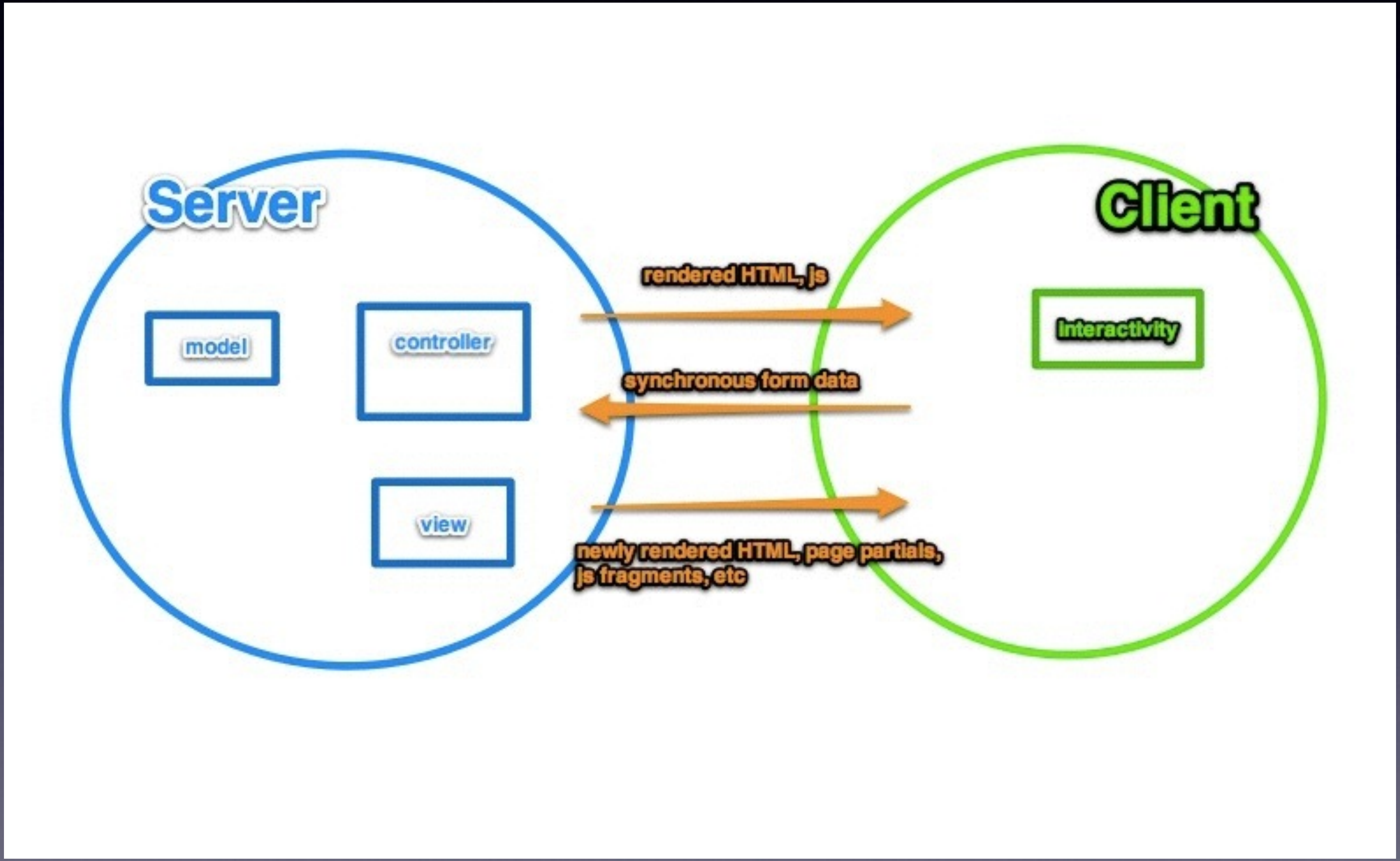
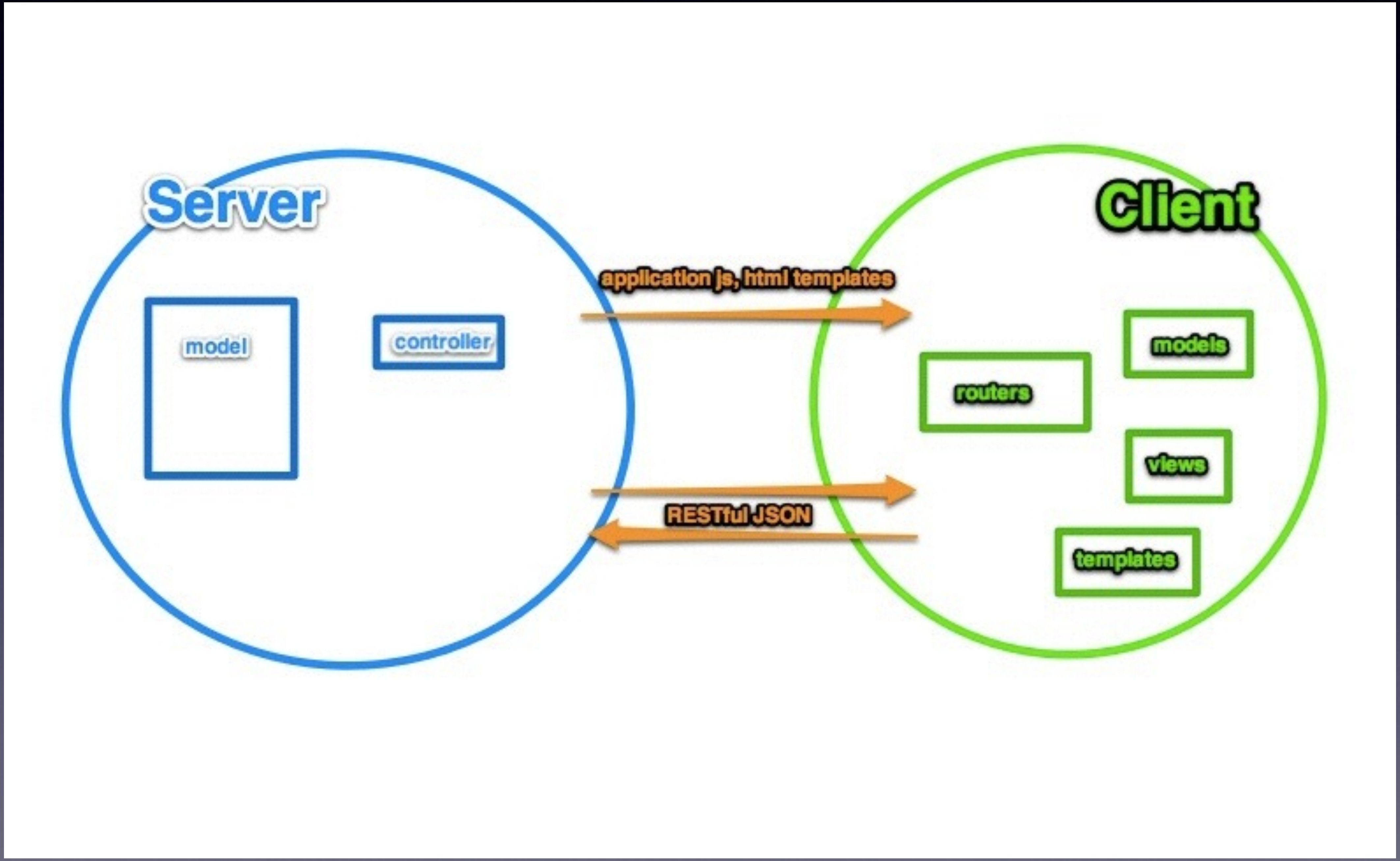
Welcome to CampNG!

Hi!

The old


Server
model
controller
view
rendered HTML, js
synchronous form data
newly rendered HTML, page partials, js fragments, etc
Client
Interactivity

The new


Server
model
controller
application js, html templates
RESTful JSON
Client
routers
models
views
templates

Angular Zen

Simplicity

Decouple all the things

Binding

Dependency Injection

Testing

HTML compiler

Angular expressions

{{ stuff }}

Our first angular app

You can make one, too!

- Make your page an angular app
- Add a very simple angular expression

Controllers

ng-controller

Manage $scope

Adds models

Models = POJSOs

Responds to UI actions

Should be thin(ish)

~~Manipulates the DOM~~

Let’s see a controller

You try it!

- Have your page say: “Hi, my name is _ and I am _ years old”
- Need 2 expressions and object(s) on scope
- Bonus point for single object on scope

View

POHTML*

Directives

- Custom attributes <div thing=”wut”>
- Custom element <thing></thing>
- CSS class <div class=”thing”>

ng-repeat

ng-repeat=”item in items”

ng-repeat=”(key, value) in object”

Show me some show me some repeating!

track by expression

You try!

- Instead of just your name and age, display a list of students with names and ages

ng-model

- Establish a two-way binding between model and view
- Changes from either side are immediately reflected

Show me some model

You should model

- Edit the names of one or all of the students
- Feel free to do age too!

ng-click

- Binds to a function on scope
- Can pass things on scope as params

Show me the clicking!

You can click too

- Create a new student
- Enter name and age
- Add it to the list

Built-in directives

- input, textarea, select
- ng-app
- ng-blur
- ng-change
- ngChecked
- ngClass
- ngClick
- ngCloak
- ngController
- ngDisabled
- ngShow, ngHide
- ng-model
- ng-repeat

So many!

But wait, there’s more...

More about $scope

- Can be nested
  - nested scopes inherit prototypically
- All inherit from $rootScope
- angular.element(“foo”).scope()

Beware of shadowing!

Let’s see why!

Modules

- An app or package
- Contain:
  - controllers
  - services
  - filters
  - directives
  - configuration

Modules

- create:
  - angular.module(“mod”, [deps])
- reference:
  - angular.module(“mod”)

Show me the module!

Let’s module!

- Put your app in it’s own module
- Call controller on that module to make your controller

We got both kinds of injection

- By argument name
- Inline (array syntax)

Dependencies

- You can define your own!
- Best way to share between things (controllers, directives, etc) in your app
- Singletons

Types of Dependencies

- Factory
  - function where return value is injected
- Service
  - returns a function called with new
- Provider
- value
- constant

Meet Fruit Factory

Make Student Factory

- Pull your students out of your controller into a factory
- For bonus points, give your factory a method to access a student by name

Layers of providing

- Turns everything is a provider eventually
- Prove it!

Config

ng-router

- Broken out from angular core in 1.2
- Client side routing for SPAs
- Need to add script and depend on ngRoute module

Routing

- $routeProvider
  - Used in a config block to define routes
- $routeParams
  - Can be injected in controller to access params
- $location
  - manually trigger route change with $location.path()

Defining a route

- $routeProvider.when(“route”, options)
- everything after “#”
- can have params “/things/:id/:name”
  - these become properties of $routeParams
- $routeProvider.otherwise({redirectTo:“/route”});

Route options

- controller
  - Invoked when the route is triggered
- template
  - String of markup
- templateUrl
  - External url to load template
  - script of type “text/ng-template” with an id

$routeParams

- injectable into controller
- properties for each param

Fruit routes

You can route too!

- Make students clickable
- Display their details when you click ‘em

ui-router

Meet our recipe app

We got both kinds of testing

unit-testing with Jasmine

angular-mocks.js

Lab #1

End-to-end testing

Lab #2

- Make the scenario spec pass

Lab #3 (revised)

- Move recipes to a service
- Make the jasmine spec pass

Lab #4 (revised)

- Make scenario spec pass
- You’ll need some routing
- Use your shiny new service in the controller
- Make sure links work too

Forms

- Don’t submit by default
- bind their values using ng-model
- form and inputs are available on scope by name

Form state

- <form name=”foo”>
  - $scope.foo is the form NOT the model
- <input name=”bar”>
  - $scope.foo.bar

State properties

- $dirty
- $pristine
- $invalid
- $error
- Also available as CSS classes

Fruit form

Lab #6

- Add edit route
- Add edit controller
- Wire up the edit form
- Make the scenario spec pass

$location.path(“/foos”)

Lab #7

- “saving” a recipe will just transition to show recipe
- use $location
- Make the scenario pass

Form validation

- All inputs:
  - ng-required
  - ng-minlength
  - ng-maxlength
  - ng-pattern
- Number:
  - min, max

Moar validation

- magic properties
  - $valid
  - $invalid
  - $error
    - keys for each validation
- on form and inputs

Lab #8

- Make title capitalization mandatory
- ng-pattern is your friend
- make the scenario pass

Lab 9 (revised)

- Make the create recipes scenario pass
- Add a create method to Recipe to create a new recipe with an id
  - With jasmine spec, please!
- Add a new route
- Add new controller

selects in angular

- select decorates HTML select tag
- ng-options for building optons

ng-options syntaxes

- label for value in array
  - value is what gets bound to ng-model
- selected as label for value in array
  - selected is what is bound to ng-model

select example

Talking to the server

- $http
  - get(url)
  - post(url, data)
  - put(url, data)
  - delete(url)
- returns a promise
  - success(func)
  - error(func)
  - then(successFunc, errorFunc)

Let’s see some httping

$scope.$apply

- kicks off the event loop
- Makes sure changes have propagated
- useful in tests
- Or non-angular aware code

$httpBackEnd

- Given to us by angular mocks
- Simulating requests in unit tests
- whenGET, whenPOST, etc
- expectGET, expectPOST, etc
- returns an object with respond method

Lab #10

- Implement an ingredient service to make the jasmine spec pass
- Implement add ingredient on show recipe to make scenarios pass

$resource

- For talking to RESTful resources
- $resource(“path”, options)
  - returns a class for the resource
  - get and query on class
  - $save, $remove, $delete method on instances

LetsGitLunch

Filters

- Transform an expression
- Are called like “foo | bar”
  - bar is a filter which transforms foo
- Can take parameters “foo | bar:baz”
  - bar is the filter, baz is the param

Built-in filters

- date
- currency
- json
- lowercase, uppercase
- orderBy
- number
- limitTo

The filter filter

- transforms a collection by filtering
- param is what to filter by
- strings that match or objects where any property matches
- eg stuff | filter:search

Fruit filtering

Lab #10

Lab #11

- Make spec pass by creating a markdown filter
- Use ng-bind-html to add description to show page

Creating directives

The easy way

- module.directive("fooBar", function() {...})
- Return a function(scope, element, attrs)
- element is jQuery wrapped if you jQuery
    - handy for wrapping plugins

version directive

The hard way

- return an object
  - specifies options to specify how directive works
  - there are many

The highlights

- restrict:
  - E for element
  - A for attribute
  - C for class
  - M for comment (no one uses that)

Directive scope

- true = new scope
- {} = “isolate” scope
  - Maps attributes on directive to scope
  - @ maps attribute
  - = bind to parent scope
  - & pass in an expression

$scope.$watch

- Two args
  - An expression to watch
  - A function to execute on change
  - receives newval, oldval as params

upperCase directive

Lab #12 (revised)

- Create a directive to live preview markdown
- Make the jasmine spec pass
- Add it to recipe edit view