AngularJS basics

Introduction to the popular framework

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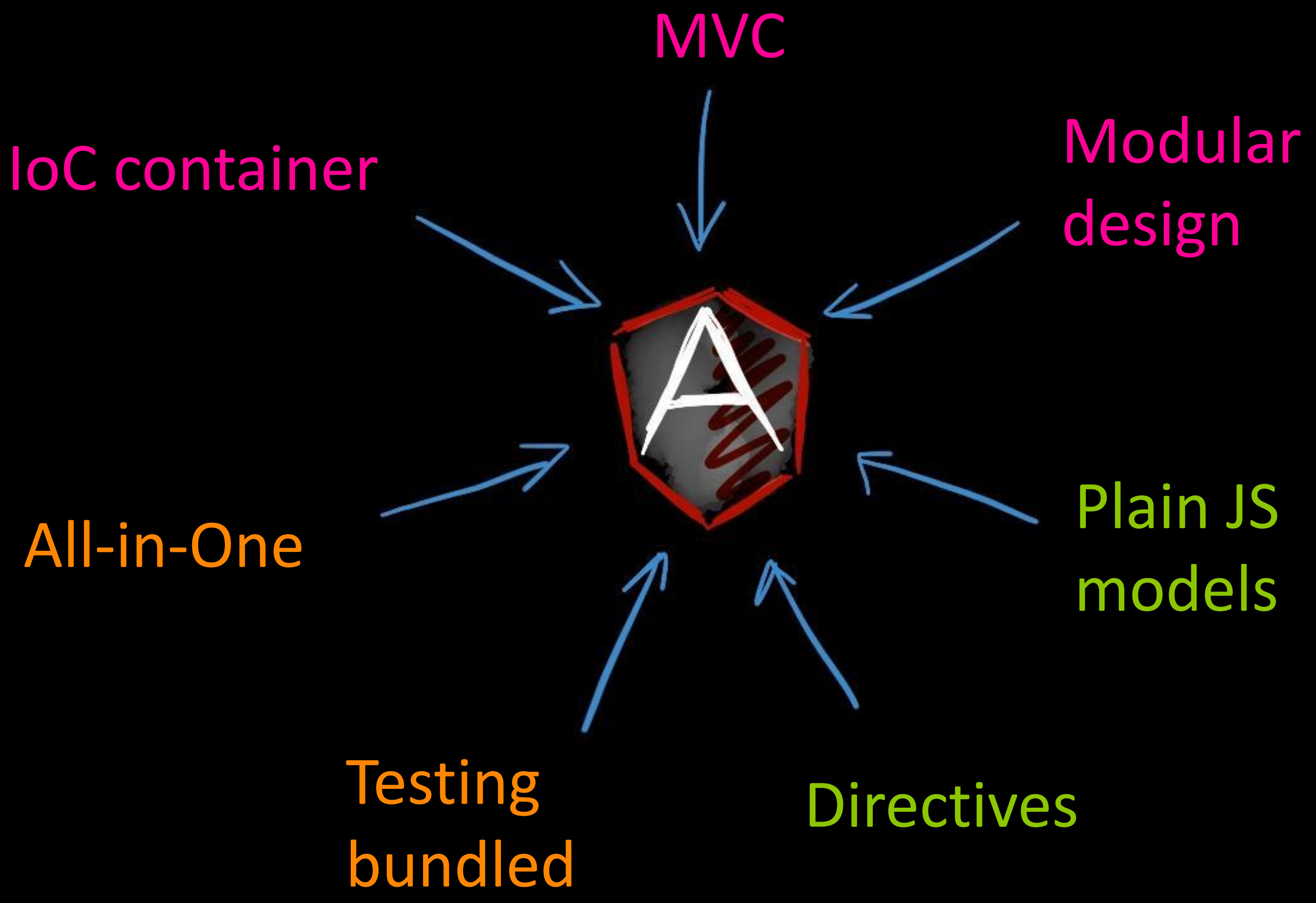
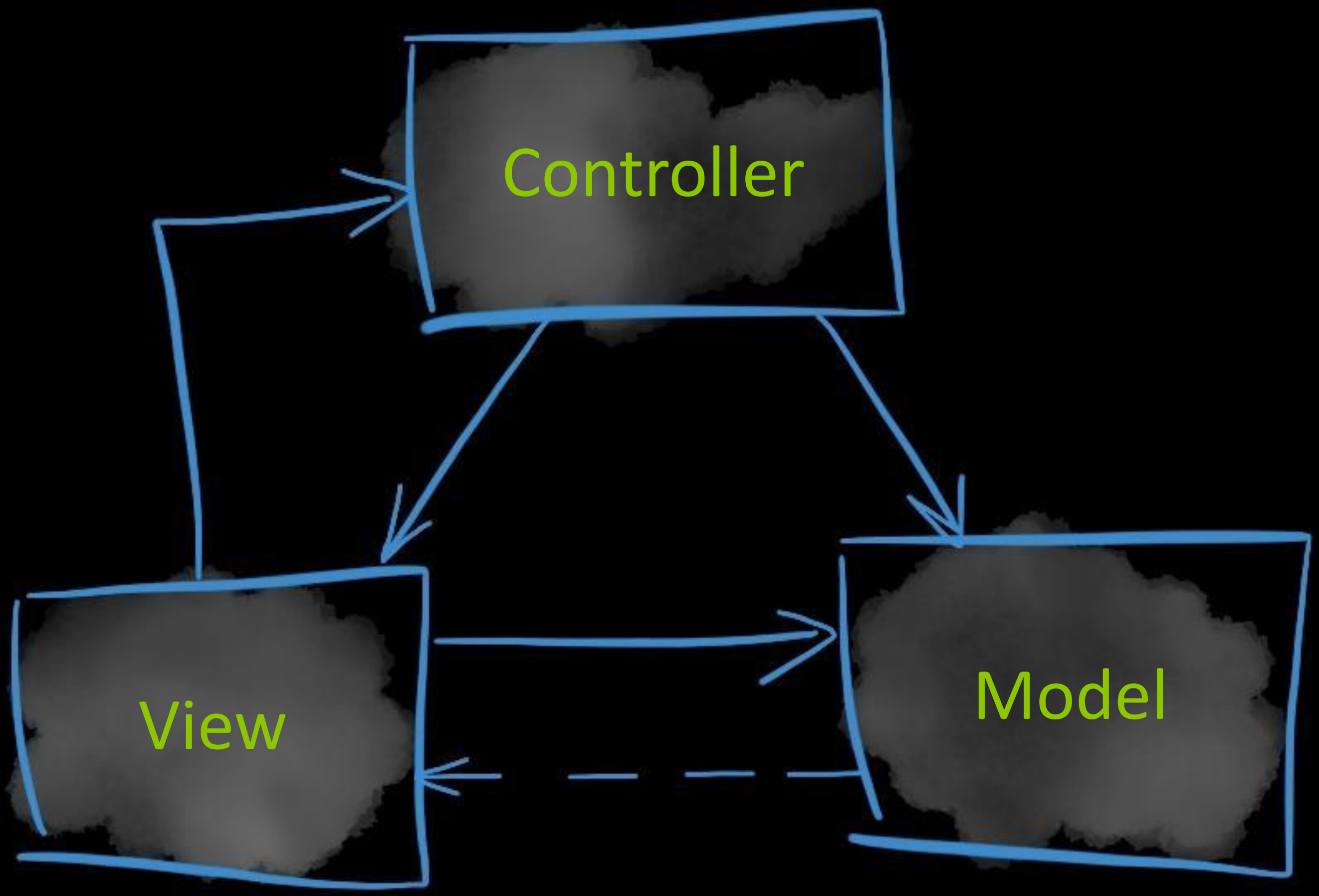
Agenda

1. Intro
2. View and controller
3. Directives and filters
4. Two-way data binding
5. Event handlers
6. RESTful services and $resource
7. Yeoman
8. Routing

Intro

Framework overview. Main concepts. Bootstrapping.


MVC
IoC container
Modular design
All-in-One
Plain JS models
Testing bundled
Directives

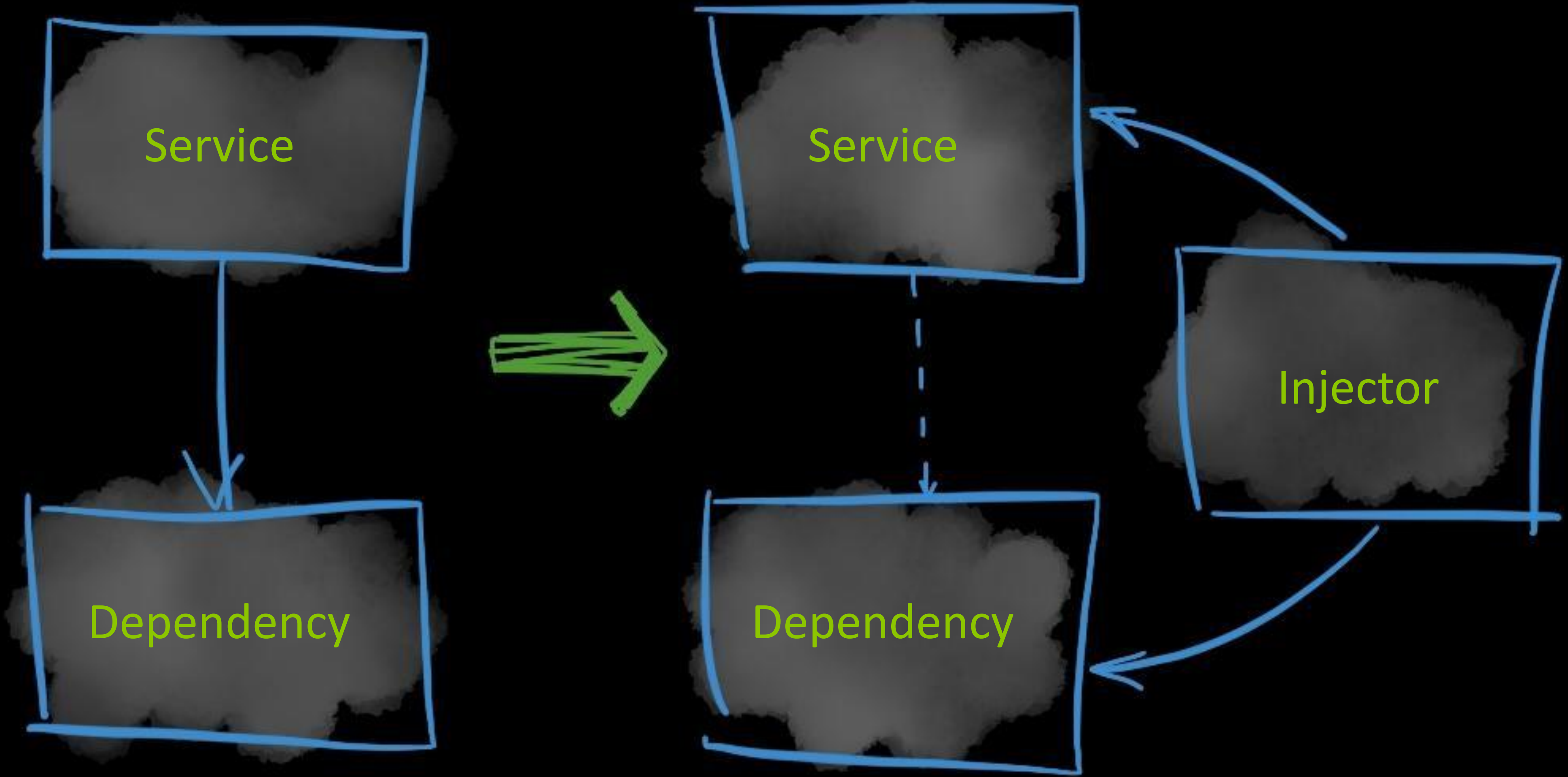


MVC

First introduced in 1979 by Trygve Reenskaug.

Splits the presentation from the logic and the user input.

Inversion of Control



Bootstrapping

TEMPLATE

```
<!doctype html>
<html lang="en" ng-app="myApp">
<head>
  …
  <script src="angular.js"></script>
  <script src="app.js"></script>
</head>
<body>
  …
</body>
</html>
```

CODE

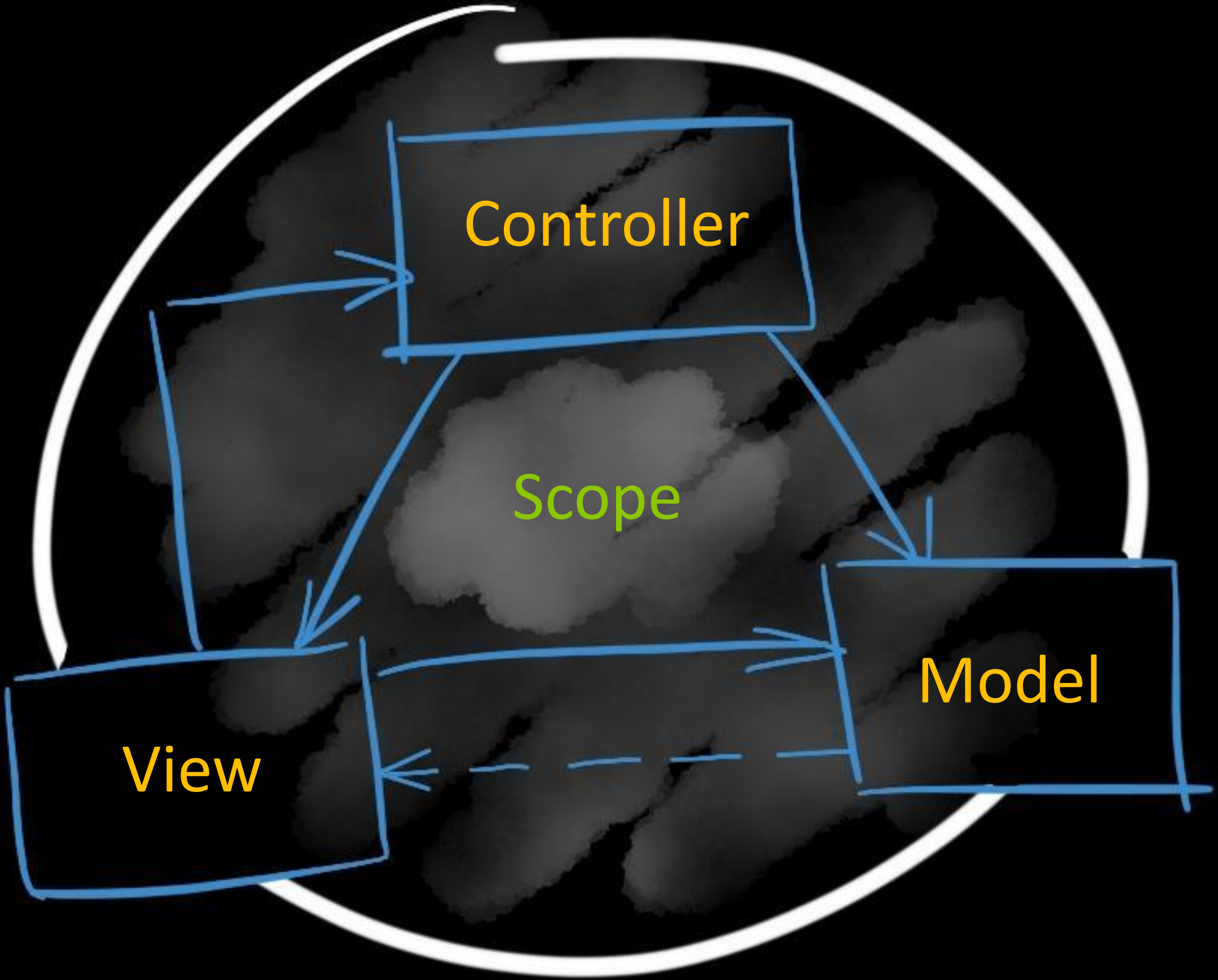
```
angular.module('myApp', []);
```

View and controller

Controllers. Templates. Scopes.

Angular view

```html
<html ng-app="phonecatApp">
  …
  <body ng-controller="PhoneListCtrl">
    <ul>
      <li ng-repeat="phone in phones">
        {{phone.name}}
        <p>{{phone.snippet}}</p>
      </li>
    </ul>
  </body>
</html>
```



Scope – the glue between model, view, and controller.

Angular controller

TEMPLATE

```
<div ng-controller="MyController">
  {{data}}
</div>
```

CODE

```
angular.module('myApp')
  .controller('MyController',
    function($scope) {
      $scope.data = {};
    });
```

Directives and filters

Directives. ngRepeat. Filters.

Look and feel

```
<div ng-switch-when="forked">
  <div class="span1 type"><i ng-class="event.icon"></i></div>
  <div class="span11">
    <plunker-inline-user user="event.user"></plunker-inline-user>
      created <plunker-inline-plunk plunk="event.child">
      {{event.child.id}}
    </plunker-inline-plunk>
    by forking this plunk <abbr timeago="event.date"></abbr>.
  </div>
</div>
```

Forms of directives

Preferred

Element: `<ng-include></ng-include>`

Argument: `<input ng-model="data"></input>`

also

Class: `<span class="ng-bind: {expression};"></span>`

Comment: `<!-- directive: ng-include -->`

ngRepeat

```
 <ul>
  <li ng-repeat="friend in friends">
    [{{$index + 1}}] {{friend.name}} who is {{friend.age}}.
  </li>
</ul>
```

Filter

```
 <ul>
  <li ng-repeat="friend in friends | filter:'query' ">
    [{{$index + 1}}] {{friend.name}} who is {{friend.age}}.
  </li>
</ul>
```

Standard filters

$	currency
1/8/95	date
	filter
{ }	json
x<	limitTo
ABC	uppercase
123	number
A Z ↑	orderBy
abc	lowercase

Practice

#1

Task – goo.gl/grrTPW

1. Create an angular application (bootstrap with ng-app).
2. Create a controller and a template.
3. Initialize the list of repos in the controller.
4. Display the data on the view as a list of panels where the following is displayed:
    1. *Repo’s full name that is a link to the repo,*
    2. *Repo owner’s login ID and avatar,*
    3. *Repo’s description.*
5. Output only 10 repos that come first alphabetically, order by full name ascending.

Two-way data binding

ngModel

ngModel

```
<input ng-model="model.prop"></input>
```

Practice

#2

Task – goo.gl/CoqXPy

1. Update the application so that the filtering params can be set on the page via inputs.
2. Default values should populate the inputs on load:
   1. *Filter: empty,*
   2. *Sort by name: asc,*
   3. *Limit: 10.*
3. Each time any of the values changes, the displayed list updates accordingly.

Event handlers

Calling events from the view

Event handlers

TEMPLATE

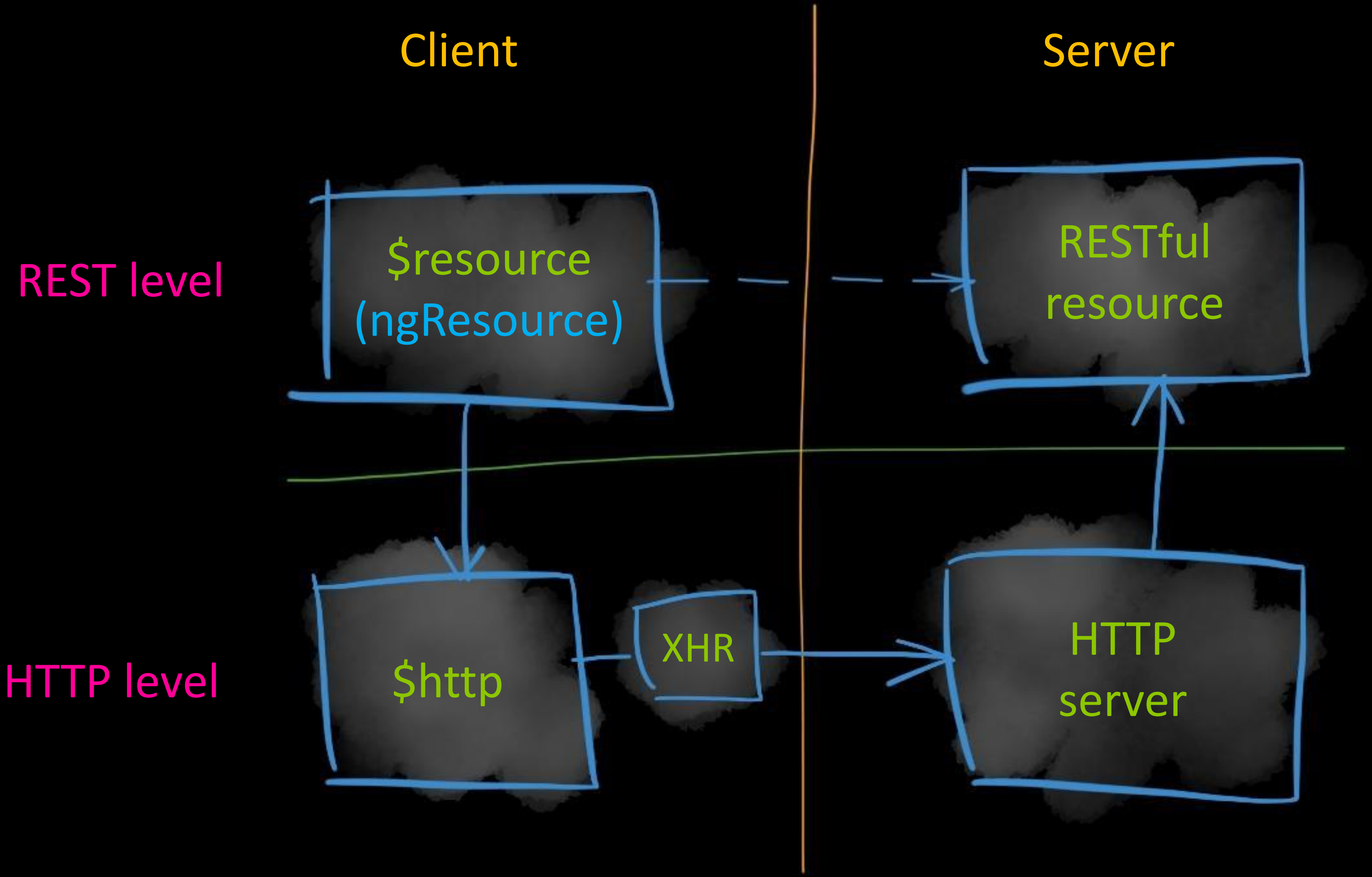
```
<div ng-controller="MyController">
  <button ng-click="do()">
  </button>
</div>
```

CODE

```
angular.module('myApp')
  .controller('MyController',
    function($scope) {
      $scope.do = function() { };
    });
```

RESTful services and $resource

HTTP and RESTful services. Injecting services.



Client
Server
REST level
HTTP level
$resource
(ngResource)
RESTful resource
$http
XHR
HTTP server

Injecting services

ngRoute

```
angular.module('myApp')
  .service('myService', function($resource) {
    ...
  })

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

Practice

#3

Task – goo.gl/75hgJq

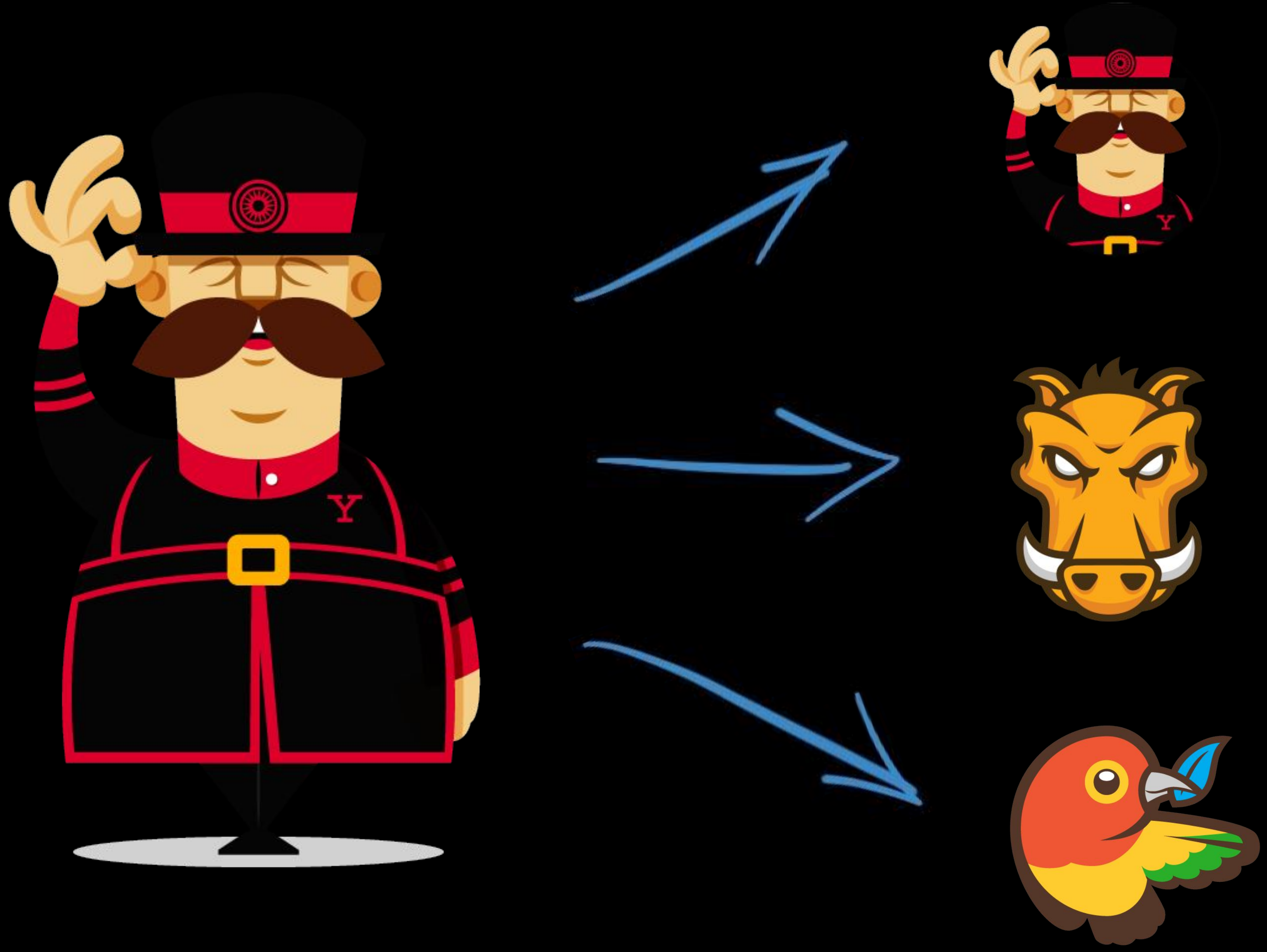
1. Update the application so that it gets the list of repos via the Github search API.
2. Add a panel with the search param that will allow to narrow the search request by:
    1. *Maximum repo size,*
    2. *Minimum number of forks,*
    3. *Minimum number of stars.*
3. Add the “Search” button that will query the data based on the specified parameters.
4. Create a separate service named “Repository” for this and inject in the controller.
5. Using $resource get the following related data and add to each repo view:
    1. *Languages,*
    2. *Contributors names and avatars.*

Yeoman

Yeoman tool. Scaffolding. yo.

Yeomen Warders

aka Beefeaters



yo
Scaffolding

Grunt
Task runner

Bower
Dependency management

Scaffolding is a technique, in which a specification is used to generate source code.

Scaffolding tools examples

yo

```
npm install -g yo generator-angular
```

yo angular

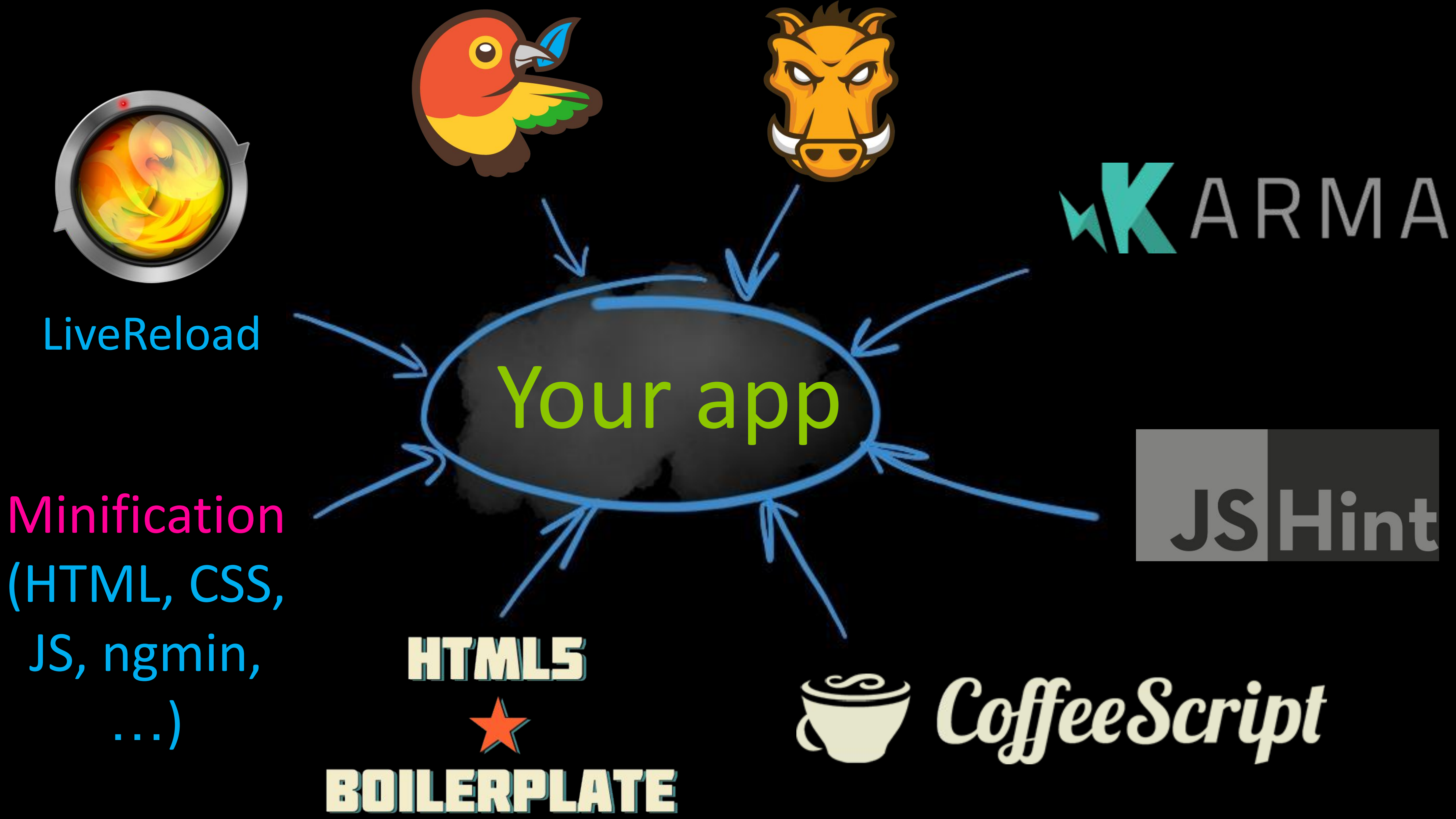
AngularJS generators

Angular generators

angular
(aka angular:app)

angular:controller
(service, directive, …)

angular:route


LiveReload
Your app
KARMA
JSHint
Minification
(HTML, CSS, JS, ngmin, …)
HTML5 ★ BOILERPLATE
CoffeeScript

Practice

#4

Task – goo.gl/yOC4Vx

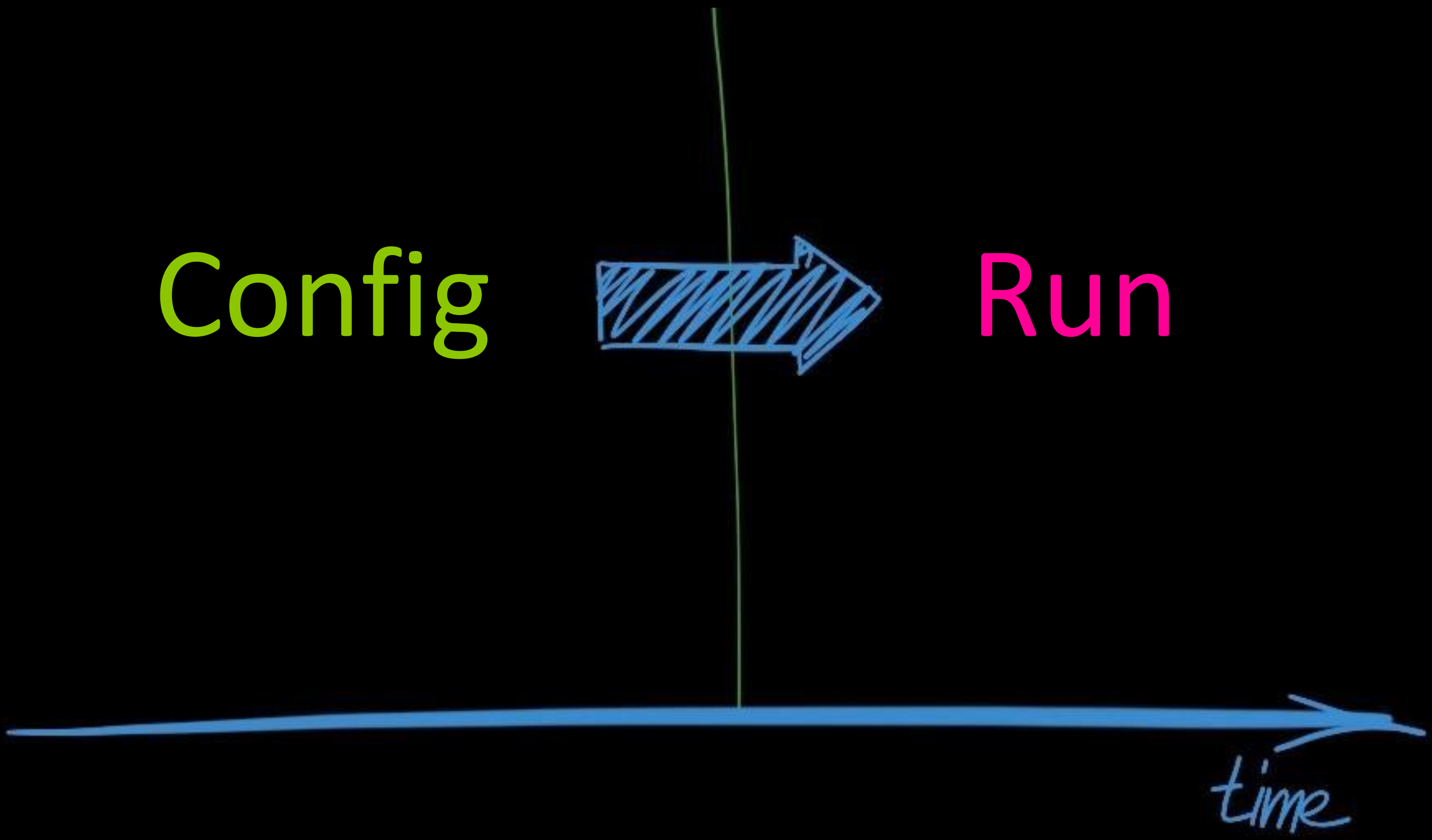
1. Create an application using yo AngularJS generator.
2. Migrate the existing code into this application using route and service generators. Use existing MainCtrl and main.html for your code.
3. Make sure the application runs on the Node JS server with the generated config.

Configuring services

Providers. Application phases.

Providers are used for services configuration.

Two execution phases

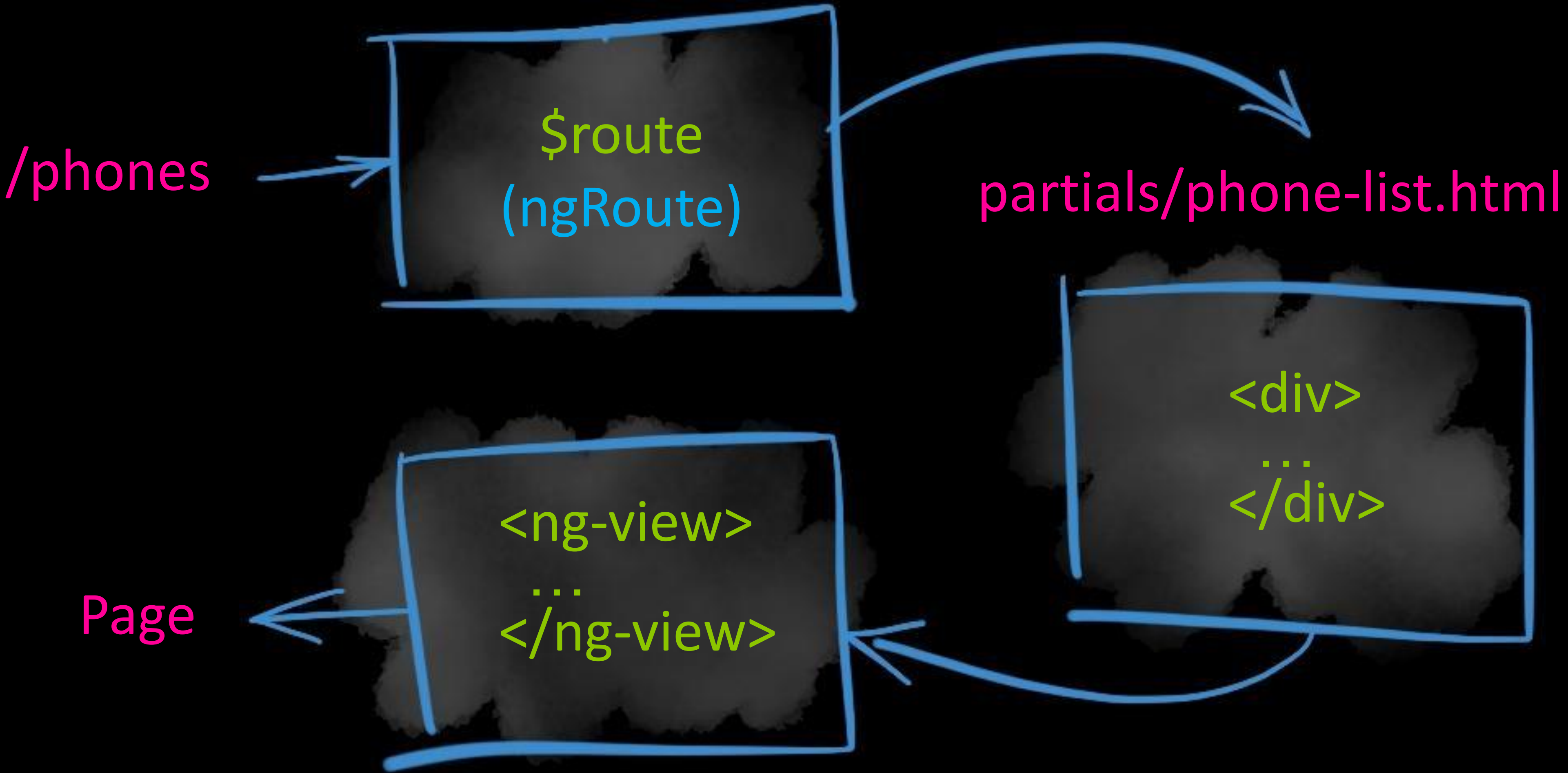


Example of a provider usage

```
angular.module('myApp', [])
  .config(function($filterProvider) {
    $filterProvider.register('myFilter', MyFilter);
  });
```

Routing

Multiple views. $routeProvider. $routeParams.


/phones
$route
(ngRoute)
partials/phone-list.html
<div>
...
</div>
<ng-view>
...
</ng-view>
Page

$routeProvider

```
$routeProvider
  .when('/phones', {
    templateUrl: 'partials/phone-list.html',
    controller: 'PhoneListCtrl'
  })
  .otherwise({
    redirectTo: '/phones'
  });
```

$routeParams

```
// Given:
// URL: http://server.com/index.html#/Chapter/1/Section/2?search=moby
// Route: /Chapter/:chapterId/Section/:sectionId

// Then
$routeParams ==> { chapterId: 1, sectionId: 2, search: 'moby' }
```

Practice

#5

Task – goo.gl/nriURP

1. Next to each repo entry in the list add the “Details” link.
2. Clicking on “Details” will navigate to the repo’s details page using AngularJS routing.
3. The page should contain the following information:
   1. *The same data that is shown for the repo in the repos list, plus*
   2. *The list of contributors logins.*
4. The page should also contain the “Back” link which will navigate back to the list of repos.
5. Try not to use yo angular:route.

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References

http://docs.angularjs.org/tutorial/

http://www.angularjs.org

http://chabster.blogspot.com/2008/02/mvp-and-mvc-part-1.html