Angular 2 Development With TypeScript

This is Table of Contents.

The book is here.

The code samples are here.

Chapter 1. Introducing Angular 2

- 1.1. A Sampler of JavaScript Frameworks and Libraries
- 1.2. High-Level Overview of AngularJS
- 1.3. High-Level Overview Angular
- 1.3.1. Code Simplification
- 1.3.2. Performance Improvements
- 1.4. A Toolbox of the Angular Developer
- 1.6 A Quick Glance at Angular
- 1.7. Introducing a Sample Online Auction
- 1.8. Summary

Chapter 2. Getting Started with Angular 2

- 2.1. First Angular Application
- 2.1.1. Hello World in TypeScript
- 2.1.2. Hello World in EcmaScript 5
- 2.1.3. Hello World in EcmaScript 6
- 2.2. The Building Blocks of an Angular Application

- **2.2.1. Modules**
- 2.2.2. Components
- 2.2.3. Directives
- 2.3. SystemJS Universal Module Loader
- 2.4 Brief Introduction to Data Binding
- 2.5. Universal Module Loader SystemJS
- 2.5.1. Overview of Module Loaders
- 2.5.2. Module Loaders vs script Tags
- 2.5.3. Getting Started With SystemJS
- 2.5.4. Configuring SystemJS
- 2.6. Selecting a Package Manager
- 2.6.1. Comparing npm and JSPM
- 2.6.2. Starting a Project with npm
- 2.7. Hands-on: Getting Started with Online Auction
- 2.8. Summary

Chapter 3. Navigation with Component Router

- 3.1. Routing Basics
- 3.1.1. Location Strategies
- 3.2.2. Client-Side Navigation Building Blocks

3.2. Passing Data to Routes

- 3.2.1. Using RouteSegment
- 3.3. Child Routes
- 3.4. Hands-on: Adding navigation to Online Auction
- 3.5. Summary

Chapter 4. Dependency Injection

- 4.1. The Dependency Injection and Inversion Of Control Patterns
- 4.1.1. Benefits of Dependency Injection
- 4.2. Injectors and Providers
- 4.2.1. How to Create a Provider
- 4.3. Injecting Product Service
- 4.3.1. Injecting Http Service
- 4.4. Switching Injectables Made Easy
- 4.4.1. Declaring Providers with useFactory and useValue
- 4.5. The Hierarchy of Injectors
- 4.6. Hands-on: Using DI in Online Auction
- 4.6.1. Creating the Product Details Component
- 4.7. Summary

Chapter 5. Bindings, Observables, and Pipes

5.1. Data Binding

- 5.1.1. Binding to Events
- 5.1.2. Binding to Properties and Attributes
- 5.1.3. Binding in Templates
- 5.1.4. Two-Way Data Binding

5.2. Events and Observables

- 5.2.1. What are Observables
- 5.2.2. Observable Event Streams
- 5.2.1. How to Cancel Observables

5.3. Pipes

5.3.1. Custom Pipes

5.4. Hands-on: Filtering Products in Online Auction

5.5. Summary

Chapter 6. Implementing Components' Communication

6.1. Inter-Component Communications

- **6.1.1. Input and Output Properties**
- **6.1.1.1 Input Properties**
- 6.1.1.2 Output Properties and Custom Events

- 6.1.2. The Mediator Pattern
- 6.1.3. Changing Templates at Runtime with ngContent
- 6.2. Component Lifecycle
- **6.2.1 Using ngOnChanges**
- 6.3. The High-Level Overview of Change Detection
- 6.4. Exposing Chile Component's API
- 6.5. Hands-on: Adding Rating Feature to Auction
- 6.6. Summary

Chapter 7. Working With Forms

- 7.1. Overview of HTML Forms
- 7.1.1. Introducing a User Registration Form
- 7.2. Angular Forms API
- 7.2.1. Form Controls
- 7.2.1. Form Directives
- 7.3. Form Validation
- 7.3.1. Programmatic Approach
- 7.3.2. Custom Validators
- 7.3.3. Custom Validation Directives
- 7.4. Template-Driven Forms
- 7.4.1. Refactoring a Sample Form Template

7.4.2.	Creating	a Sample	Form	Compone	nt
--------	-----------------	----------	------	---------	----

7.5. Data-Driven Forms

- 7.5.1. Creating a Sample Form Component
- 7.5.2. Refactoring a Sample Form Template

7.6. Hands-on: Adding Validation to the Search Form

7.7. Summary

Chapter 8. Interacting with Servers Using HTTP and WebSockets

8.1. Brief Overview of the Http Object API

8.2. Creating a Web Server with Node and TypeScript

- 8.2.1. Creating a Simple Web Server
- 8.2.2. Serving JSON
- 8.2.3. Live TypeScript Recompilation and Code Reload
- 8.2.4. Adding the RESTful API for Serving Products

8.3. Bringing Angular and Node Together

- 8.3.1. Static Resources on the Server
- 8.3.2. Making GET Requests with Http Service
- 8.3.3. Unwrapping Observables Inside Templates with AsyncPipe
- 8.3.4. Injecting HTTP Into a Service

8.4. Client-Server Communications via WebSockets

8.4.1. Pushing D	ata From	Node	Server
-------------------------	----------	-------------	--------

8.4.2. Turning WebSocket into Observable

8.5. Hands-on: Implementing Product Search and Bid Notifications

- 8.5.1. Implementing Product Search using HTTP
- 8.5.2. Broadcasting Auction Bids using WebSocket

8.6. Summary

Chapter 9. Unit Testing Angular Applications

- 9.1 Getting to know Jasmine
- 9.2 What Comes with Angular Testing Library
- 9.2.1 Testing Services
- 9.2.2 Testing Component Router
- **9.2.3 Testing Components**

9.3 Testing A Sample Weather Application

- 9.3.1 Testing the Weather Router
- 9.3.2 Testing the Weather Service
- 9.3.3 Testing the Weather Component
- 9.4 Running Tests with Karma
- 9.5 Hands-on: Unit Testing of Online Auction
- 9.6 Summary

Chapter 10. Bundling and Deploying Applications with Webpack

10.1 Getting to Know Webpack

10.1.1 Hello World with Webpack

10.1.2 Loaders

10.1.3 Plugins

10.2 Creating a Basic Webpack Configuration for Angular

10.3 Creating Dev and Prod Webpack Configurations for Angular

10.4 Hands-on: Deploying Online Auction with Webpack

10.5 Summary

Appendix A. Overview of ECMAScript 6

11.1. How to Run Code Samples

11.2. Template Literals

11.2.1. Multi-line Strings

11.2.2. Tagged Template Strings

11.3. Optional Parameters and Default Values

11.4. Scope of Variables

11.4.1. Variable Hoisti	ng
-------------------------	----

- 11.4.2. Block Scoping With let and const
- 11.4.3. Block Scope for Functions
- 11.4.4. Arrow Function Expressions, This, and That

11.5. Rest and Spread Operators

11.6. Generators

11.7. Destructuring

- 11.7.1. Destructuring of Objects
- 11.7.2. Destructuring of Arrays

11.8. Iterating with for Each(), for-in, and for-of

- 11.8.1. Using forEach()
- 11.8.2. Using for-in
- 11.8.3. Using for-of

11.9. Classes and Inheritance

- 11.9.1. Constructors
- 11.9.2. Static Variables
- 11.9.3. Getters, Setters, and Method Definitions
- 11.9.4. The super Keyword and the super Function
- 11.10. Asynchronous Processing with Promises
- 11.10.1. A Callback Hell
- **11.10.2. ES6 Promises**

11.11. Modules

- 11.11.1. Imports and Exports
- 11.11.2. Loading Modules Dynamically
- 11.12. What to Read Next on ES6
- **11.13. Summary**

Appendix B. TypeScript as a Language for Angular Applications

- 12.1. Why Writing Angular Apps in TypeScript
- 12.2. Getting Started With TypeScript
- 12.2.1. Installing and Using TypeScript Compiler
- 12.3. TypeScript as a Superset of JavaScript
- 12.4. Optional Types
- 12.5. Functions
- 12.5.1. Default Parameters
- 12.5.2. Optional Parameters
- 12.5.3. Arrow Function Expressions
- **12.6.** Classes
- 12.6.1. Access Modifiers
- 12.6.2. Methods

4	0	0	0	T 1	ı.			
1	Z.	b	.3	. In	n	erit	an	ce

12.7. Generics

12.8. Interfaces

- 12.8.1. Declaring Custom Types with Interfaces
- 12.8.2. Using the Keyword implements
- 12.8.3. Using Callable Interfaces
- 12.9. TypeScript Modules
- 12.10. Adding the Class Metadata With Annotations
- 12.11. Using Type Definition Files
- 12.12. Bringing Together TypeScript and Angular
- 12.13. Overview of the TypeScript/Angular Development Process
- **12.14. Summary**