

warwick C<>ding



by Wesley Haigh



But **First**

A little bit about me

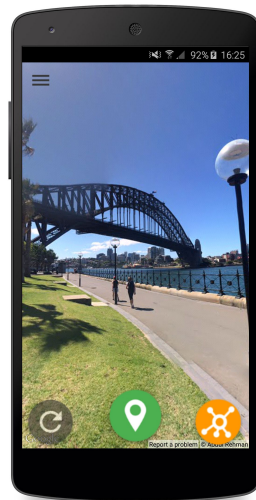


I am Wesley

- I started programming in 2012
- And I started developing Android applications in 2013
- I created the geography game Globetrotter in August 2015



Globetrotter





Course Overview

Introduction to Android Development and the
course



Course Structure

- Project structure
- Intro to XML - button, textview and containers
- Basic Java
- Object Oriented Programming Basics
- Lists and Objects
- Creating an Activity
- Databases and SQLite
- Adding another table to the database
- Animations
- Action Bar Menus



Tools

Android Studio

(check <http://developer.android.com/sdk/index.html#Requirements> for computer requirements)

Java Development Kit (JDK) 7.0+

Android phone (recommended but not required)




Creating a **Project**



Creating a New Project

Create New Project

 **New Project**
Android Studio

Configure your new project

Application name: WarwickCodingApp

Company Domain: com.


Package name: com.warwickcodingapp

Project location: C:\Users\Wesley\AndroidStudioProjects\WarwickCodingApp


Previous


Next


Create New Project


 Add an activity to Mobile

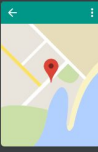
Add No Activity



Blank Activity

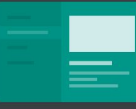

Empty Activity


Fullscreen Activity


Google AdMob Ads Activity


Google Maps Activity


Login Activity


Master/Detail Flow

Previous

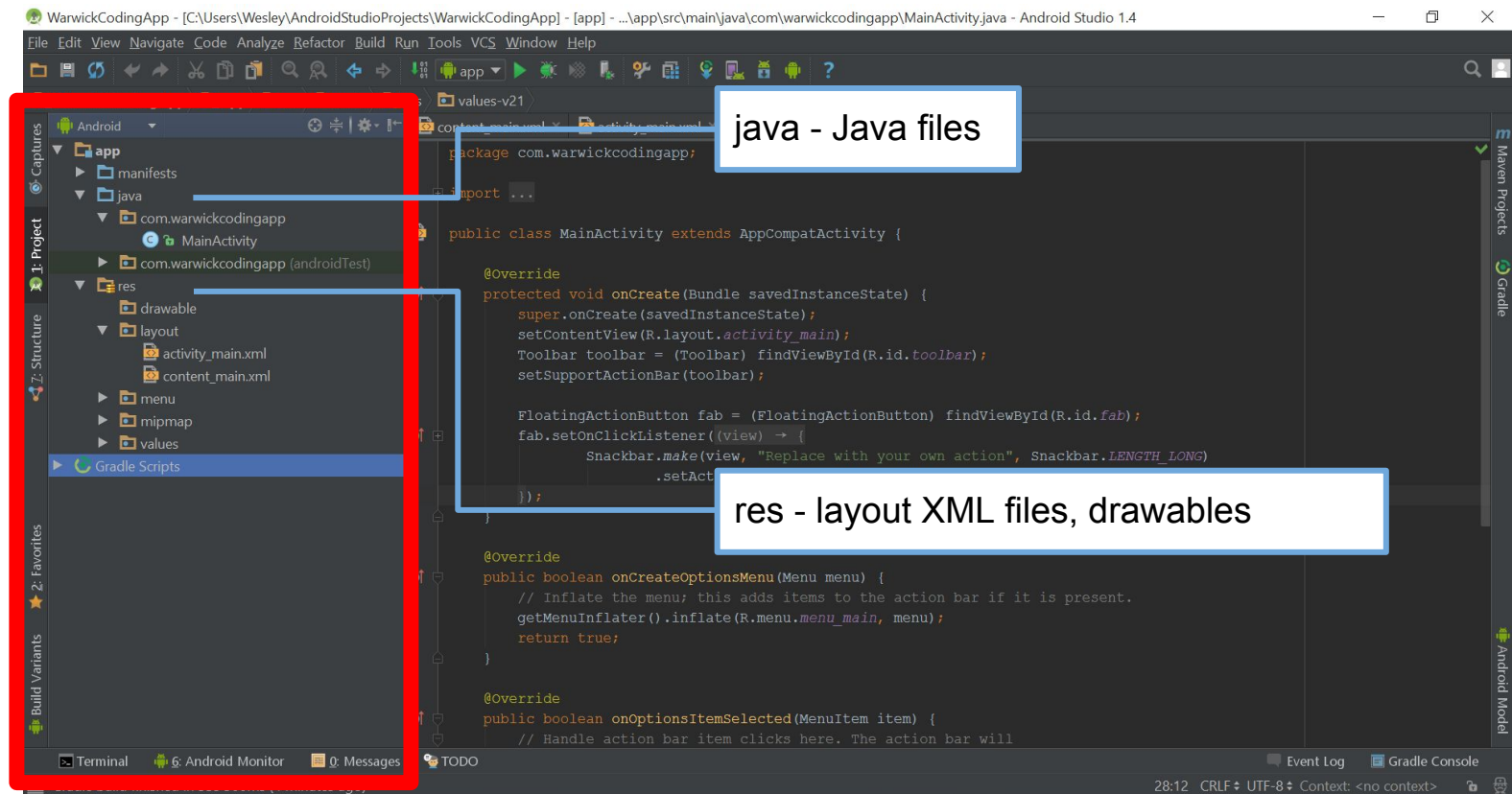
Next

Cancel

Finish



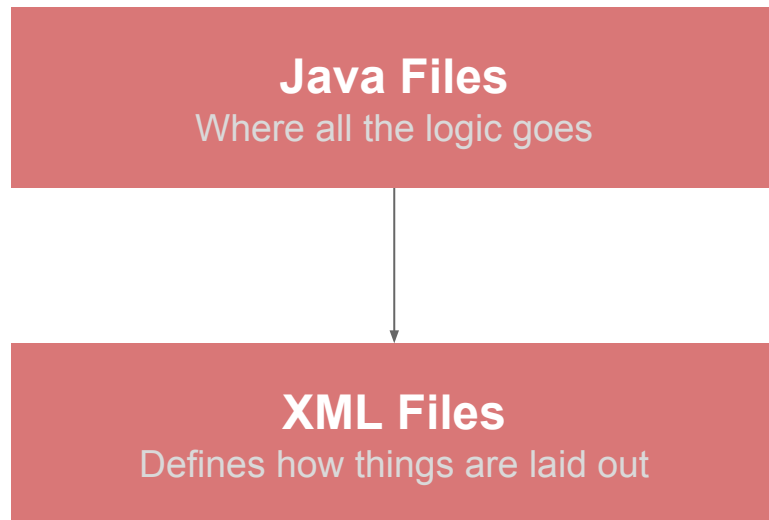
File Structure





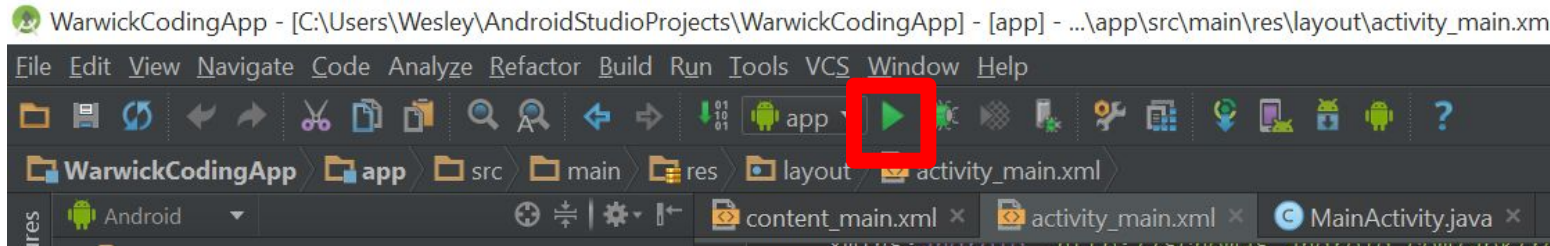
Project Structure

- Android projects consist of Java and XML files.
- An Activity is a Java file and an XML file that work together.
- The Java file determines how the user interacts with the app.
- The XML layout file determines how the activity looks.





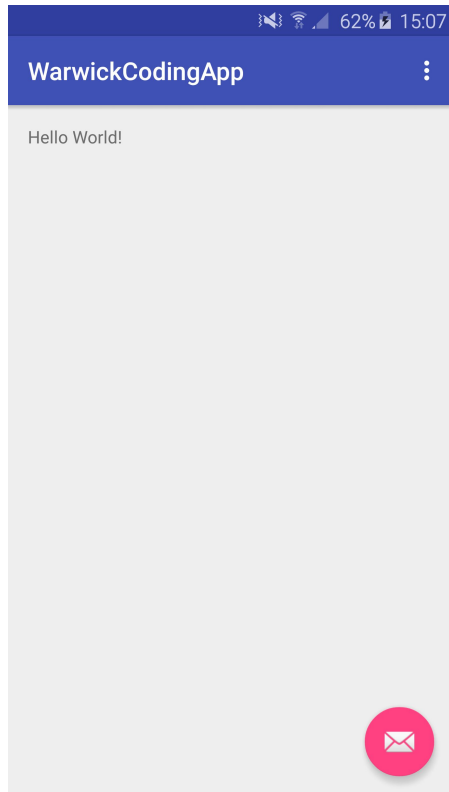
Running the Hello World App



- Plug your phone in or start the emulator.
- If you are using your phone, go to settings → developer options and enable USB debugging.
- Press the run button.



Running the Hello World App



Congratulations! You have taken your first steps towards creating Android Apps!

That was easy... (hopefully)



Intro to XML



Intro to XML

- Just interested in the **resources (or res)** folder for now.
 - activity_main.xml
 - content_main.xml
- XML has similar syntax to HTML with <> </> style tags
- Remove the floating action button from activity_main.xml:

```
<android.support.design.widget.FloatingActionButton android:id="@+id/fab"
    android:layout_width="wrap_content" android:layout_height="wrap_content"
    android:layout_gravity="bottom|end" android:layout_margin="@dimen/fab_margin"
    android:src="@android:drawable/ic_dialog_email" />
```

- Go to content_main.xml and remove the padding in the parent view and the TextView.



Intro to XML: Buttons and TextViews

- Buttons provide ways of user feedback in an app
- Add a button to content_main.xml
- Text can be displayed via a TextView
- Add a TextView to content_main.xml

```
<Button
    android:id="@+id/startButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:text="Start!"/>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_above="@+id/startButton"
    android:layout_marginBottom="20dp"
    android:textSize="25sp"
    android:text="WarwickCoding App"/>
```



Intro to XML: Properties

- Once a control is defined (Button, TextView, RelativeLayout etc.) then you can define the properties of it: size, colour, text size etc.
- Every property starts **android:**
- For any control you must always define:
 - **android:layout_height**
 - **android:layout_width**
- The units used in properties such as width and margin are density pixels or **dp**. eg. `android:padding="30dp"`
- The units for textSize is **sp**. eg. `android:textSize="18sp"`
- Controls can be named and referenced using the **android:id** property (See the Button from before and the `android:layout_above` property for the TextView)



Intro to XML: Containers

- Everything in an XML file must exist inside one `<> </>` tag. Normally this is a container.
- The different containers that we will use are:
 - RelativeLayout
 - LinearLayout
- **RelativeLayout**: child elements can be placed anywhere inside the container or placed relative to another child element. Elements can also be placed over each other.
- **LinearLayout**: child elements are placed one after another either horizontally or vertically



Intro to XML: drawables

- In Android images and complex backgrounds are stored in the **drawable** folder
- An **ImageView** can be used to display these images. Backgrounds of controls can also be set to images
- To show an image called `warwick_coding_logo.jpeg`, for example, set the property **`src="@drawable/warwick_coding_logo"`**

```
<ImageView
    android:layout_width="300dp"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_above="@+id/courseText"
    android:layout_marginBottom="-15dp"
    android:src="@drawable/warwick_coding_logo"/>
```



Intro to XML: Strings

- In Android all Strings defined in xml files should be kept in a separate file found in **/values/strings.xml**
- This is so that translating the app into other languages is easy.
- Let's move the start button text to the file:

```
<resources>
    <string name="app_name">WarwickCodingApp</string>
    <string name="action_settings">Settings</string>
    <string name="main_button_start">Start!</string>
</resources>
```

- And change the Button control:

```
android:text="@string/main_button_start"
```

- **Exercise: do the same for the “Android Course” text**



End of Lecture Exercise

Modify `content_main.xml` and `activity_main.xml` so that it looks like the image on the right.

To do this you will need to:

- create a drawable resource for the start button background
- add the images for the WarwickCoding logo and the Android Robot logo
- remove the action bar from the top (and modify the `MainActivity.java` file)
- modify the `content_main.xml` file.



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