

AngularJS Introduction

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What is AngularJS?

- A JavaScript-based MVC framework
 - Used to write single-page web applications
 - Custom HTML tags, attributes called `directives` used to manipulate the DOM
 - Uses dependency injection to configure application components
 - Can assemble applications from a number of separate modules

History of AngularJS

- Originally developed by Miško Hevery and Adam Abrons
- The project was developed for a side project while at Google
- Miško re-purposed as a general-purpose framework after he applied it to a Google application
- It was released on GitHub in October, 2010.
- Miško Hevery works on the library at Google with Igor Minár and Vojta Jína, others
- Colorful release names
<http://en.wikipedia.org/wiki/AngularJS>

Compared to...

- jQuery - jQuery is a library, not a framework
 - A 'lite' version is included in Angular by default
 - Overridden by the full jQuery release if included before AngularJS
- Backbone - lower level library, essentially a model-to-view binding service.
 - Pluggable with other libraries to build your own framework
 - Relies on low-level JavaScript expertise and API selections

Traditional Frameworks - Ember

- Ember - similar in scope to AngularJS
 - Uses conventions similar to Rails
 - Features a `mixin` approach to add features to Array, Map, etc...
- Meteor - both client and server-side framework
 - Features transparent code execution

Start early - a one-page AngularJS application

- Easy to include a minimal version
- Just add `angular.js` to your page, `ng-app` attribute to a block of HTML
- Then you can use any angular tags anywhere within that block of HTML

Simple Angular page

```
<!DOCTYPE html>
<html lang='en'>
  <head>
    <script src='./angular.js'></script>
    <title>Welcome to AngularJS</title>
  </head>
  <body ng-app>
    <p>
      {{ 'Hello from ' + 'angularJS' }}<br>
      New math: 1 + 3 = {{ 1 + 3 }}
    </p>
  </body>
</html>
```

Simple pages create a small application

- This application is installed in the body HTML tag
 - Angular parses the body tag looking for special attributes, elements, and even CSS styles
 - Angular runs code in each place it finds
 - Framework and application-defined tags, attributes and/or CSS Classes
 - `{{ }}` expressions
 - Angular executes the code in the tags, and evaluates the expressions

AngularJS is component-driven, even in UI

- Angular-defined tags, attributes, CSS classes that execute code are called `directives`
- Many pre-defined Angular tags and attributes, starting with `ng-`
- Directives are modular components that help Angular separate out HTML instructions from JavaScript code
 - We'll talk about Angular's built in directives, and defining our own directives later

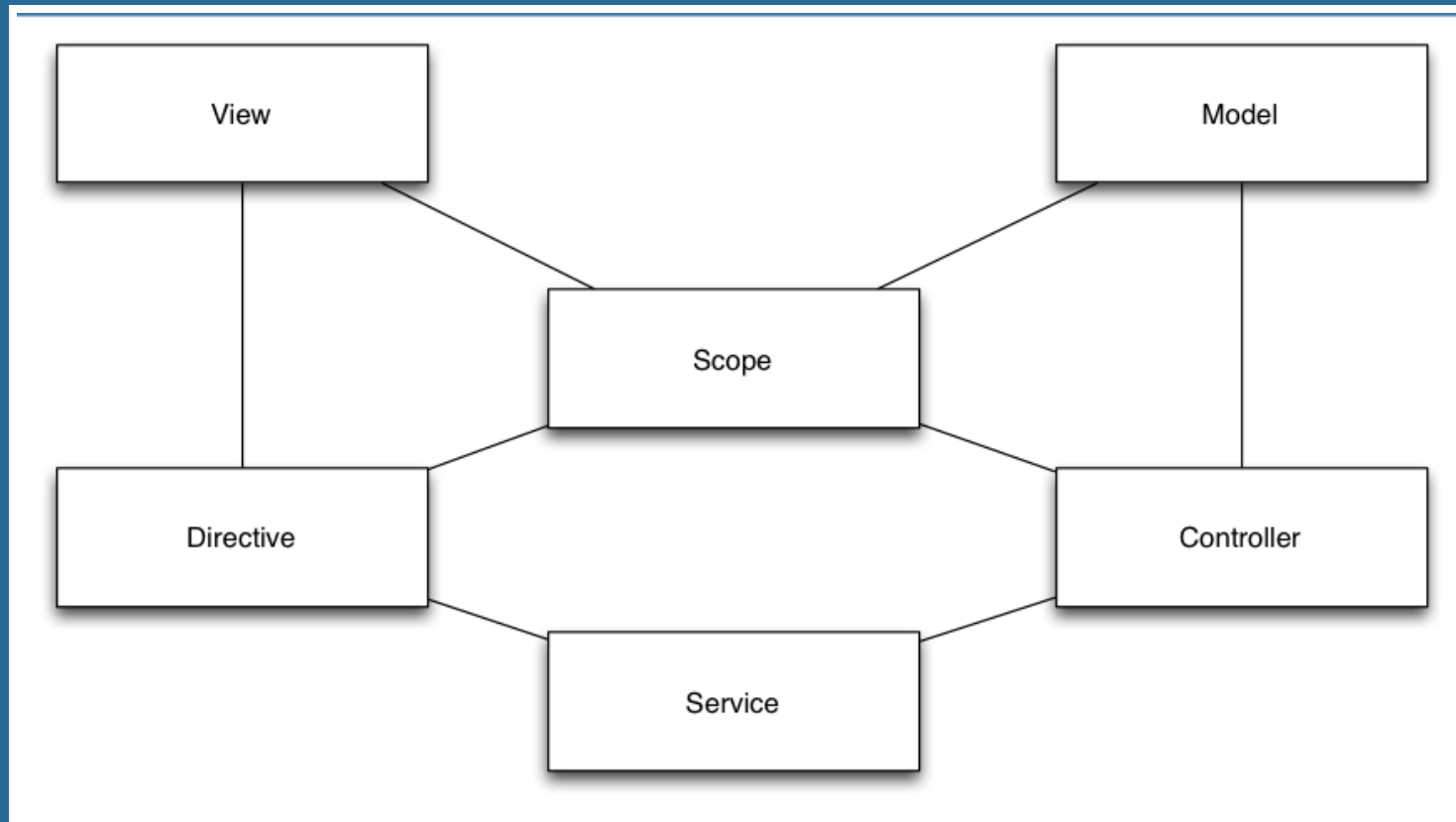
Major Angular components

- `module` - A container for all other objects in an angular application
- `controller` - Initializes a view before showing it, bind events and messages using scopes
- `service` - Stateful JavaScript object that can be called from other Angular objects
- `view` - An area of HTML managed by AngularJS
- `template` - Strings, script tags or files that contain view HTML code

Major Angular components

- `model` - JavaScript object used by an application to hold state, return results from services, etc...
- `scope` - Special "*viewmodel*" object that exposes model data, events and actions to views and other components
- `filter` - Function that transforms input
- `constant` - variable that does not change
- `value` - a single object that can be stored and fetched - commonly a function or object that contains attributes that you may wish to update

Big Picture



- Not shown - value, filter, constant
- Filters can be directly accessed from views, constants and values cannot

Angular World Tour

- Let's build something
- How about a note manager?
 - 1st - Module
 - 2nd - View / Controller
 - 3rd - Service
 - 4th - Use a directive

Questions?

- Hit me up at @krimple or krimple@chariotsolutions.com
- Chariot Solutions teaches and consults in AngularJS
- See our website at <http://chariotsolutions.com/training> for details on our AngularJS Fundamentals course

