MOBILE APP DEVELOPMENT WITH

ANGULARJS AND IONIC

Single Codebase for Multiple Platform

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This book is for sale at http://leanpub.com/angularjs-ionic

This version was published on 2015-05-18

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Chapter 1 : Intro

Android, IOS and Windows Phone are some of the most popular Mobile Operating Systems nowadays. There are so many devices use these OS, even the devices from small phone manufacturers use android OS. Of course, there is no need to talk too much about the popularity of these three OS, everyone is already know right? :)

Let's talk about the main topic of this book, creating a mobile app. In this book, i don't want to talk about java nor Objective-C, which is the language used to develop android and IOS native application. Instead we'll talk about Developing Hybrid Application using the power of Javascript (especially AngularJS) and a promising brand new framework called Ionic.

Hybrid vs Native Application

We will use AngularJS and Ionic to Develop mobile App. It's mean, the app that we created is a hybrid app. So, what is hybrid app? and What is the different between hybrid and native apps? And why should we choose hybrid over native app? We will talk about it soon.

The old debate about which best between Hybrid and Native Application is already been around for years. In case you don't know yet, here are the differences between the two:

- Native app refers to app built for specific operating system and can be accessed only from dedicated app store.
- Hybrid app on the other hand, refers to app built for several operating system and distributed accross multiple app store.
- If you want to develop **native** apps for several operating systems, you need to develop for each OSes one by one.
- On the other hand, if you want to develop **hybrid** apps for several OSes, you only need to develop once.
- Native apps are coded in the native language of the device (e.g. Java For Android and Objective-C for IOS).
- Hybrid apps are coded with HTML, CSS and Javascript.
- Native apps run directly on the device.
- Hybrid apps run through an invisible browser that is packaged into a native application.
- Native apps can access all the device APIs.
- Hybrid apps can access several device APIs.

Advantages of Creating Hybrid App

Both Native and Hybrid have advantages and disadvantages, so we won't start a new debate whether the app should be native or hybrid. Let's just list the advantages of creating hybrid app, the type of app that we will learn to create through this book.

1. Development Cost and Time

The most significant advantage of building a hybrid application is development cost and time. Hybrid apps give a shortcut to deploy web apps as native by wrapping web app code using native framework such as phonegap. Here is the interesting part, if you are a web developer who have capability to code HTML, CSS and Javascript, you are 80% ready to create your mobile app. Just, wrap your code with native framework, and deploy it to any platform that you want. Of course, you need to pack the code for every platform one by one, but it far more faster than developing for each platform.

In this book, we will learn how to make it even faster by using Ionic Framework. Ionic is a front end framework which utilize AngularJS as Javascript Framework and Phonegap for packaging the code. We will talk more about ionic soon.

2. Learning Curve is considerably shorter

HTML, CSS and Javascript are the most widely used language to code, especially for web. The resources to learn these three language are highly available through the internet as well as educational institutions. They are not new languages, so you will easily find people who knows these three languages.

Between so many resources available out there, i recommend W3Schools[1] as your resources to learn HTML, CSS and Javascript. If you already know how to code those three languages or even already an expert, that's good! you're ready to create your first app.

3. Framework for Creating Web Apps can be utilized to create Hybrid App

For some people, start everything from scratch is really time wasting. There are so many frameworks out there that can help you as a starting point. Of course, not every framework can be used. AngularJS is one of the framework that can be used as i mentioned earlier.

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[1]http://www.w3schools.com/

Introduction to AngularJS

AngularJS[2] is a javascript framework originaly for creating single page web application. Single page mean when you click a link within the application, the browser won't reloaded. It's also mean the browser only access one HTML file to run entire application. However, from the users point of view, the page still looks like have multiple pages, with no browser reload when transitioning between pages.

When talk about AngularJS, some people may assume that AngularJS is a JQuery plugin or has dependency with JQuery, but actually it's not. You don't need JQuery to play with AngularJS, just AngularJS itself. All you need to do is download the the assets (angular.js file), then refer it from your HTML file and you're ready to go.

Why AngularJS?

There are several feature that make AngularJS a very awesome frameworks, Here are some of them:

- **Two Way Data Binding**. This is a really awesome feature of AngularJS. With this feature, you don't have to put data into the view manually. Everytime a data changed inside a controller, it will also changed in the view which uses the controller and vice versa. When you use Two Way Data Binding, You'll feel like you have created ajax functionality with a really easy way.
- **The Directive**. Directive is an HTML extension that allows us to create new behaviours. The very basic directive we know is called `ngModel`. It allows us to display a variable value directly to the screen as well as set the variable value via input text.
- **Services**. Services are javascript functions which responsible to do a spesific tasks. Services are created to do a specific task only, which make them maintainable and testable as an individual entity.
- **Dependency Injection**. Within Controllers and Filters we can call services using dependency injection. Simply type the name of the service as function parameter and you're ready to use the services inside the function.
- **Unit Testing Ready**. The whole angularJS apps is linked together with Dependency Injection. And when testing apps with unit test, we usually mock some data into a function. Here is Dependency Injection can help to make things easier.

Introduction to Ionic Framework

Ionic Framework is an Advanced Mobile App Framework which utilize AngularJS for the application to be fully functional. It comes with command line utility to start a project and build the code into installable native app. When you install Ionic, you will also install cordova. Apache Cordova is

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[2]http://www.angularjs.org/

a standard native Framework for packaging web app into installable native app. There is another project called phonegap which is based on cordova. Both phonegap and cordova have almost the same functionality, which is why some people assume that cordova = phonegap.

Ionic[3], comes with a lot of components that can be used to create nice looking UI, including CSS and Javascript Component. You can read more about the components by visiting its Documentation[4]. We will also talk about several components in this book and learn about how the components work.

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[3]http://ionicframework.com/
[4]http://ionicframework.com/docs/