- 3. Design an application to gain proficiency in the Android user interface library.
- a) Declare layouts statically as an XML resource.
- b) Utilize various types of Layouts in Android

#### **Step 1: Create a New Project**

## Step 2: Working with the activity\_main.xml file

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:custom="http://schemas.android.com/apk/res-auto"
   android:layout_width="match_parent"
   android:layout_height="match parent"
   android:orientation="vertical">
   <TextView
        android:layout width="wrap content"
        android:layout_height="wrap_content"
       android:layout_marginTop="80dp"
       android:layout_marginLeft="100dp"
       android:text="Android Layout Demo"
       android:textColor="#E91E63"
       android:textSize="20sp" />
    <Button
       android:id="@+id/gridLayoutButton"
        android:layout width="wrap content"
        android:layout_height="wrap content"
        android:text="Grid Layout Demo" />
    <Button
       android:id="@+id/tableLayoutButton"
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:text="Table Layout Demo" />
</LinearLayout>
```

#### Step 3: Create a new XML file

Go to app > res > layout > right-click > New > Layout Resource File and create a new layout file and name this file as grid\_layout\_example.xml

```
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:columnCount="2"
    android:orientation="horizontal"
    android:rowCount="4">

<ImageButton</pre>
```

```
android:id="@+id/imageButton1"
        android:layout width="160dp"
        android:layout height="90dp"
        android: layout gravity="center vertical"
        android:src="@drawable/scene1" />
    <ImageButton</pre>
        android:id="@+id/imageButton2"
        android:layout width="160dp"
        android:layout_height="90dp"
        android:layout gravity="center vertical"
        android:src="@drawable/scene2" />
    <ImageButton</pre>
        android:id="@+id/imageButton3"
        android:layout width="160dp"
        android:layout_height="90dp"
        android:layout gravity="center vertical"
        android:src="@drawable/scene3" />
    <ImageButton</pre>
        android:id="@+id/imageButton4"
        android:layout width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene4" />
    <ImageButton</pre>
        android:id="@+id/imageButton5"
        android:layout width="160dp"
        android:layout height="90dp"
        android: layout gravity="center vertical"
        android:src="@drawable/scene5" />
    <ImageButton</pre>
        android:id="@+id/imageButton6"
        android:layout width="160dp"
        android:layout height="90dp"
        android:layout gravity="center vertical"
        android:src="@drawable/scene6" />
</GridLayout>
```

# Go to app > res > drawable >

Add all the images in scene1 to scene6 (Download the any image from google and it here by naming it as scene1, scene2 etc...)

## Step 4: Create a new XML file

Go to app > res > layout > right-click > New > Layout Resource File and create a new layout file and name this file

#### as table layout example.xml

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

<!-- Add your table rows and views here -->
```

```
<TextView
    android:id="@+id/txt"
    android:layout_width="wrap content"
    android:layout height="wrap content"
    android:text="ICC Ranking of Players:"
    android:textSize = "20dp"
    android:textStyle="bold">
</TextView>
<TableRow android:background="#51B435" android:padding="10dp">
    <TextView
        android:layout_width="wrap_content"
        android: layout height="wrap content"
        android:layout weight="1"
        android:text="Rank" />
    <TextView
        android:layout width="wrap content"
        android:layout_height="wrap_content"
        android:layout weight="1"
        android:text="Player" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout_weight="1"
        android:text="Team" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="Points" />
</TableRow>
<TableRow android:background="#F0F7F7" android:padding="5dp">
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="1" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="Virat Kohli" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="IND" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="895" />
</TableRow>
<TableRow android:background="#F0F7F7" android:padding="5dp">
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
```

```
android:text="2" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="Rohit Sharma" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="IND" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout weight="1"
        android:text="863" />
</TableRow>
<TableRow android:background="#F0F7F7" android:padding="5dp">
    <TextView
        android:layout width="wrap content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="3" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout_weight="1"
        android:text="Faf du Plessis" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="PAK" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="834" />
</TableRow>
<TableRow android:background="#F0F7F7" android:padding="5dp">
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
       android:text="4" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap_content"
        android:layout weight="1"
        android:text="Steven Smith" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout weight="1"
        android:text="AUS" />
    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
```

```
android:layout weight="1"
            android:text="820" />
    </TableRow>
    <TableRow android:background="#F0F7F7" android:padding="5dp">
        <TextView
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:layout weight="1"
            android:text="5" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout weight="1"
            android:text="Ross Taylor" />
        <TextView
            android:layout width="wrap content"
            android:layout_height="wrap content"
            android:layout_weight="1"
            android:text="NZ" />
        <TextView
            android:layout width="wrap content"
            android:layout_height="wrap_content"
            android:layout weight="1"
            android:text="817" />
    </TableRow>
</TableLayout>
```

## Step 5: Working with the MainActivity.java file

```
package com.example.program3;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity main);
        Button gridActivityButton = findViewById(R.id.gridLayoutButton);
        gridActivityButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Start the new activity
                Intent intent = new Intent (MainActivity.this,
```

# Step 5: Working with the AndroidManifest.xml file

Go to app > manifests > AndroidManifest.xml

Add these two lines of code along with existing

```
<activity android:name=".GridActivity"></activity>
<activity android:name=".TableActivity"></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></activity></a
```

## **Output:**





