دورة الأندرويد للمبتدئين
Android Beginner Course

Activities

الدرس السابع
Lesson 7

Hello Again ! مرحبا مجددا

Today we will dive into the world of activities in Android, the Building block of any application in the world.

Activity


High level view

Activities

What is an Activity?

- An Activity is an application component
- Represents one window, one hierarchy of views
- Typically fills the screen, but can be embedded in other activity or a appear as floating window
- Kotlin class, typically one activity in one file

What does an Activity do?

- Represents an activity, such as ordering groceries, sending email, or getting directions

- Handles user interactions, such as button clicks, text entry, or login verification

- Can start other activities in the same or other apps

- Has a life cycle—is created, started, runs, is paused, resumed, stopped, and destroyed

Examples
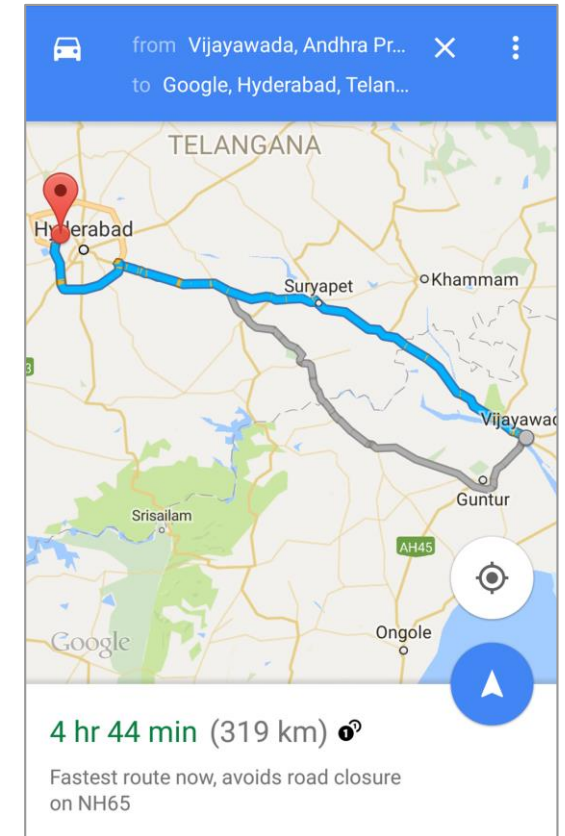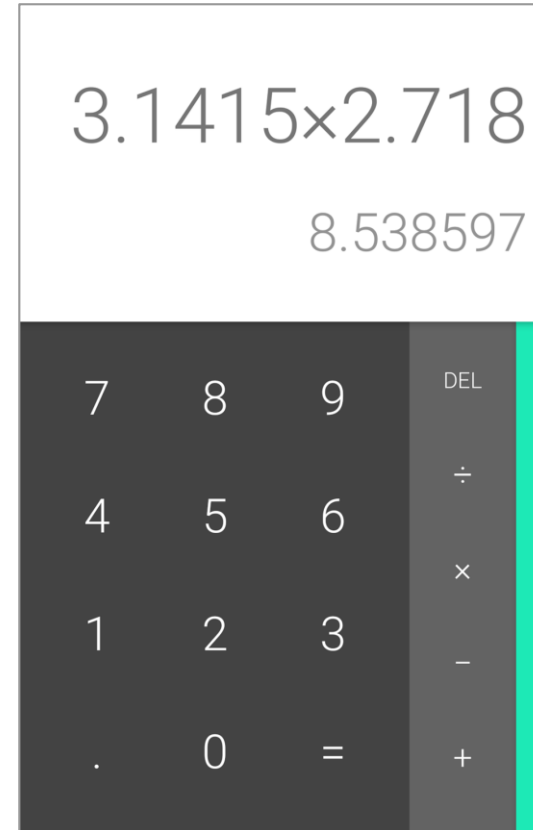
Apps and activities

- Activities are loosely tied together to make up an app
- First activity user sees is typically called "main activity"
- Activities can be organized in parent-child relationships in the Android manifest to aid navigation

Layouts and Activities

- An activity typically has a UI layout
- Layout is usually defined in one or more XML files
- Activity "inflates" layout as part of being created

The How

Implementing Activities

Activities

Implement new activities

1. Define layout in XML
2. Define Activity Java class
   - ✓ extends AppCompatActivity
3. Connect Activity with Layout
   - ✓ Set content view in onCreate()
4. Declare Activity in the Android manifest

1. Define layout in XML

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Let's Shop for Food!" />
</RelativeLayout>
```

2. Define Activity Kotlin class

```kotlin
public class MainActivity : AppCompatActivity {

  override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
    }
}
```

3. Connect activity with layout

```kotlin
public class MainActivity : AppCompatActivity {

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
}
```

Resource   is layout   in this XML file

4. Declare main activity in manifest

```
<activity android:name=".MainActivity">
```

4. Declare activity in Android manifest

Main Activity needs to include intent to start from launcher icon

```
<activity android:name=".MainActivity">
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>
```

Find Me :D

How find the views

Activities

FindViewById

To find a view in the XML file you need to knows it's ID, and then a method called FindViewById take the rest of the work to get the view and store it in the appropriate variable.

```
val button = findViewById(R.id.btn)
```

Practice التمرين

Lets Dive in Into The Android Studio.

Coding Interview

Given an unsigned 8-bit integer, swap its even and odd bits.
The 1st and 2nd bit should be swapped, the 3rd and 4th bit should be swapped, and so on.

For example, 10101010 should be 01010101. 11100010 should be 11010001.

Can you do this in one line?

شكرا لحضوركم
Thank You For Assisting