

Android Jump Start

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April 29th, 2013

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Skills Prerequisites

- Knowledge and understanding of the following topics in Java:

Procedural Programming

Object Oriented Programming

Arrays & Strings

Inheritance

Inner Classes

Exceptions Handling

Threads

I/O Streams

Generics

Collections

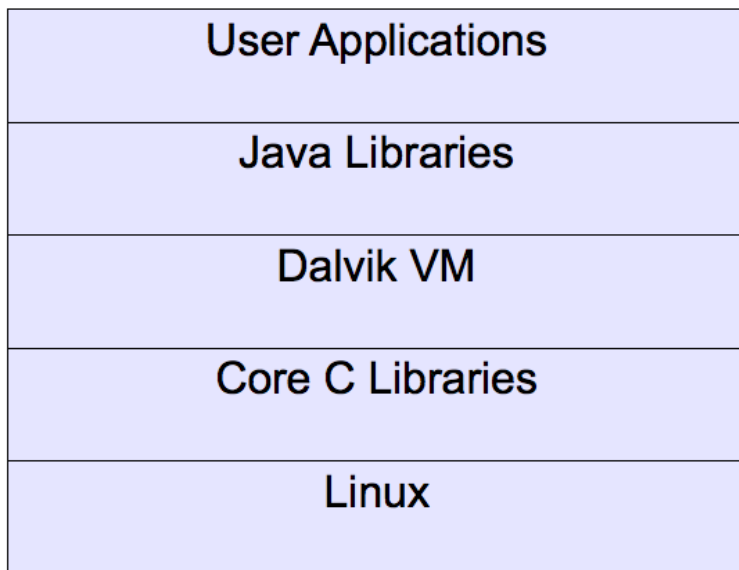
Software Installation

- Eclipse IDE Classic / Eclipse IDE for Java Developers
www.eclipse.org
- Android Development Tools (ADT) Plugin for Eclipse
<http://developer.android.com/tools/sdk/eclipse-adt.html>
- Android Software Development Tools (SDK)
<http://developer.android.com/sdk/index.html>

You can simply download and install the ADT Bundle. It includes a customized version of Eclipse already installed with the ADT plugin, the Android SDK and everything is already configured for a smooth start.

The Android Platform

- “Android is a software platform that delivers a complete set of software for mobile devices, including an operating system, a middle-ware and key mobile applications” (Google)



Declarative User Interface

- We can create the user interface using XML (similar to silverlight).

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent" >

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="44dp"
        android:ems="10"
        android:inputType="numberDecimal" >

        <requestFocus />
    </EditText>
</RelativeLayout>
```

Application Resources

- The application resources are static collections of bits held outside the Java source code.

```
package com.abelski.sample;  
  
public final class R {  
    public static final class attr {  
    }  
    public static final class drawable {  
        public static final int ic_action_search=0x7f020000;  
        public static final int ic_launcher=0x7f020001;  
    }  
    public static final class id {  
        public static final int button1=0x7f070002;  
        public static final int editText1=0x7f070000;  
        public static final int editText2=0x7f070001;  
        public static final int editText3=0x7f070003;  
        public static final int menu_settings=0x7f070004;  
    }  
}
```

The SQLite Database

- The application resources are static collections of bits held outside the Java source code.



Federation of Components

- The android platform is a federation of components of different types, including activities, services, broadcast receivers and content providers.

Activity

Service

Broadcast Receiver

Content Provider

Implicit and Explicit Intents

- The intent is an abstract description of an operation to be performed. (google)

```
Intent intent = new Intent("android.intent.action.PICK");  
intent.addCategory("android.intent.category.DEFAULT");
```

```
<intent-filter>  
  <action android:name="android.intent.action.PICK" />  
  <category android:name="android.intent.category.DEFAULT" />  
</intent-filter>
```

The Hybrid Option

- The android platform allows us to embed the built-in web browser as a widget within the user interface of our application.
- Instantiating the `WebView` class we get an object that represents an embedded web browser. The `WebView` widget is implemented based on `WebKit`.



The Hybrid Option

- JavaScript is a powerful programming language. We can develop user interface similar to the one we get when developing it in Java.



www.jQueryMobile.com

www.jqmgallery.com



www.sencha.com/products/touch/

www.sencha.com/products/touch/demos/



www.kendoui.com

demos.kendoui.com

The Hybrid Option

- HTML5 is a large set of web technologies that allows the development of diverse and powerful web sites and applications. [more](#)

GeoLocation API
Camera API
Fullscreen API
Drag & Drop API
Web GL API
Canvas API
Web Sockets API
Web Workers API
Offline Storage APIs
Communication API
Video API
Audio API



The Hybrid Option

- Powerful JavaScript libraries allow us to write our code in a structural organized way.



www.angularjs.org



www.jquery.com



www.mootools.net

The Hybrid Option

- We can use PhoneGap in order to write code in JavaScript that interacts with the mobile telephone itself. We can invent our own PhoneGap.



www.phonegap.com

The Need for Java

- There are cases in which we better develop our code for android in Java:

Computation Resource Limits

Code Running in The Background

High Quality Applications

The Need for Java

- There are cases in which we don't have a choice but writing our code in Java:

Using The Platform Capabilities

Live Wallpapers

App Widgets

Developing New Launchers

Developing New Keyboards

Push Notifications

Interaction with Platform Intents

Self Learning Resources

- Android Developers Web Site
developers.android.com
- Abelski Free Courses
abelski.lifemichael.com
- Israeli Guide to Android
www.androidbook.co.il

Questions & Answers

- Two courses you might find interesting include
Android 4.3 Applications Development
[more info](#) [detailed plan](#)
PHP Cross Platform Mobile Applications
[more info](#) [detailed plan](#)
- If you enjoyed my lecture please leave me a comment
at <http://speakermix.com/life-michael>.

Thanks for your time!

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User Applications
Java Libraries
Dalvik VM
Core C Libraries
Linux

Declarative User Interface

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