BroadcastActivity:

Step 1. Create an android app, For creating an Android app with kotlin read this tutorial.

Step 2. Creating Broadcast Receiver

Create and extend Subclass and BroadcastReceiver implement. onReceive(Context, Intent)

where onReceive method each message is received as an Intent object parameter.

MyReceiver.kt:

```
import android.content.BroadcastReceiver

import android.content.Context

import android.content.Intent

import android.widget.Toast


class MyReceiver : BroadcastReceiver() {


override fun onReceive(context: Context, intent: Intent) {

// TODO: This method is called when the BroadcastReceiver is receiving

// an Intent broadcast.

Toast.makeText(context, "Broadcast : Flight mode changed.",

Toast.LENGTH_LONG).show() }
```

Step 3.Declare a broadcast receiver in the manifest file add the element in your app's manifest. Here is code snap

```
<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

package="in.eyehunt.androidbroadcasts">

<application

android:allowBackup="true"

android:icon="@mipmap/ic_launcher"

android:label="@string/app_name"
```

```xml
android:roundIcon="@mipmap/ic_launcher_round"

android:supportsRtl="true"

android:theme="@style/AppTheme">

<activity android:name=".MainActivity">

<intent-filter>

<action android:name="android.intent.action.MAIN" />


<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

</activity>


<receiver

android:name=".MyReceiver"

android:enabled="true"

android:exported="true">


<intent-filter>

<action android:name="android.intent.action.AIRPLANE_MODE"/>

</intent-filter>

</receiver>

</application>


</manifest>
```

Note: If the app is not running and broadcast receiver declared in AndroidManifest.xml, then

the system will launch your app.

Step 4. MainActivity code, no needs to do anything

MainActivity.kt:

```kotlin
import android.support.v7.app.AppCompatActivity

import android.os.Bundle

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_main)

}

}
```

Step 5. Add following code in main_activity.xml

add <ImageView> and <TextView>widget layout file.

main_activity.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>

<android.support.constraint.ConstraintLayout

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:app="http://schemas.android.com/apk/res-auto"

xmlns:tools="http://schemas.android.com/tools"

android:layout_width="match_parent"


android:layout_height="match_parent"

android:background="@color/colorPrimary"

tools:context="in.eyehunt.androidbroadcasts.MainActivity">


<ImageView

android:id="@+id/imageView"
```

```xml
android:layout_width="40dp"

android:layout_height="40dp"

android:layout_margin="8dp"

android:layout_marginTop="16dp"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:srcCompat="@mipmap/baseline_airplanemode_active_white_24" />



<TextView

android:id="@+id/textView"

android:layout_width="300dp"

android:layout_height="36dp"

android:layout_marginEnd="8dp"

android:layout_marginStart="8dp"

android:gravity="center_vertical"

android:text="Flight Mode"

android:textColor="@color/colorWhite"

android:textSize="24dp"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toEndOf="@+id/imageView"

app:layout_constraintTop_toTopOf="@+id/imageView" />

</android.support.constraint.ConstraintLayout>
```

Create and manage virtual devices:

To open the AVD Manager, do one of the following:

• Select Tools > AVD Manager.

• Click AVD Manager AVD Manager icon in the toolbar.

Programming Resources

Android Resources: (Color, Theme, String, Drawable, Dimension, Image).

Color.xml

```
<?xml version="1.0" encoding="utf-8"?>

<resources>

<color name="colorPrimary">#008577</color>

<color name="colorPrimaryDark">#00574B</color>

<color name="colorAccent">#D81B60</color>

</resources>
```

Theme:

Style.xml

```
<resources>

<!-- Base application theme. -->

<style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">

<!-- Customize your theme here. -->

<item name="colorPrimary">@color/colorPrimary</item>

<item name="colorPrimaryDark">@color/colorPrimaryDark</item>

<item name="colorAccent">@color/colorAccent</item>

</style>

</resources>
```

String.xml:

```
<resources>

<string name="app_name">hello</string>

<string name="numbers">

<item>1</item>
```

```
<item>2</item>

<item>3</item>

</item>

</string>

</resources>
```

Drawable:

1. Right click on drawable folder

2. Copy the image if you want to create image drawable

3. Paste that image file inside the drawable folder

Dimension, Image:

Main_Activity.kt:

```kotlin
package com.rohit.drwable

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_main)

}

}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>

<LinearLayout

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"
```

```
xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity"

android:background="@drawable/one">


<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Hello World!"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent"/>

</LinearLayout>
```

PRACTICAL 4

Programs related to different Layouts

Coordinate, Linear, Relative, Table, Absolute, Frame, List View, Grid View.

1. linear layout:

```
<?xml version="1.0" encoding="utf-8"?>

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout_width="fill_parent"

android:layout_height="fill_parent"

android:orientation="vertical" >

<Button android:id="@+id/btnStartService"

android:layout_width="270dp"

android:layout_height="wrap_content"
```

```
android:text="start_service"/>

<Button android:id="@+id/btnPauseService"

android:layout_width="270dp"

android:layout_height="wrap_content"

android:text="pause_service"/>


<Button android:id="@+id/btnStopService"

android:layout_width="270dp"

android:layout_height="wrap_content"

android:text="stop_service"/>

</LinearLayout>
```

2. Relative:

```
<RelativeLayout

xmlns:android="http://schemas.android.com/apk/res/android"

android:layout_width="fill_parent"

android:layout_height="fill_parent"

android:paddingLeft="16dp"

android:paddingRight="16dp" >

<EditText

android:id="@+id/name"

android:layout_width="fill_parent"

android:layout_height="wrap_content"

android:hint="@string/reminder" />

<LinearLayout

android:orientation="vertical"

android:layout_width="fill_parent"

android:layout_height="fill_parent"

android:layout_alignParentStart=

<Button
```

```xml
android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="New Button"

android:id="@+id/button2" />
</LinearLayout>
</RelativeLayout>
```

3. Table:

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">
<TableLayout android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_marginLeft="50dp"

android:layout_marginTop="150dp">
<TableRow>
<Button

android:id="@+id/btn1"

android:text="1"

android:layout_gravity="center"

/>
<Button
```

```xml
        android:id="@+id/btn2"

        android:text="2"

        android:layout_gravity="center"

        />

        <Button

        android:id="@+id/btn3"

        android:text="3"

        android:layout_gravity="center"

        />

    </TableRow>

    <TableRow>
    />

        <Button android:id="@+id/btn4"

        android:text="4"

        android:layout_gravity="center"

        android:id="@+id/btn5"

        android:text="5"

        android:layout_gravity="center"

        /><Button

        android:id="@+id/btn6"

        android:text="6"

        android:layout_gravity="center"

        />

    </TableRow>

    <TableRow>

        <Button

        android:id="@+id/btn7"

        android:text="7"

        android:layout_gravity="center"

        />
```

```xml
<Button

android:id="@+id/btn8"

android:text="8"

android:layout_gravity="center"

/><Button

android:id="@+id/btn9"

android:text="9"

android:layout_gravity="center"

/>
</TableRow>

</TableLayout>

</LinearLayout>
```

Activity_main.kt

```kotlin
package com.r.table_view

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

import kotlinx.android.synthetic.main.activity_main.*

import org.jetbrains.anko.toast

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_main)

btn1.setOnClickListener {

toast("1")

}

btn2.setOnClickListener {
```

```
toast("2")

}

btn3.setOnClickListener {

toast("3")

}

btn4.setOnClickListener {

toast("4")

}

btn5.setOnClickListener {

toast("5")

}

btn6.setOnClickListener {

toast("6")

}
```

4. Frame:

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>

<FrameLayout

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"

tools:context=".MainActivity">

<ImageView android:layout_width="match_parent"

android:layout_height="match_parent"

android:src="@drawable/red"
```

```xml
android:scaleType="centerCrop"/>
<TextView
android:textSize="100dp"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Hello World!"
android:gravity="center"
android:textColor="@color/rohit"
android:layout_marginTop="220dp"
/>
</FrameLayout>
```

Activity_main.kt

```kotlin
package com.rohit.frame_layout
import android.support.v7.app.AppCompatActivity
import android.os.Bundle
class MainActivity : AppCompatActivity() {
override fun onCreate(savedInstanceState: Bundle?) {
super.onCreate(savedInstanceState)
setContentView(R.layout.activity_main)
}
}
```

5. List View:

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
```

```xml
<LinearLayout

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

<Button android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:id="@+id/btn"


android:text="Click me to view list"

android:layout_marginTop="200dp"

android:layout_marginLeft="90dp"/>

</LinearLayout>
```

String.xml

```xml
<resources>

<string name="app_name">list</string>

<array name="insert_list">

<item>one</item>

<item>two</item>

<item>three</item>

<item>four</item>

<item>five</item>

<item>six</item>

<item>seven</item>

<item>eight</item>

<item>nine</item>

<item>ten</item>
```

</array>

</resources>

Activity_list_view.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<ListView

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".list_view" android:entries="@array/insert_list">
</ListView>
```

List_view.kt:

```kotlin
package com.rohit.list

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

class list_view : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_list_view)

}
```

main_Activity.kt

```kotlin
package com.rohit.list
```

```kotlin
import android.content.Intent

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

import kotlinx.android.synthetic.main.activity_main.*

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_main)

btn.setOnClickListener {

val intent =Intent(this, list_view::class.java)

startActivity(intent)

}

}
```

6. Grid layout:

```xml
<?xml version="1.0" encoding="utf-8"?>

<GridLayout

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity"

android:rowCount="3"

android:columnCount="3"

android:padding="20dp">

<Button

android:layout_width="110dp"

android:layout_height="100dp"
```

```xml
    android:text="1"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="2"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="3"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="4"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="5"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="6"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="7"/>
<Button
    android:layout_width="110dp"
    android:layout_height="100dp"
    android:text="8"/>
```

```xml
<Button

android:layout_width="110dp"

android:layout_height="100dp"

android:text="9"/>

</GridLayout>
```

mainActvity.kt:

```kotlin
package com.rohit.grid_layout

import android.support.v7.app.AppCompatActivity

import android.os.Bundle

class MainActivity : AppCompatActivity() {

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity_main)

}

}
```