio Code

<https://code.visualstudio.com/>

# Visual Studio Code

CTRL + P

```
> ext install html-snippets  
> ext install jshint  
> ext install jscs  
> ext install tslint  
> ext install Angular1
```