

a Very Short Introduction to AngularJS

Lecture 11
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Frameworks

- ▶ Advanced JavaScript programming (especially the complex handling of browser differences), can often be very difficult and time-consuming to work with.
- ▶ To deal with these difficulties, a lot of JavaScript (helper) libraries have been developed.
- ▶ These JavaScript libraries are often called JavaScript frameworks.
- ▶ All of these frameworks have functions for common JavaScript tasks like animations, DOM manipulation, and Ajax handling.

Angularjs

- ▶ AngularJS (commonly referred to as "Angular") is an open-source web application framework maintained by Google.
- ▶ It's a JavaScript framework that addresses challenges faced in building single page applications.
- ▶ Providing a framework for client-side model-view-controller (MVC) and model-view-viewmodel (MVVM) architectures.
- ▶ AngularJS is the frontend part of the MEAN stack, together with Node.js runtime, Express.js backend framework and MongoDB database.

What you should know

▶ **HTML**

- ▶ You should know how to write Dynamic HTML and use attributes.
- ▶ You should know how to add JavaScript to your HTML page.

▶ **CSS**

- ▶ This is just to make stuff look pretty.

▶ **JavaScript**

- ▶ This **might** be important.
- ▶ You should know JavaScript variables, functions, arrays, objects and JSONS.

Some more stuff about Angular

- ▶ Angular is used to make response driven web pages.
- ▶ It helps you organize your JavaScript.
- ▶ Decouples the client and server sides.
- ▶ Decouples DOM manipulation with the application logic.
- ▶ Very easy to build and test.
- ▶ Plays very well with other frameworks like jQuery.

Setting up Angular

- ▶ AngularJS is a JavaScript framework. It is a library written in JavaScript.
- ▶ AngularJS is distributed as a JavaScript file, and can be added to a web page with a script tag

```
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/  
angular.min.js"></script>
```

- ▶ AngularJS starts automatically when the web page has loaded.
- ▶ AngularJS extends HTML with ng-directives.

Directives

- ▶ AngularJS lets you extend HTML with new attributes called Directives.
- ▶ AngularJS directives are extended HTML attributes with the prefix ng-.
- ▶ Some common directives include:
 - ▶ ng-app
 - ▶ ng-init
 - ▶ ng-module
 - ▶ ng-controller
 - ▶ ng-model
 - ▶ ng-repeat
 - ▶ ng-show
 - ▶ ng-hide

Angular Expressions

- ▶ AngularJS binds data to HTML using Expressions.
- ▶ AngularJS expressions are written inside double braces: `{{ expression }}`.
- ▶ AngularJS expressions binds data to HTML the same way as the `ng-bind` directive.
- ▶ AngularJS will “output” data exactly where the expression is written.
- ▶ AngularJS expressions are much like JavaScript expressions: They can contain literals, operators, and variables.

Comparing JavaScript and Angular Expressions

- ▶ Like JavaScript expressions, AngularJS expressions can contain literals, operators, and variables.
- ▶ Unlike JavaScript expressions, AngularJS expressions can be written inside HTML.
- ▶ Unlike JavaScript expressions, AngularJS expressions do not support conditionals, loops, or exceptions.
- ▶ Unlike JavaScript expressions, AngularJS expressions support filters.

Angular Controllers

- ▶ AngularJS controllers control the data of AngularJS applications.
- ▶ The ng-controller directive defines the application controller.
- ▶ A controller is a JavaScript Object, created by a standard JavaScript object constructor.
- ▶ In larger applications, it is common to store controllers in external files.

Angular Filters

- ▶ Filters can be added to expressions and directives using a pipe character.
- ▶ Filters can be added to directives and inputs too.
- ▶ Some common filters include:
 - ▶ **currency**: Format a number to a currency format.
 - ▶ **lowercase**: Format a string to lower case.
 - ▶ **uppercase**: Format a string to upper case.
 - ▶ **orderBy**: Orders an array by an expression.