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Comprehensive AngularJS

Course Summary

Description

AngularJS is a powerful client-side JavaScript MVC framework from Google that supports simple, maintainable, responsive and modular Rich Internet Applications. It supports automatic bi-directional data binding to and from JavaScript model objects, form controllers, and validation. Direct support for working with REST services and customizable routing, a comprehensive set of HTML tag-driven directives for View description, and the ability create your own custom directives are among the many reasons that AngularJS is so widely used in the RIA JS developer community.

Objectives

At the completion of this course the student will be able to:

- Understand the AngularJS model
- Utilize NG directives
- Utilize NG Forms
- Communicate with Servers
- Utilize Custom Directives

Topics

- Introduction to AngularJS
- A comple AngularJS Application
- What are single page applications?
- Controllers
- Views
- Scopes
- Providers
- Ajax, Data and Angular
- Using and Building directives
- Directives: an Introduction
- Testing in Angular
- End-to-End Testing
- Building a full-stack AngularJS Application
- Angular User Interfaces
- Angular Providers in greater depth
- Developing custom directives
- Enhanced end-to-end testing

Prerequisites

Attending students should have taken these courses or should have skills equivalent to topics in these classes:

- Introduction to JavaScript or equivalent experience
- Advanced JavaScript or equivalent experience
- Intro to HTML5

Audience

This course is designed for experienced web developers.

Duration

Five days

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I. Introduction to AngularJS
- A. What does AngularJS do for me?
- B. Who controls AngularJS?
- C. How can I get AngularJS?

II. A complete AngularJS Application
- A. A basic application
- B. Using angular-seed
- C. The pieces of the puzzle
  1. Two-way data binding
  2. Directives
- D. How it fits together
  1. How much of the page is an Angular application?
  2. What does Angular see as a model?
- E. Model, View, Controller from the AngularJS Perspective

III. What are Single Page Applications?
- A. What do we mean by Single Page Application?
- B. Creating Angular Modules
- C. Using Angular's Routing Service
  1. Routing Basics
  2. Accessing URL Data
  3. Using the $location Service
- D. Creating a Skeleton Single Page Application

IV. Controllers
- A. Where Controllers fit in, and what they do, from Angular's perspective
- B. Managing Scope
- C. Setting up Behavior
- D. Building a basic controller
- E. A more advanced controller

V. Views
- A. Displaying data in the view with Expressions
- B. Looping over data with repeaters
- C. Filters
  1. Standard filters
  2. Writing your own filter
  3. Tying filters together
- D. Event handling

VI. Scopes
- A. What are scopes?
- B. What do scopes provide?
- C. Scope lifecycle
  3. Page layout and organization
  4. UI Widgets
- D. Scopes as glue between controller and view
- E. Scope hierarchies
- F. Scope and events

VII. Providers
- A. What is a Provider?
- B. Values and Constants
- C. Factories
- D. Services

VIII. Ajax, Data, and Angular
- A. High level interactions with servers
- B. Low-level server interactions with $http
- C. The deferred/promises API
- D. Making RESTful Service calls with $resource

IX. Directives: an Introduction
- A. Writing our own directives
- B. Using scope
- C. Using templates

X. Testing in Angular
- A. Unit testing with Jasmine and Angular
- B. End to End testing with Protractor

XI. Building a full-stack Angular application
- A. Introduction to the application
  1. Behind-the-scenes on the server-side
  2. Data provided by MongoDB
- B. Organizing the project
- C. Building controllers
- D. Testing
- E. Shaping data in the view

XII. Angular User Interfaces
- A. Angular Forms
  1. Angular forms vs HTML forms
  2. Angular form controls
  3. Form events
  4. The form controller
  5. Form validation
  6. CSS classes for form data
- B. Using Angular with Angular UI and Angular Bootstrap
  1. Introduction to AngularUI
  2. Introduction to Bootstrap (and AngularUI's implementation)

Comprehensive AngularJS

Course Summary (cont'd)

XIII. Angular Providers in greater depth
- A. Providers as a concept
- B. The Service Provider
  - 1. Mocking out your Service during testing
- C. The Factory Provider
  - 1. Testing your Factory
- D. The Provider recipe

XIV. Developing Custom Directives
- A. Teaching HTML new tricks
- B. Binding text and attributes
- C. Directive processing lifecycle
  - 1. DOM Processing
  - 2. Compilation
  - 3. Linking
- D. A basic directive
- E. Directives and scopes
- F. Creating reusable directives
- G. Turning directives into components
- H. Transclusion
- I. Examples:
  - 1. Custom Elements
  - 2. Custom Event Handling
  - 3. Observing Model Changes with $observe

XV. Enhanced End-to-End Testing
- A. Introduction to End-to-End testing
- B. Setting up Protractor
- C. Configuring your browser()
- D. Grabbing elements
- E. Firing events
- F. Examining data

XVI. Conclusion