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

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

```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
```

```xml
        android:id="@+id/imageButton1"
        android:layout_width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene1" />
    <ImageButton
        android:id="@+id/imageButton2"
        android:layout_width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene2" />

    <ImageButton
        android:id="@+id/imageButton3"
        android:layout_width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene3" />
    <ImageButton
        android:id="@+id/imageButton4"
        android:layout_width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene4" />

    <ImageButton
        android:id="@+id/imageButton5"
        android:layout_width="160dp"
        android:layout_height="90dp"
        android:layout_gravity="center_vertical"
        android:src="@drawable/scene5" />
    <ImageButton
        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**

```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 -->
```

```xml
<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"
```

```xml
            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"
```

```xml
                    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

```java
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,
```

```
GridActivity.class);
            startActivity(intent);
        }
    });

    Button tableActivityButton = findViewById(R.id.tableLayoutButton);
    tableActivityButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            // Start the new activity
            Intent intent = new Intent(MainActivity.this,
TableActivity.class);
            startActivity(intent);
        }
    });
  }
}
```

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>
```

Output: