Android App Development

By IEEE Reva University

A brief history of ~~Time~~ Android

Android is a mobile operating system developed by Google, based on a modified version of the Linux kernel and other open source software and designed primarily for touchscreen mobile devices such as smartphones and tablets. In addition, Google has further developed Android TV for televisions, Android Auto for cars, and Wear OS for wrist watches, each with a specialized user interface. Variants of Android are also used on game consoles, digital cameras, PCs and other electronics.
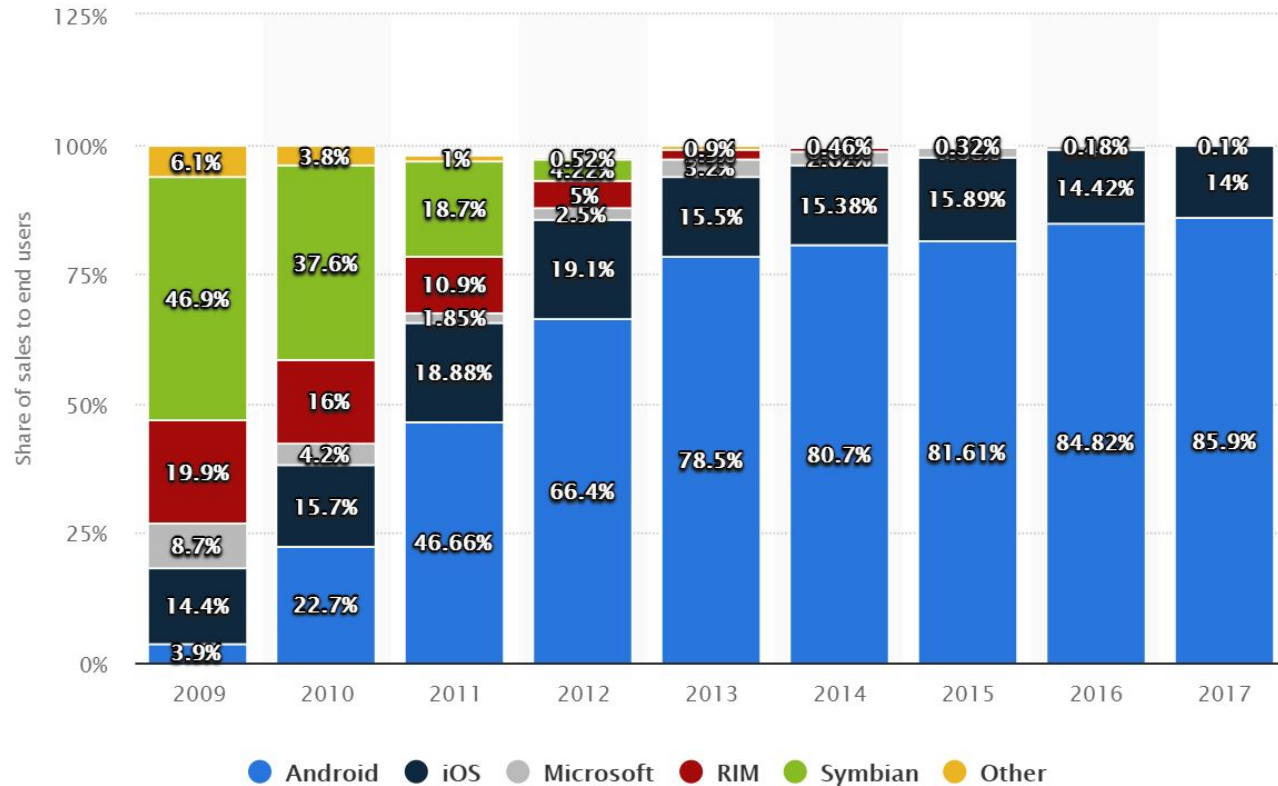
-- Wikipedia

Andy Rubin

Andy Rubin, Rich Miner, Nick Sears, and Chris White developed android in 2003 and founded the company Android Inc, Which Google acquired in 2005.

SmartPhone Sales 2009 - 2017

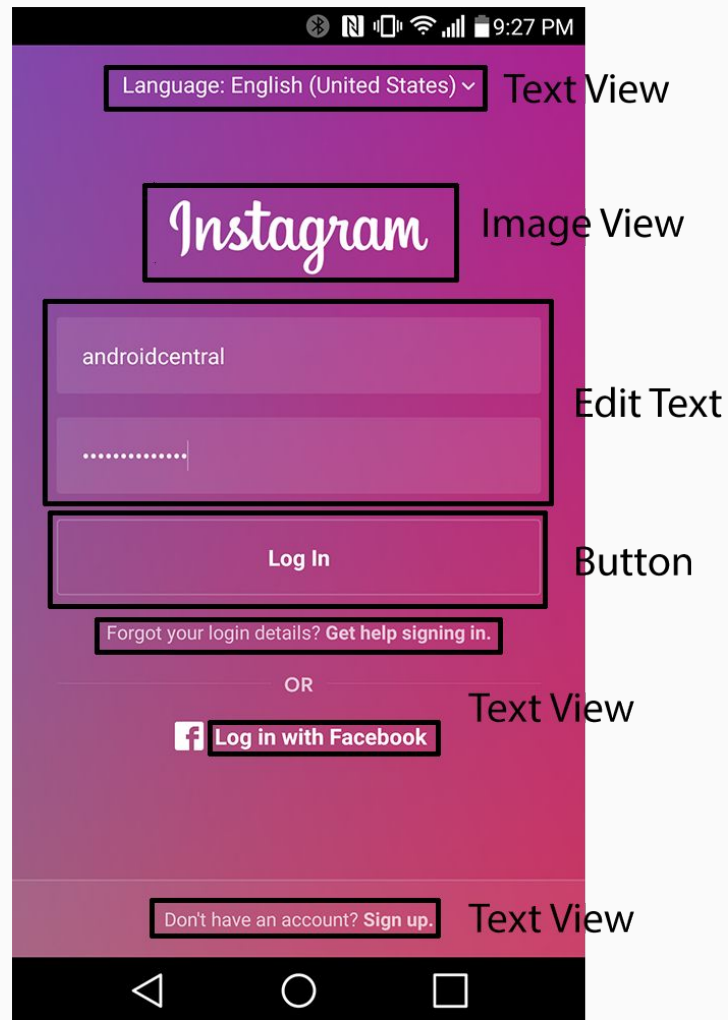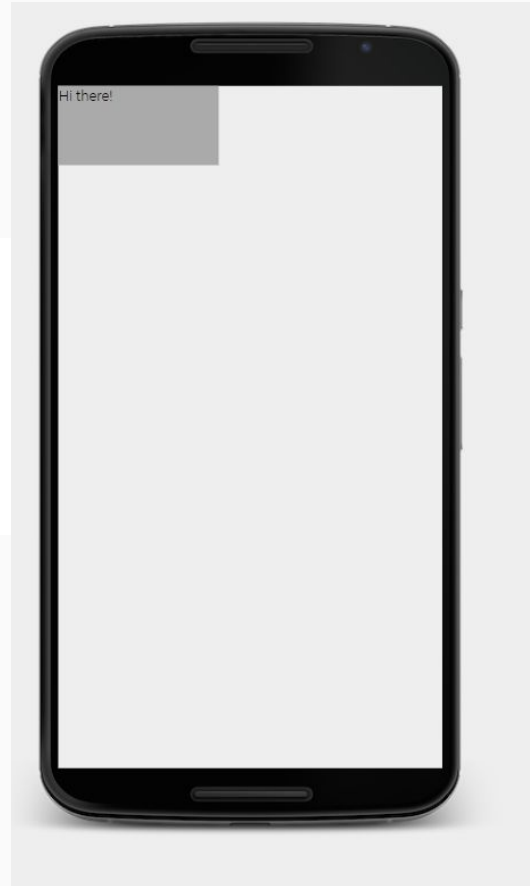# Let's Start Coding

Views

Basic Views

- Text View
- Edit Text
- Image View
- Buttons
- And More

Language: English (United States)

Text View

Instagram

Image View

androidcentral

••••••••••••

Edit Text

Log In

Button

Forgot your login details? Get help signing in.

OR

Log in with Facebook

Text View

Don't have an account? Sign up.

Text View

9:27 PM

Text View

```xml
<TextView
    android:text="Hi there!"
    android:layout_width="150dp"
    android:layout_height="75dp"
    android:textColor="@android:color/black"
    android:background="@android:color/darker_gray"
/>
```

XML Structure

XML tag

Value

```
<TextView
    android:text="Hi there!"
    android:layout_width="150dp"
    android:layout_height="75dp"
    android:textColor="@android:color/black"
    android:background="@android:color/darker_gray"
/>
```

Attribute

Parent/Child Tags

Parent Tag

```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <ImageView
        android:src="@drawable/ocean"
        android:layout_width="wrap_content"
        android:layout_height="0dp"
        android:layout_weight="8"
        android:scaleType="centerCrop" />

    <TextView
        android:text="Text View 2"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:textColor="@android:color/white"
        android:textSize="54sp"
        android:background="#009688" />


</LinearLayout>
```

Child Tags

XML Visualizer

https://labs.udacity.com/android-visualizer/

Text View

```xml
<TextView
    android:text="Hi there!"
    android:layout_width="150dp"
    android:layout_height="75dp"
    android:textColor="@android:color/black"
    android:background="@android:color/darker_gray"
/>
```
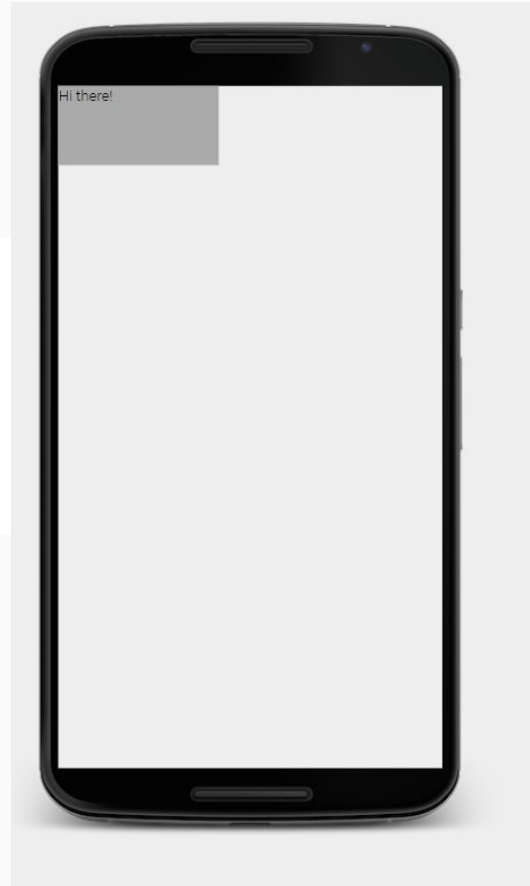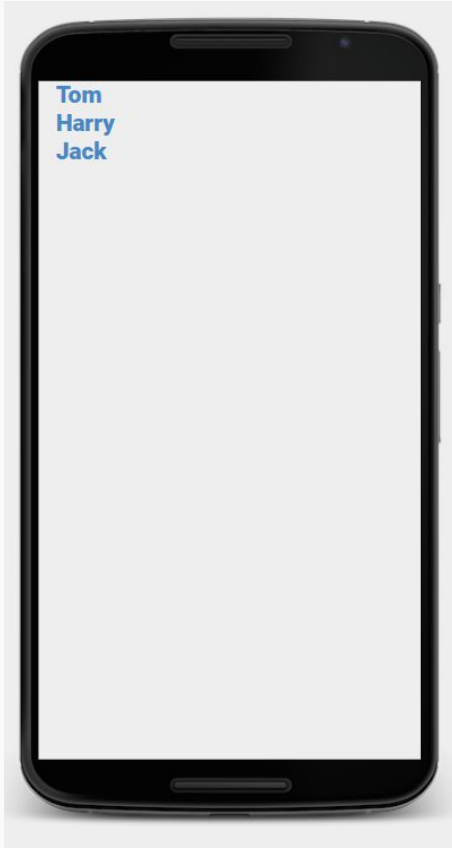
Image view

```xml
<ImageView
android:id="@+id/photo_image_view"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:src="@drawable/patio" />
```
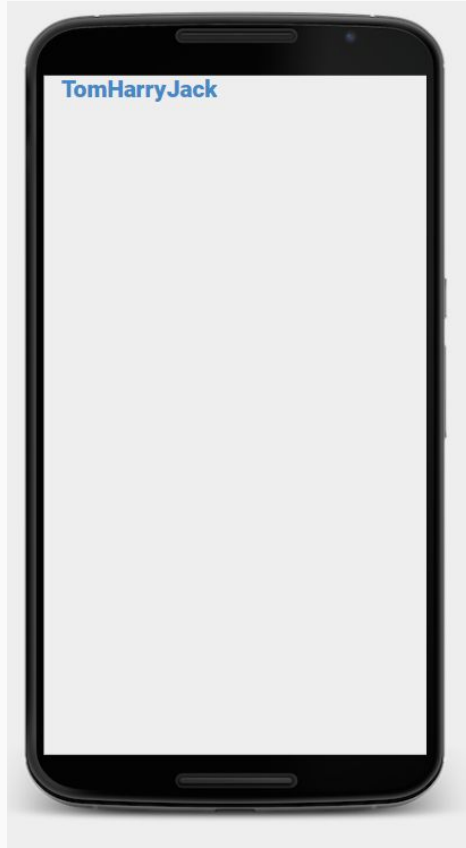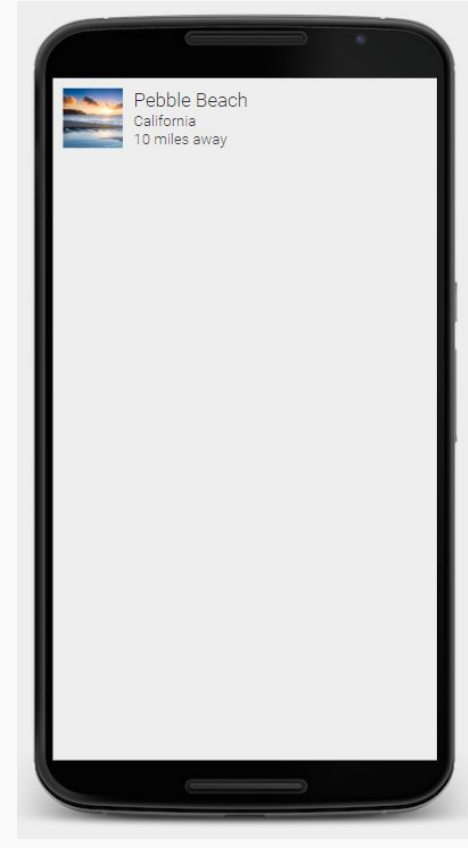
View Groups

Linear Layout (Vertical)

Tom
Harry
Jack

Linear Layout (Horizontal)

TomHarryJack

Relative Layout

Pebble Beach
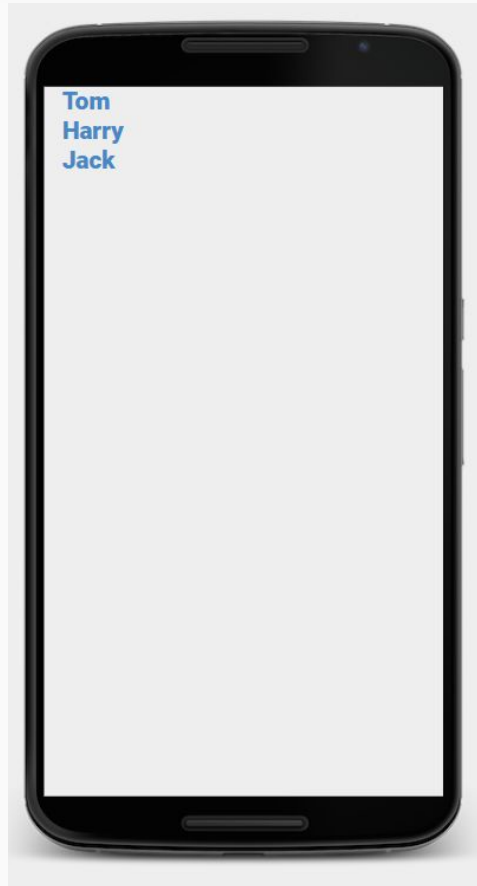California
10 miles away

Linear Layout (Vertical)

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="16dp"
    android:paddingRight="16dp"
    android:orientation="vertical" >

    <TextView

    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Tom"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />


    <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Harry"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />


     <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Jack"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />

</LinearLayout>
```

Linear Layout (Horizontal)

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="16dp"
    android:paddingRight="16dp"
    android:orientation="horizontal" >

    <TextView

    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Tom"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />


    <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Harry"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />


    <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Jack"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />

</LinearLayout>
```
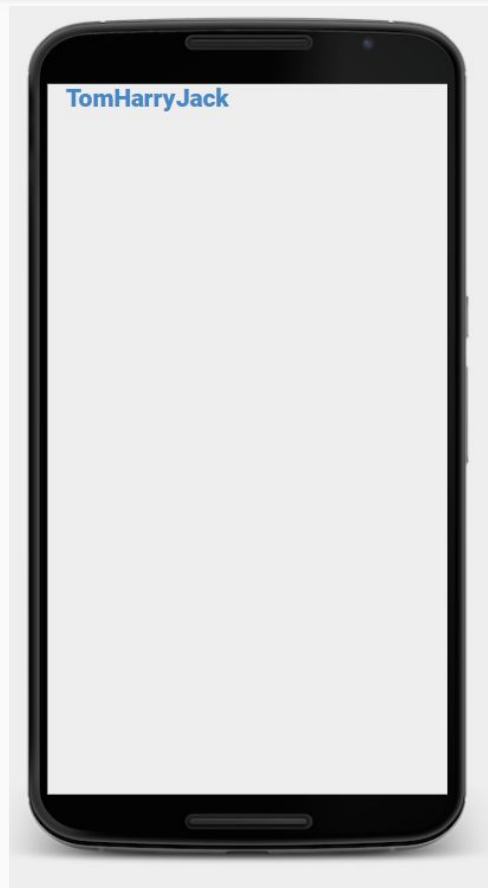
Relative Layout

```xml
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="10dp">

    <ImageView
        android:id="@+id/photo"
        android:layout_width="56dp"
        android:layout_height="56dp"
        android:scaleType="centerCrop"
        android:src="@drawable/ocean" />

    <LinearLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:layout_toRightOf="@id/photo"
        android:padding="10dp"
        android:paddingTop="0dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Pebble Beach"
            android:textAppearance="?android:textAppearanceMedium" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="California"
            android:textAppearance="?android:textAppearanceSmall" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="10 miles away"
            android:textAppearance="?android:textAppearanceSmall" />
    </LinearLayout>

</RelativeLayout>
```
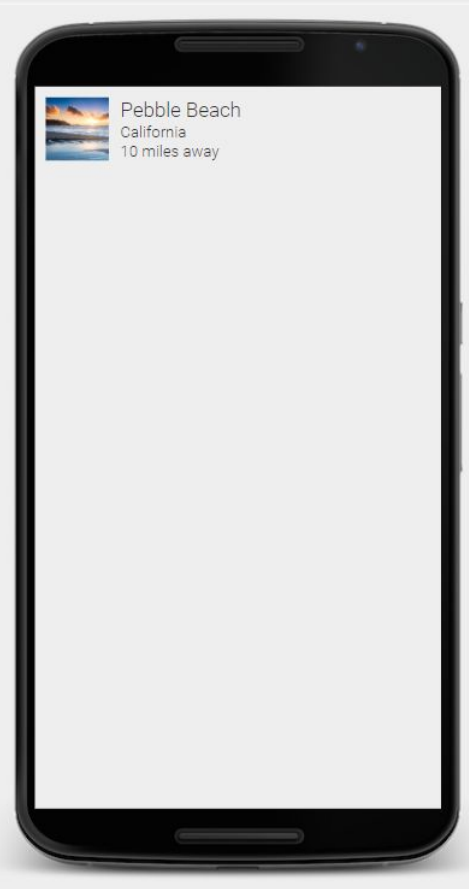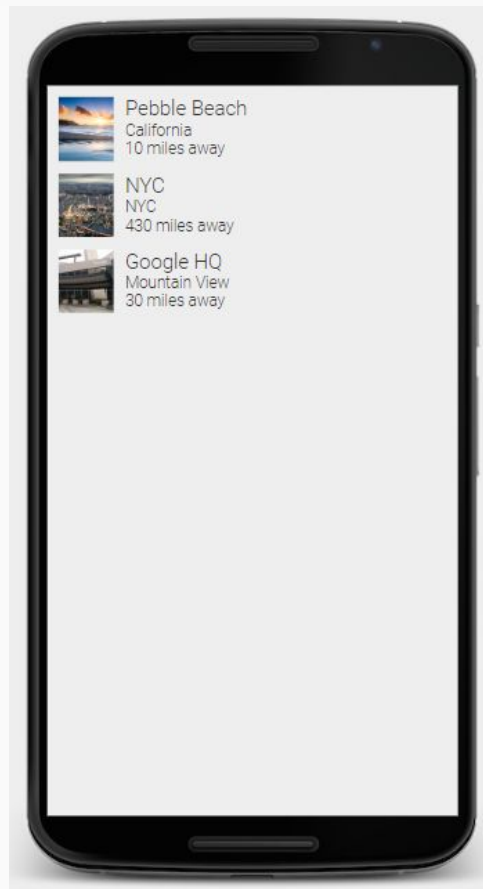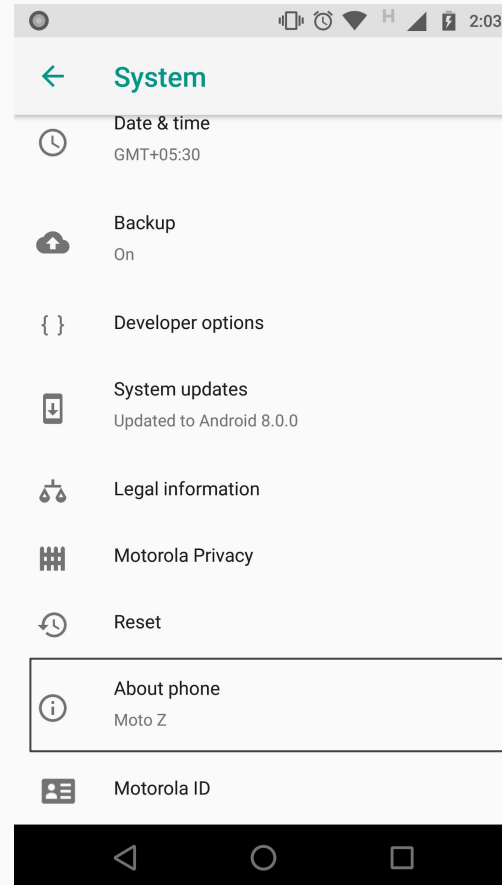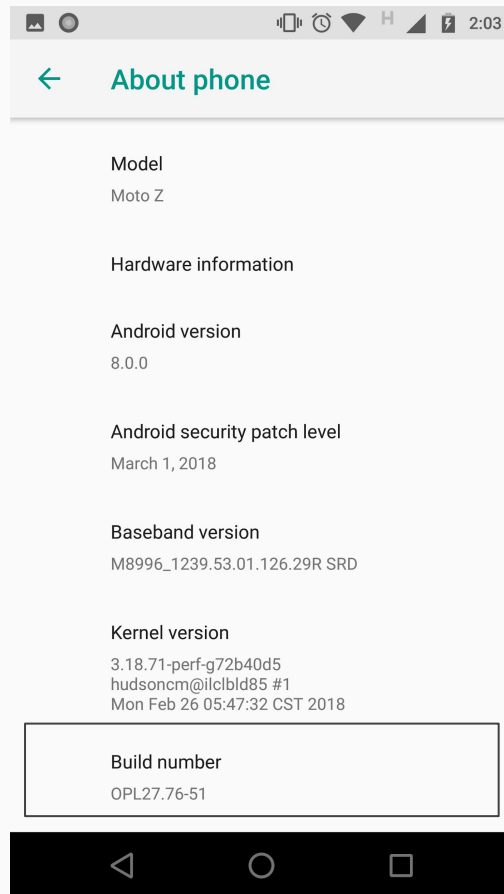
Practice Problem

Building/Deploying your First Android APP

Enable USB Debugging

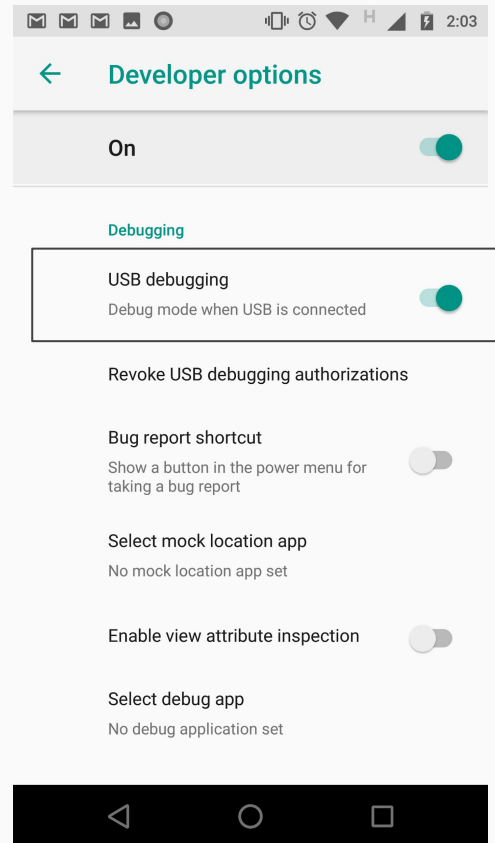Go to Settings and then
click on About phone

Enable USB Debugging

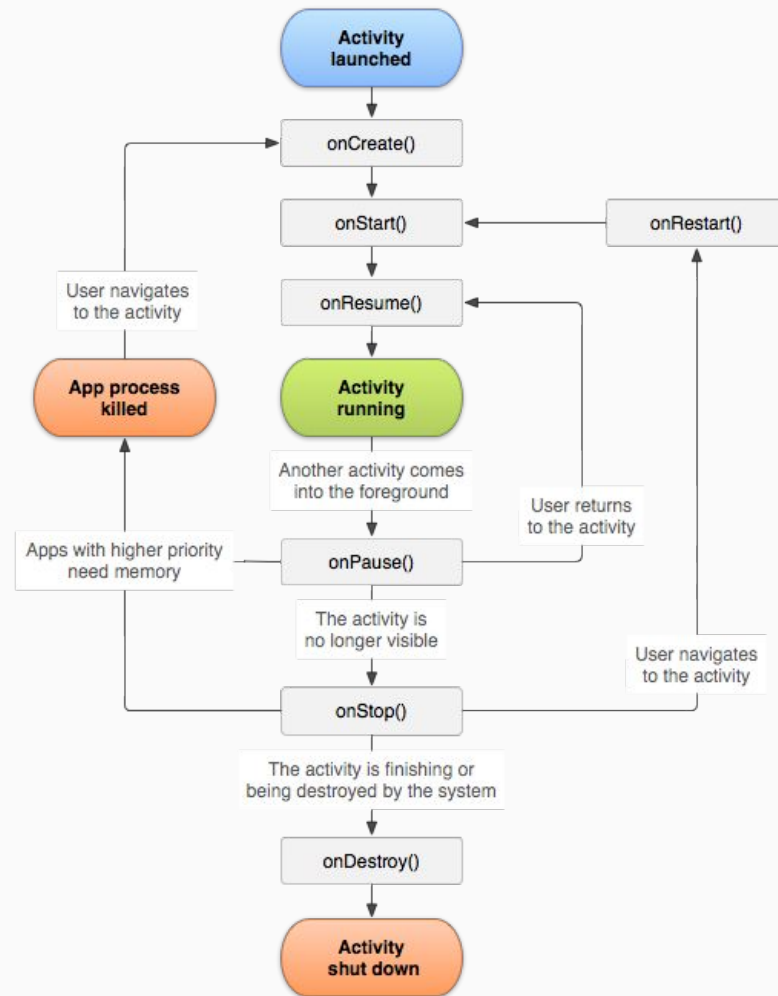Tap on Build Number multiple times till you get the message "You are a developer"

Enable USB Debugging

Now navigate to settings and enable USB debugging

Android Activity Lifecycle

```
package com.example.lamefreaks.myapplication;

        import android.support.v7.app.AppCompatActivity;
        import android.os.Bundle;
        import android.view.View;
        import android.widget.TextView;
```

Import Declaration

```
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

}
```

onCreate is called

Renders the first Layout

Android Studio ~~Time~~ !!! Tomorrow

The End