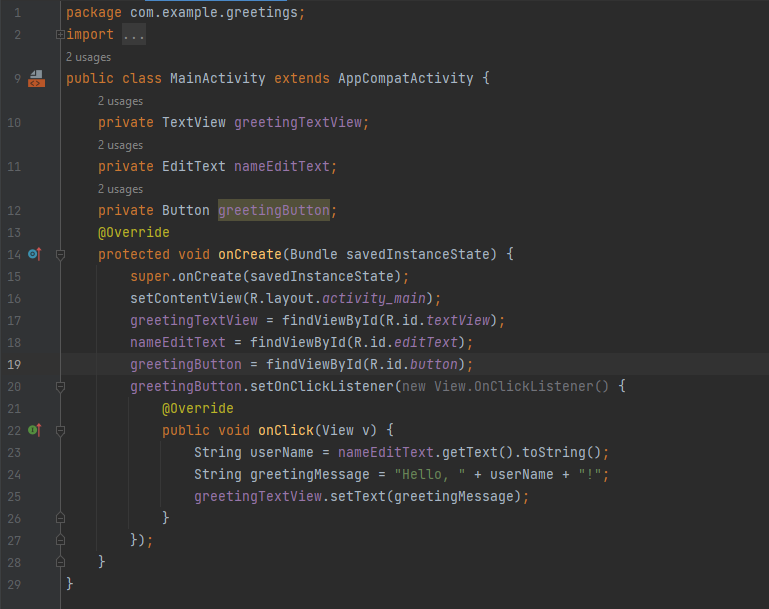
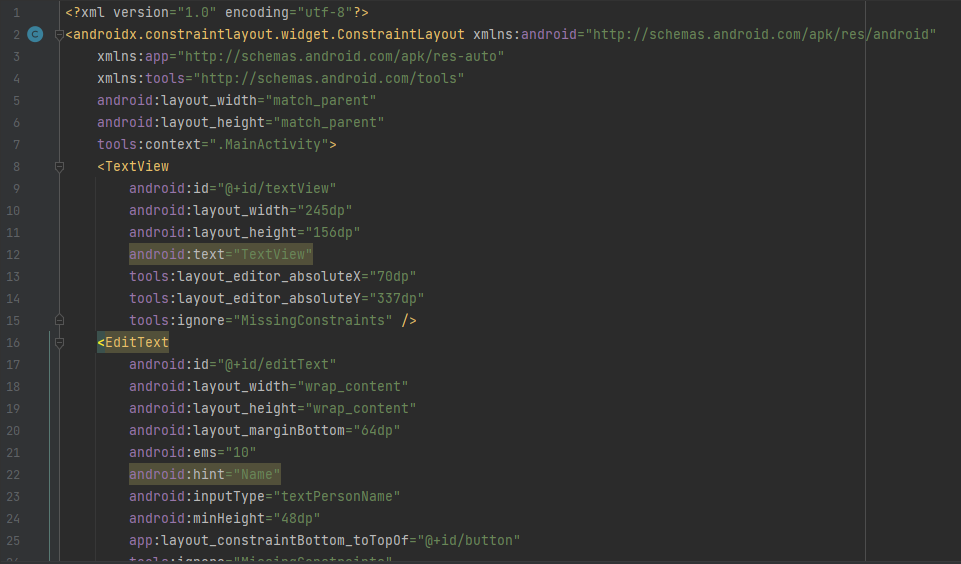
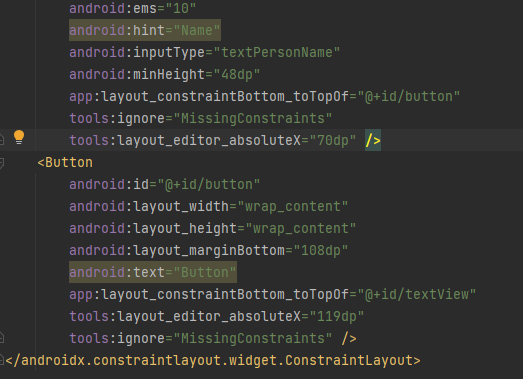
**Practical 1: Activity**

**Problem Statement: Write an Android application that accepts user’s name and displays a greeting message for the user**

**🡪JAVA:**

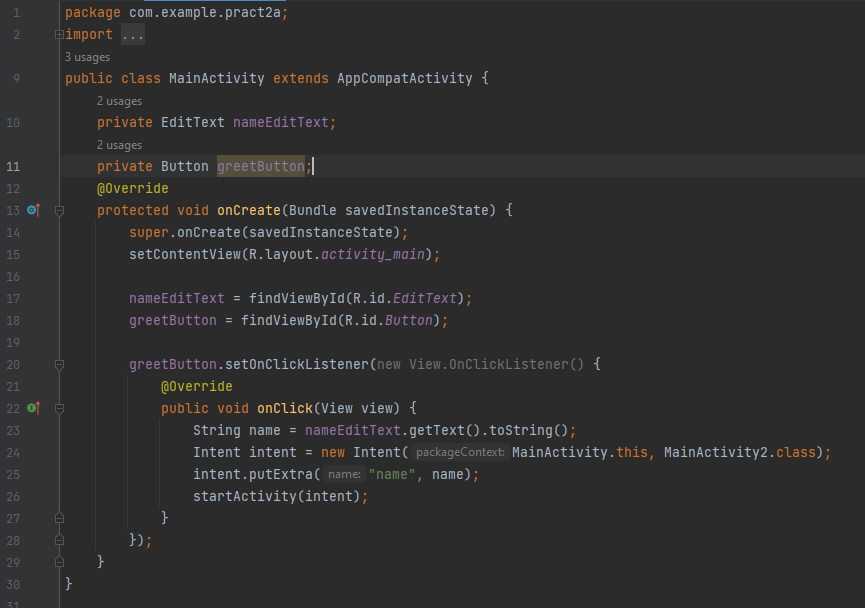
**XML:** ****

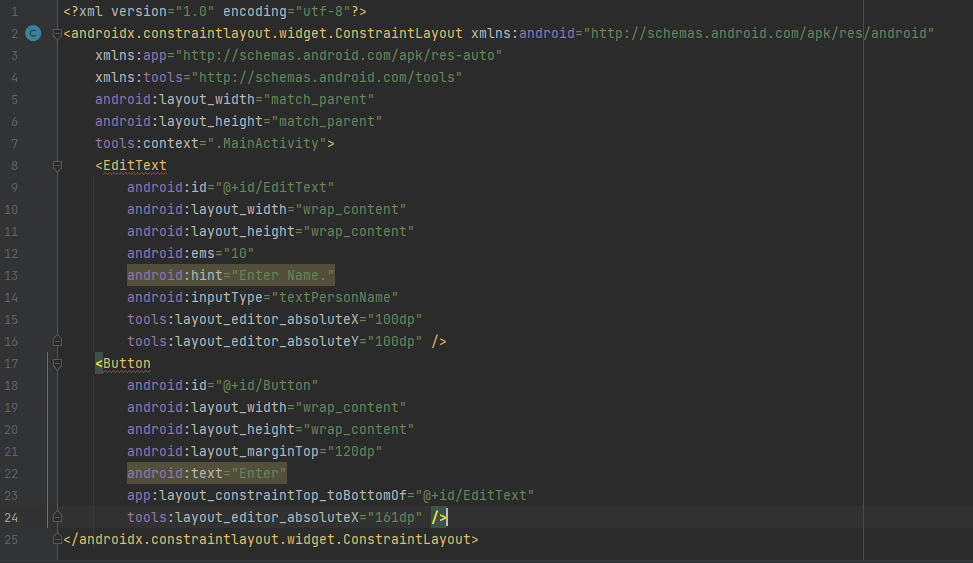
****

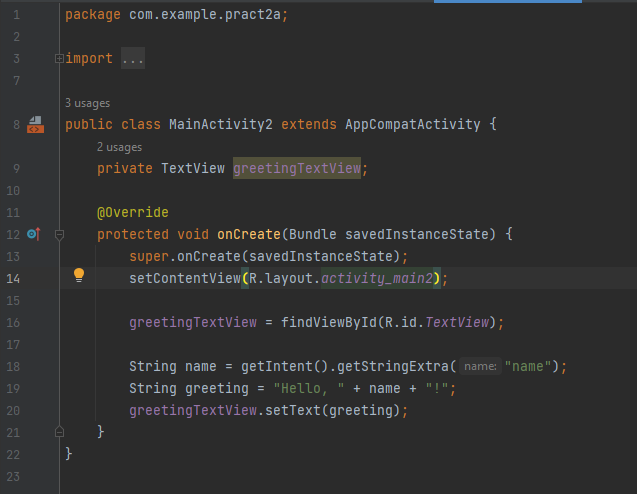
**Practical 2: Explicit and Implicit Intents**

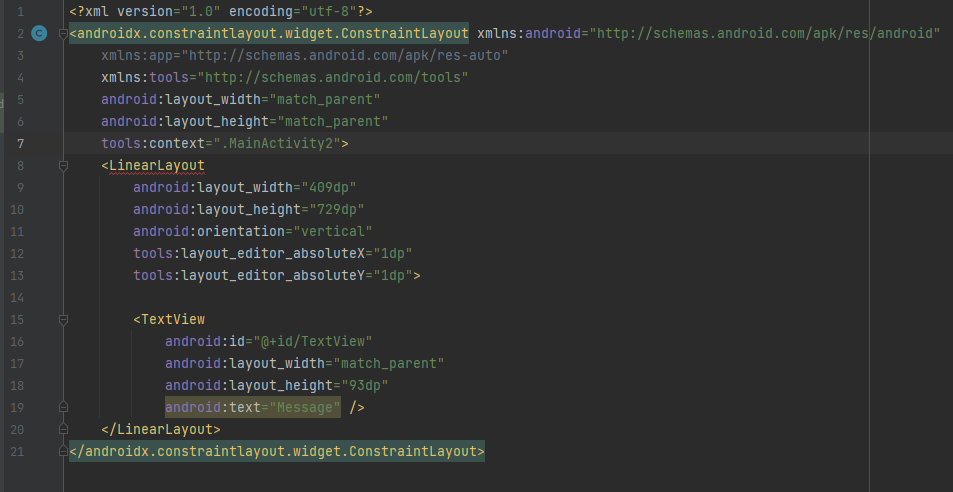
**Problem Statement:**

**1.Write an Android application that accepts’ user’s name from one activity and displays a greeting message for the user on the other activity**

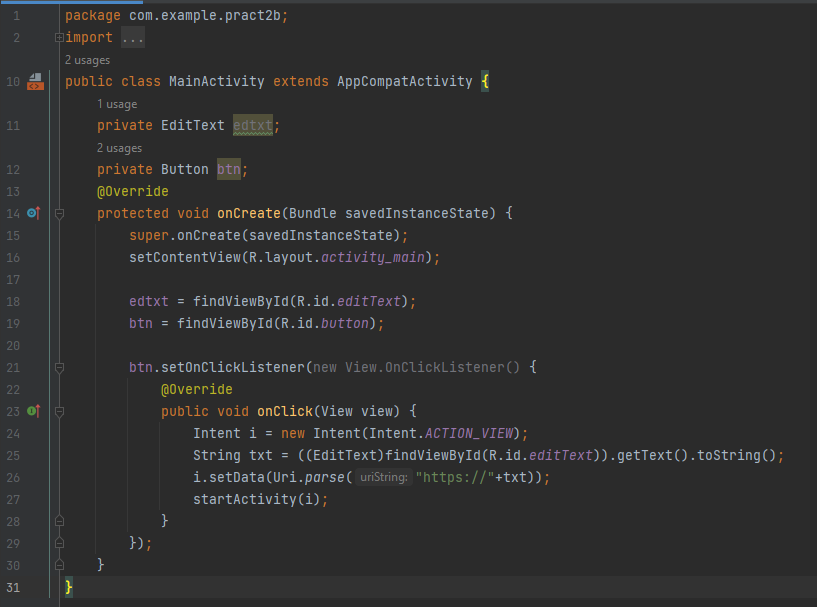
**🡪JAVA 1:** ****

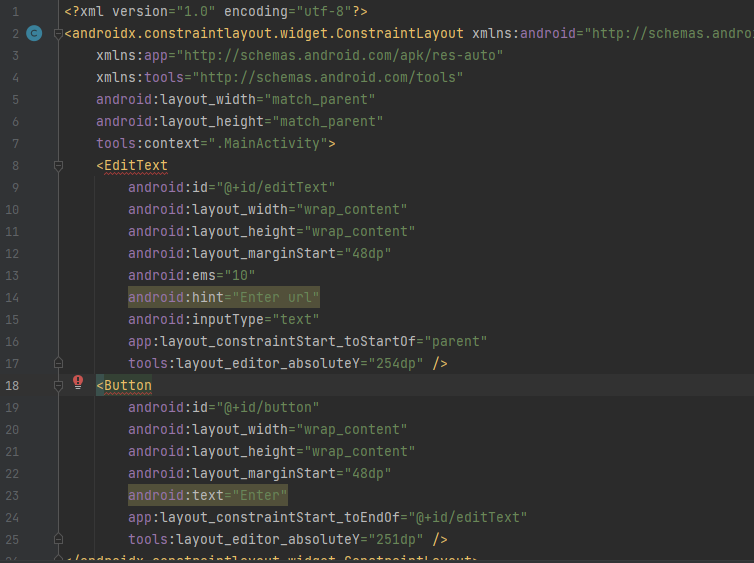
**XML1:** ****

**Java2:** ****

**XML2:** ****

**2. Write an Android application that accepts a website URL from the user and displays it using a web browser app**

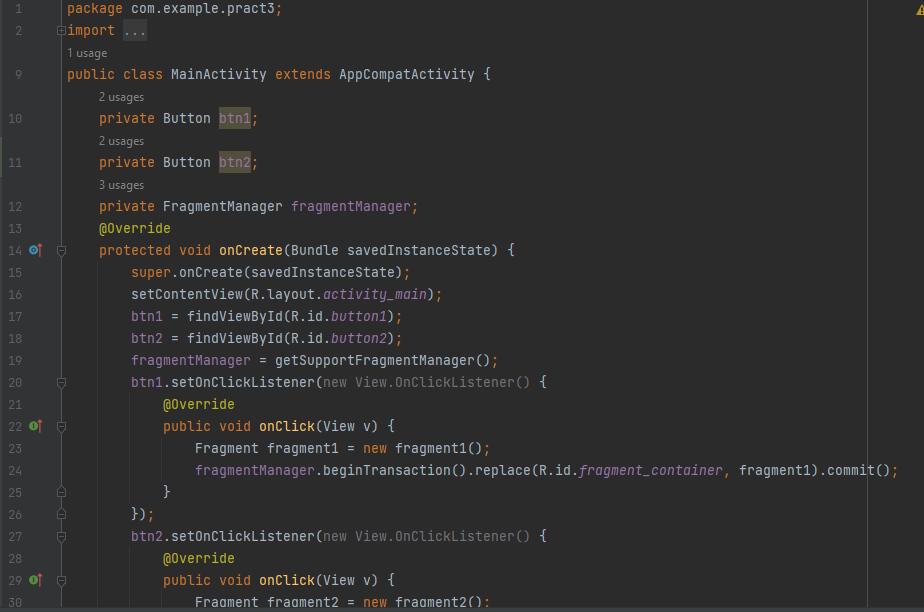
**­­🡪JAVA:** ****

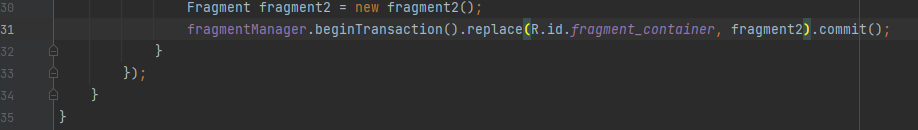
**XML:** ****

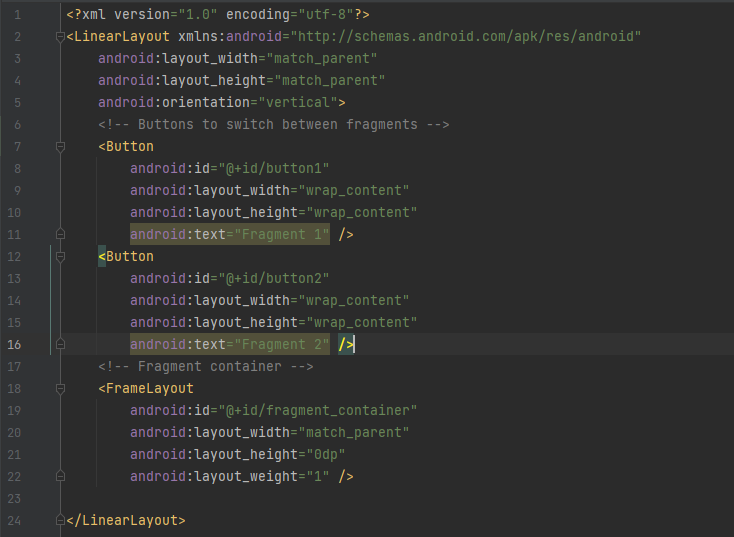
**AndroidManifests:** ****

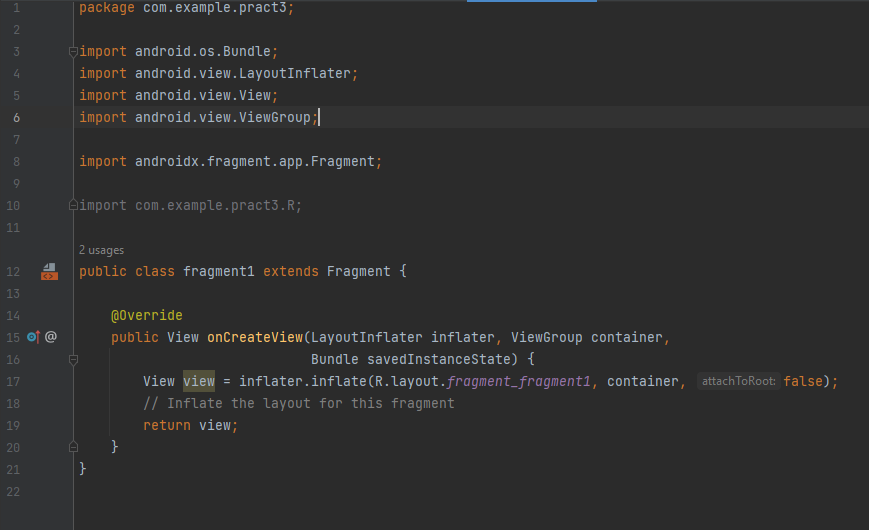
**Practical 3: Fragments**

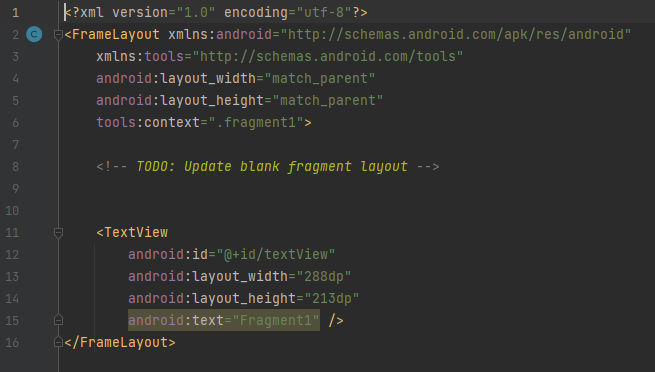
**Problem Statement: Write an Android application to switch fragments on a button click**

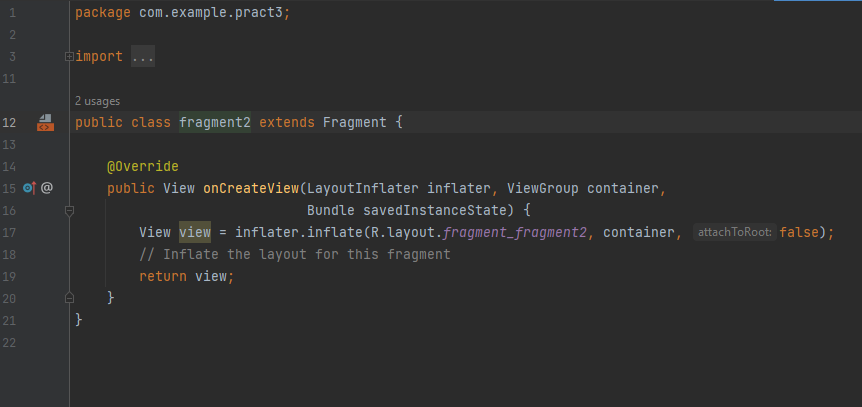
**🡪 MAIN JAVA:** ****

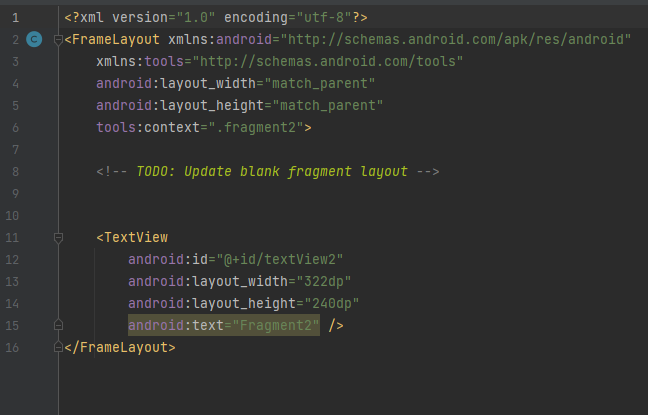
****

**MAIN XML:** ****

**Fragment 1 Java:** ****

**XML:** ****

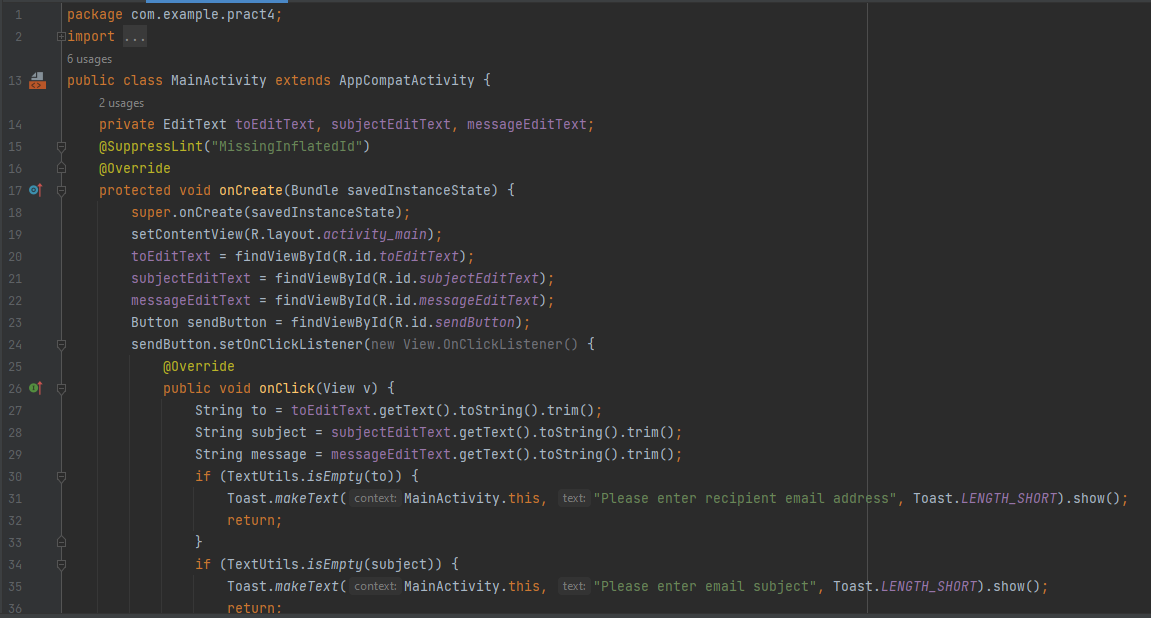
**Fragment2 java:** ****

**XML:** ****

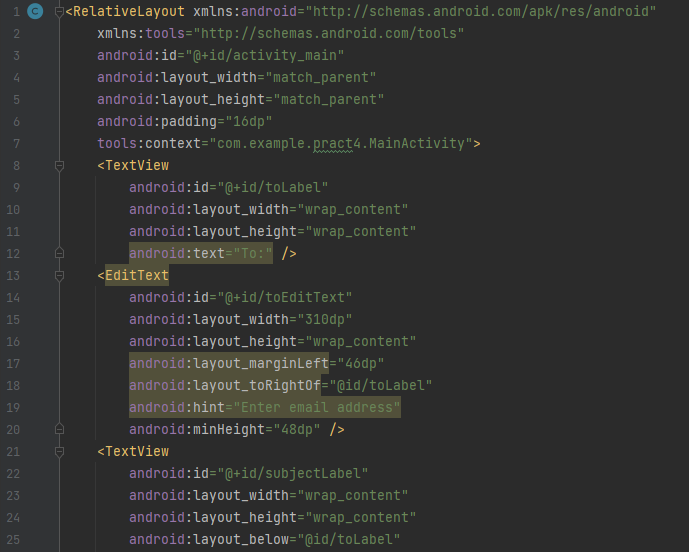
**Practical 4: Sending Email**

**Problem Statement: Write an Android application to send email using an Intent.**

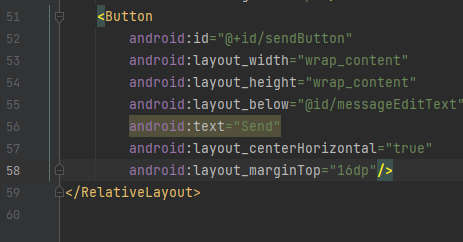
**🡪**

**JAVA:** ****

****

**XML:** ****

****

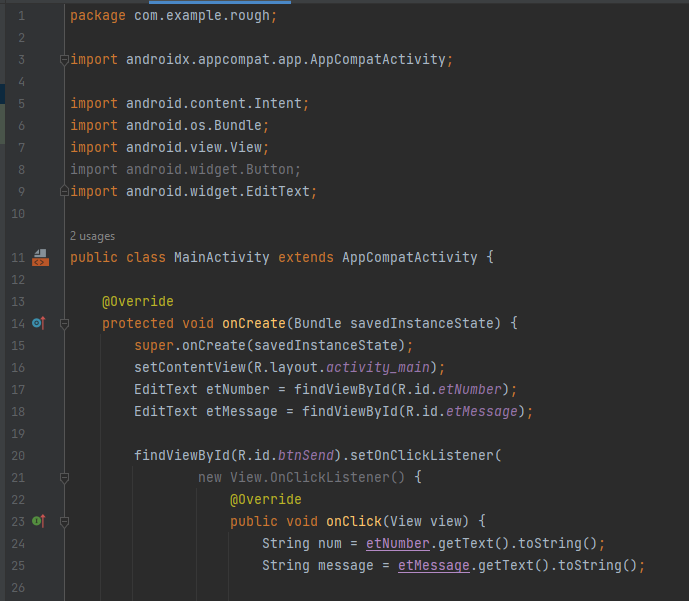
****

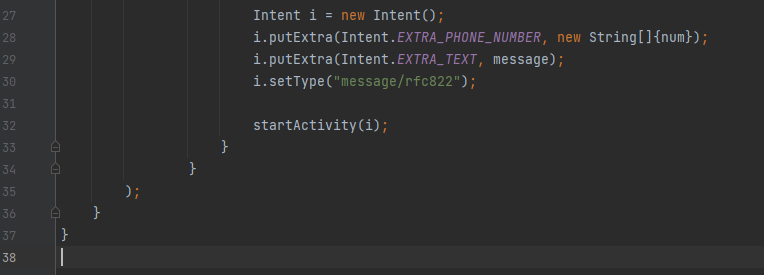
**AndroidManifests:** ****

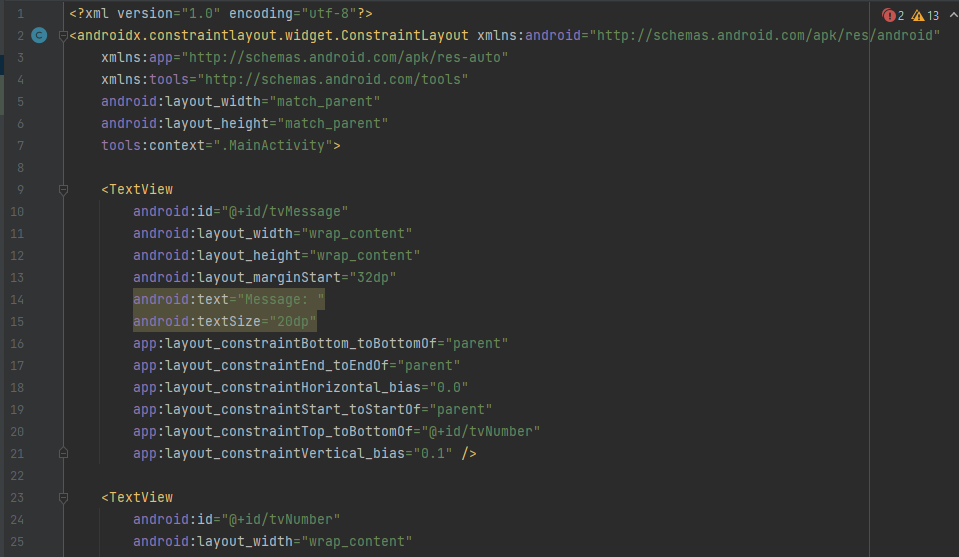
**Practical 5: Sending SMS**

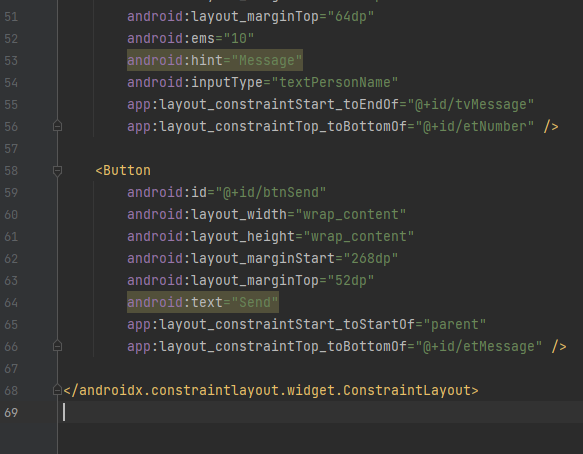
**Problem Statement:**

**1. Write an Android application to send SMS using an Intent.**

**🡪JAVA: **

****

**XMl:** ****

****

**2. Write an Android application to send SMS using SMSManager**

**🡪**

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <EditText        android:id="@+id/etNumber"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="101dp"        android:layout\_marginTop="50dp"        android:layout\_marginEnd="100dp"        android:ems="10"        android:hint="Number"        android:inputType="textPersonName"        android:minHeight="48dp"        app:layout\_constraintEnd\_toEndOf="parent"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <EditText        android:id="@+id/etMessage"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="101dp"        android:layout\_marginTop="32dp"        android:layout\_marginEnd="100dp"        android:ems="10"        android:hint="Message"        android:inputType="textPersonName"        android:minHeight="48dp"        app:layout\_constraintEnd\_toEndOf="parent"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etNumber" />     <Button        android:id="@+id/btnSend"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="160dp"        android:layout\_marginTop="60dp"        android:text="Send"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etMessage" /> </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.smsmanagerproject;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.telephony.SmsManager; import android.view.View; import android.widget.EditText; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);        EditText etNumber = findViewById(R.id.etNumber);        EditText etMessage = findViewById(R.id.etMessage);        findViewById(R.id.btnSend).setOnClickListener(                new View.OnClickListener() {                    @Override                    public void onClick(View view) {                        try {                            SmsManager smgr = SmsManager.getDefault();                            smgr.sendTextMessage(etNumber.getText().toString(), null, etMessage.getText().toString(), null, null);                            Toast.makeText(MainActivity.this, "SMS Sent Successfully", Toast.LENGTH\_SHORT).show();                        } catch(Exception e) {                            Toast.makeText(MainActivity.this, "SMS Failed to send", Toast.LENGTH\_SHORT).show();                        }                    }                }        );    } } |

**Practical 6: Action Bar and Options Menu**

**Problem Statement:**

**Write an Android application to customise the action bar of an app.**

**🡪**AndroidManifest.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <manifest xmlns:android="http://schemas.android.com/apk/res/android"    xmlns:tools="http://schemas.android.com/tools">    <application        android:title="@string/app\_name"        android:allowBackup="true"        android:dataExtractionRules="@xml/data\_extraction\_rules"        android:fullBackupContent="@xml/backup\_rules"        android:icon="@mipmap/ic\_launcher"        android:label="@string/app\_name"        android:supportsRtl="true"        android:theme="@style/Theme.ActionBar"        tools:targetApi="31">        <activity            android:name=".MainActivity"            android:exported="true">            <intent-filter>                <action android:name="android.intent.action.MAIN" />                 <category android:name="android.intent.category.LAUNCHER" />            </intent-filter>        </activity>    </application> </manifest> |

main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <menu xmlns:app="http://schemas.android.com/apk/res-auto"    xmlns:android="http://schemas.android.com/apk/res/android">     <item        android:id="@+id/refresh"        android:title="refresh"        app:showAsAction="ifRoom" />    <item        android:id="@+id/search"        android:icon="@android:drawable/ic\_menu\_search"        android:title="Search"        app:actionViewClass="android.widget.SearchView"        app:showAsAction="ifRoom" />     <item        android:id="@+id/settings"        android:orderInCategory="100"        android:title="Settings"        app:showAsAction="never" />  </menu> |

MainActivity.java

|  |
| --- |
| package com.example.actionbar;  import androidx.annotation.NonNull; import androidx.appcompat.app.ActionBar; import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.Menu; import android.view.MenuItem;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         ActionBar actionBar = getSupportActionBar();         actionBar.setTitle("Action Bar");        actionBar.setSubtitle("Design a custom Action Bar");         actionBar.setIcon(R.mipmap.ic\_launcher);        actionBar.setDisplayUseLogoEnabled(true);        actionBar.setDisplayShowHomeEnabled(true);    }     @Override    public boolean onCreateOptionsMenu(Menu menu) {        getMenuInflater().inflate(R.menu.main, menu);        return super.onCreateOptionsMenu(menu);    }     @Override    public boolean onOptionsItemSelected(@NonNull MenuItem item) {        switch(item.getItemId()) {            case R.id.search:                break;            case R.id.refresh:                break;            case R.id.settings:                break;        }        return super.onOptionsItemSelected(item);    } } |

**Practical 7: Views and ViewGroups**

**Problem Statement:**

**1. Write a program to change the text color of a TextView on a button click**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?>  <androidx.constraintlayout.widget.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"     tools:context=".MainActivity">     <TextView         android:id="@+id/tvColorChange"         android:layout\_width="wrap\_content"         android:layout\_height="wrap\_content"         android:layout\_marginStart="36dp"         android:layout\_marginTop="65dp"         android:text="Look for change in colour here"         android:textSize="25dp"         app:layout\_constraintStart\_toStartOf="parent"         app:layout\_constraintTop\_toTopOf="parent" />     <RadioGroup         android:id="@+id/rg"         android:layout\_width="wrap\_content"         android:layout\_height="wrap\_content"         android:layout\_marginStart="16dp"         android:layout\_marginTop="200dp"         android:layout\_marginEnd="8dp"         app:layout\_constraintEnd\_toEndOf="parent"         app:layout\_constraintStart\_toStartOf="parent"         app:layout\_constraintTop\_toTopOf="parent">         <RadioButton             android:id="@+id/rbRed"             android:layout\_width="match\_parent"             android:layout\_height="wrap\_content"             android:text="Red" />         <RadioButton             android:id="@+id/rbGreen"             android:layout\_width="match\_parent"             android:layout\_height="wrap\_content"             android:text="Green" />         <RadioButton             android:id="@+id/rbBlue"             android:layout\_width="match\_parent"             android:layout\_height="wrap\_content"             android:text="Blue" />     </RadioGroup>  </androidx.constraintlayout.widget.ConstraintLayout> |

AcitvityMain.java

|  |
| --- |
| package com.example.buttonclickcolorchange;  import androidx.appcompat.app.AppCompatActivity;  import android.graphics.Color;  import android.os.Bundle;  import android.provider.MediaStore;  import android.view.View;  import android.widget.Button;  import android.widget.RadioButton;  import android.widget.RadioGroup;  import android.widget.TextView;  import android.widget.Toast;  import org.w3c.dom.Text;  public class MainActivity extends AppCompatActivity {     @Override     protected void onCreate(Bundle savedInstanceState) {         super.onCreate(savedInstanceState);         setContentView(R.layout.*activity\_main*);         TextView tvColor = findViewById(R.id.*tvColorChange*);         RadioGroup rg = findViewById(R.id.*rg*);         RadioButton rbRed = findViewById(R.id.*rbRed*);         RadioButton rbGreen = findViewById(R.id.*rbGreen*);         RadioButton rbBlue = findViewById(R.id.*rbBlue*);         rg.setOnCheckedChangeListener(                 new RadioGroup.OnCheckedChangeListener() {                     @Override                     public void onCheckedChanged(RadioGroup radioGroup, int i) {                         if(rbRed.isChecked())                             tvColor.setTextColor(Color.*RED*);                         else if (rbGreen.isChecked())                             tvColor.setTextColor(Color.*GREEN*);                         else if (rbBlue.isChecked())                             tvColor.setTextColor(Color.*BLUE*);                         else                             tvColor.setTextColor(Color.*BLACK*);                     }                 }         );     }  } |

**2. Create a login activity using a FrameLayout and display in a Toast message if the login was successful or a failure.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <FrameLayout 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"    tools:context=".MainActivity" >     <TextView        android:id="@+id/tvUserName"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:text="Enter Username:"        android:textSize="20dp"        android:layout\_marginTop="50dp"        android:layout\_marginLeft="25dp"/>     <TextView        android:id="@+id/tvPasswd"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:text="Enter Password:"        android:textSize="20dp"        android:layout\_marginTop="130dp"        android:layout\_marginLeft="25dp"/>     <EditText        android:id="@+id/etUserName"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginLeft="185dp"        android:layout\_marginTop="35dp"        android:layout\_marginRight="10dp"        android:ems="10"        android:hint="Username"        android:inputType="textPersonName"        android:textSize="20dp" />     <EditText        android:id="@+id/etPasswd"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginLeft="185dp"        android:layout\_marginTop="120dp"        android:layout\_marginRight="10dp"        android:ems="10"        android:inputType="textPersonName"        android:minHeight="48dp"        android:hint="Password" />     <Button        android:id="@+id/btnLogin"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginLeft="25dp"        android:layout\_marginTop="195dp"        android:text="Login" /> </FrameLayout> |

MainActivity.java

|  |
| --- |
| package com.example.framelayoutlogin;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);        EditText etUserName = findViewById(R.id.etUserName);        EditText etPasswd = findViewById(R.id.etPasswd);        Button btnLogin = findViewById(R.id.btnLogin);         btnLogin.setOnClickListener(                new View.OnClickListener() {                    @Override                    public void onClick(View view) {                        if((etUserName.getText().toString() == "Udit") && etPasswd.getText().toString() == "pass@123")                            Toast.makeText(MainActivity.this, "Login Successful", Toast.LENGTH\_SHORT).show();                        else                            Toast.makeText(MainActivity.this, "Login Failed", Toast.LENGTH\_SHORT).show();                    }                }        );    } } |

**3. Write a program to enable and disable an edit text on click of a ToggleButton.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <TextView        android:id="@+id/tvHeader"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="24dp"        android:layout\_marginTop="48dp"        android:text="Click ToggleButton to enable/disable EditText"        android:textSize="18dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <EditText        android:id="@+id/etText"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="101dp"        android:layout\_marginTop="32dp"        android:ems="10"        android:hint="Enter Text"        android:inputType="textPersonName"        android:minHeight="48dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/tvHeader" />     <ToggleButton        android:id="@+id/tgBtn"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="163dp"        android:layout\_marginTop="40dp"        android:textOff="Enable"        android:textOn="Disable"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etText" /> </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.togglebuttonenabledisableedittext;  import androidx.appcompat.app.AppCompatActivity;  import android.annotation.SuppressLint; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.CompoundButton; import android.widget.EditText; import android.widget.ToggleButton;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);        EditText etText = findViewById(R.id.etText);        ToggleButton tgBtn = findViewById(R.id.tgBtn);         tgBtn.setOnCheckedChangeListener(                new CompoundButton.OnCheckedChangeListener() {                    @Override                    public void onCheckedChanged(CompoundButton compoundButton, boolean isChecked) {                        if(isChecked)                            etText.setEnabled(true);                        else                            etText.setEnabled(false);                    }                }        );     } } |

**4. Write a program to display a list of Indian states in a spinner. On click on a state, its capital should be displayed in a TextView.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <TextView        android:id="@+id/tvDisplay"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="56dp"        android:layout\_marginTop="64dp"        android:hint="State name displayed here"        android:textSize="25dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <Spinner        android:id="@+id/stateSpinner"        android:layout\_width="409dp"        android:layout\_height="wrap\_content"        android:layout\_marginStart="1dp"        android:layout\_marginTop="50dp"        android:layout\_marginEnd="1dp"        android:minHeight="48dp"        app:layout\_constraintEnd\_toEndOf="parent"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/tvDisplay" /> </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.spinnerstates;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.View; import android.widget.AdapterView; import android.widget.ArrayAdapter; import android.widget.Spinner; import android.widget.SpinnerAdapter; import android.widget.TextView;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         String[] stateNames = {"Maharashtra", "Gujarat", "Uttar Pradesh", "Karnataka"};        String[] capitalNames = {"Mumbai", "Gandhinagar", "Lucknow", "Bangalore"};         TextView tvDisplay = findViewById(R.id.tvDisplay);        Spinner spinner = findViewById(R.id.stateSpinner);        ArrayAdapter adapter = new ArrayAdapter<>(this, android.R.layout.simple\_spinner\_item, stateNames);        adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);        spinner.setAdapter(adapter);         spinner.setOnItemSelectedListener(                new AdapterView.OnItemSelectedListener() {                    @Override                    public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {                        String str = adapterView.getItemAtPosition(i).toString();                        tvDisplay.setText(capitalNames[i]);                    }                     @Override                    public void onNothingSelected(AdapterView<?> adapterView) {                     }                }        );     } } |

**5. Write a program to display a list of countries in a Listview. Listview should show only those countries that match the text entered in the edit text.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <LinearLayout 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:orientation="vertical"    tools:context=".MainActivity">     <ListView        android:id="@+id/list\_view"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="10dp"        android:layout\_marginEnd="10dp"        android:layout\_marginBottom="16dp" />     <EditText        android:id="@+id/etCountry"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="84dp"        android:layout\_marginTop="32dp"        android:ems="10"        android:hint="Country Name"        android:inputType="textPersonName"        android:textSize="20dp" />  </LinearLayout> |

MainActivity.java

|  |
| --- |
| package com.example.listviewcountries;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.text.Editable; import android.text.TextWatcher; import android.view.View; import android.widget.AdapterView; import android.widget.ArrayAdapter; import android.widget.EditText; import android.widget.ListView; import android.widget.Spinner;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         String[] countryArray = {"India", "China", "Nepal", "Sri Lanka", "Australia", "Israel", "Russia", "USA"};        EditText etCountry = findViewById(R.id.etCountry);        ArrayAdapter adapter = new ArrayAdapter(this, android.R.layout.simple\_spinner\_item, countryArray);        adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);        ListView lvCountry = findViewById(R.id.list\_view);        lvCountry.setAdapter(adapter);        etCountry.addTextChangedListener(                new TextWatcher() {                    @Override                    public void beforeTextChanged(CharSequence charSequence, int i, int i1, int i2) {                     }                     @Override                    public void onTextChanged(CharSequence charSequence, int i, int i1, int i2) {                        adapter.getFilter().filter(charSequence);                    }                     @Override                    public void afterTextChanged(Editable editable) {                     }                }        );    } } |

**6. Write a program to add new item entered thru an EditText into the ListView, on click of a button.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <EditText        android:id="@+id/etText"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="48dp"        android:layout\_marginTop="48dp"        android:ems="10"        android:hint="Text to Add"        android:inputType="textPersonName"        android:minHeight="48dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent"        android:autofillHints="" />     <ListView        android:id="@+id/list\_view"        android:layout\_width="409dp"        android:layout\_height="636dp"        android:layout\_marginStart="16dp"        android:layout\_marginTop="50dp"        android:layout\_marginEnd="16dp"        android:layout\_marginBottom="8dp"        app:layout\_constraintBottom\_toBottomOf="parent"        app:layout\_constraintEnd\_toEndOf="parent"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etText"        app:layout\_constraintVertical\_bias="0.847"        tools:ignore="VisualLintBounds" />     <Button        android:id="@+id/btnAdd"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="24dp"        android:layout\_marginTop="45dp"        android:text="Add"        app:layout\_constraintStart\_toEndOf="@+id/etText"        app:layout\_constraintTop\_toTopOf="parent" />  </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.addnewitemlistvoew;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.View; import android.widget.AdapterView; import android.widget.ArrayAdapter; import android.widget.Button; import android.widget.EditText; import android.widget.ListView; import android.widget.Toast;  import java.util.ArrayList;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         EditText etText = findViewById(R.id.etText);        Button btnAdd = findViewById(R.id.btnAdd);        ListView lvDisplay = findViewById(R.id.list\_view);        ArrayList<String> items = new ArrayList<>();        ArrayAdapter adapter = new ArrayAdapter<>(this,android.R.layout.simple\_spinner\_item, items);        lvDisplay.setAdapter(adapter);        etText.requestFocus();        btnAdd.setOnClickListener(                new View.OnClickListener() {                    @Override                    public void onClick(View view) {                        String str = etText.getText().toString();                        items.add(str);                        adapter.notifyDataSetChanged();                    }                }        );    } } |

**7. Write a program to implement AutoCompleteTextView**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <AutoCompleteTextView        android:id="@+id/actvTxt"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="120dp"        android:layout\_marginTop="60dp"        android:hint="Enter Country Name"        android:minHeight="48dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.autocompletetextview;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.widget.ArrayAdapter; import android.widget.AutoCompleteTextView;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);        String[] countryArray = {"India", "China", "Nepal", "Sri Lanka", "Australia", "Israel", "Russia", "USA", "Italy"};        ArrayAdapter adapter = new ArrayAdapter<>(this, android.R.layout.simple\_list\_item\_1, countryArray);        AutoCompleteTextView actv = findViewById(R.id.actvTxt);        actv.setThreshold(0);        actv.setAdapter(adapter);    } } |

**Practical 8: Menus**

**Problem Statement:**

**1. Write a program to change the textcolor of the text displayed in a textview on selection of a color from a popup menu. The popup menu appears on click of a button.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <TextView        android:id="@+id/tvDisplay"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="112dp"        android:layout\_marginTop="88dp"        android:text="Color will change here"        android:textSize="20dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <Button        android:id="@+id/btnColor"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="128dp"        android:layout\_marginTop="56dp"        android:text="Choose Color"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/tvDisplay" /> </androidx.constraintlayout.widget.ConstraintLayout> |

menu.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <menu xmlns:android="http://schemas.android.com/apk/res/android">    <item        android:title="Red"        android:id="@+id/red" />     <item        android:title="Green"        android:id="@+id/green" />     <item        android:id="@+id/blue"        android:title="Blue" /> </menu> |

ActivityMain.java

|  |
| --- |
| package com.example.popupmenucolor;  import androidx.appcompat.app.AppCompatActivity;  import android.graphics.Color; import android.os.Bundle; import android.view.Menu; import android.view.MenuInflater; import android.view.MenuItem; import android.view.View; import android.widget.Button; import android.widget.PopupMenu; import android.widget.TextView;  import org.w3c.dom.Text;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         Button btnColor = findViewById(R.id.btnColor);        btnColor.setOnClickListener(                new View.OnClickListener() {                    @Override                    public void onClick(View view) {                        PopupMenu popup = new PopupMenu(MainActivity.this, view);                        MenuInflater inflater = popup.getMenuInflater();                        inflater.inflate(R.menu.menu, popup.getMenu());                        popup.setOnMenuItemClickListener(                                new PopupMenu.OnMenuItemClickListener() {                                    @Override                                    public boolean onMenuItemClick(MenuItem menuItem) {                                        TextView tvDisplay = findViewById(R.id.tvDisplay);                                        switch(menuItem.getItemId()) {                                            case R.id.red:                                                tvDisplay.setTextColor(Color.RED);                                                break;                                            case R.id.green:                                                tvDisplay.setTextColor(Color.GREEN);                                                break;                                            case R.id.blue:                                                tvDisplay.setTextColor(Color.BLUE);                                                break;                                            default:                                                tvDisplay.setTextColor(Color.BLACK);                                                break;                                        }                                        return true;                                    }                                }                        );                        popup.show();                    }                }        );        TextView tvDisplay = findViewById(R.id.tvDisplay);      } } |

**2. Write a program to create a floating contextual menu (Share, Edit and Delete) for a textview**

**🡪**contextual\_menu.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <menu xmlns:android="http://schemas.android.com/apk/res/android">    <item        android:id="@+id/share"        android:title="share" />     <item        android:id="@+id/edit"        android:title="edit" />     <item        android:id="@+id/delete"        android:title="delete" /> </menu> |

Activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <TextView        android:id="@+id/tvDisplay"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="159dp"        android:layout\_marginTop="118dp"        android:text="TextView"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

MainActivity.java

|  |
| --- |
| package com.example.floatingcontextualmenu;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.ContextMenu; import android.view.MenuItem; import android.view.View; import android.widget.TextView; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         TextView tvDisplay = findViewById(R.id.tvDisplay);         registerForContextMenu(tvDisplay);    }    @Override    public void onCreateContextMenu(ContextMenu menu, View view, ContextMenu.ContextMenuInfo menuInfo) {        super.onCreateContextMenu(menu, view, menuInfo);        getMenuInflater().inflate(R.menu.contextual\_menu, menu);    }    @Override    public boolean onContextItemSelected(MenuItem item) {        switch (item.getItemId()) {            case R.id.share:                Toast.makeText(this, "Share selected", Toast.LENGTH\_SHORT).show();                return true;             case R.id.edit:                Toast.makeText(this, "Edit selected", Toast.LENGTH\_SHORT).show();                return true;             case R.id.delete:                Toast.makeText(this, "Delete selected", Toast.LENGTH\_SHORT).show();                return true;        }        return false;    } } |

**3. Write a program to create a contextual action bar (Share, Edit and Delete) for a textview**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <ListView        android:id="@+id/lvAnimals"        android:layout\_width="409dp"        android:layout\_height="729dp"        android:layout\_marginTop="175dp"        android:layout\_marginBottom="175dp"        app:layout\_constraintBottom\_toBottomOf="parent"        app:layout\_constraintEnd\_toEndOf="parent"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

animalsForAdoption.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <resources>    <string-array name="countries">        <item>Dog</item>        <item>Cat</item>        <item>Rabbit</item>        <item>Parrot</item>    </string-array>    <string-array name="animalsForAdoption">animalsForAdoption</string-array> </resources> |

context\_menu.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <menu xmlns:android="http://schemas.android.com/apk/res/android">    <item android:title="Share"        android:id="@+id/shre" />    <item android:title="Edit"        android:id="@+id/edit" />    <item android:title="Share"        android:id="@+id/share" /> </menu> |

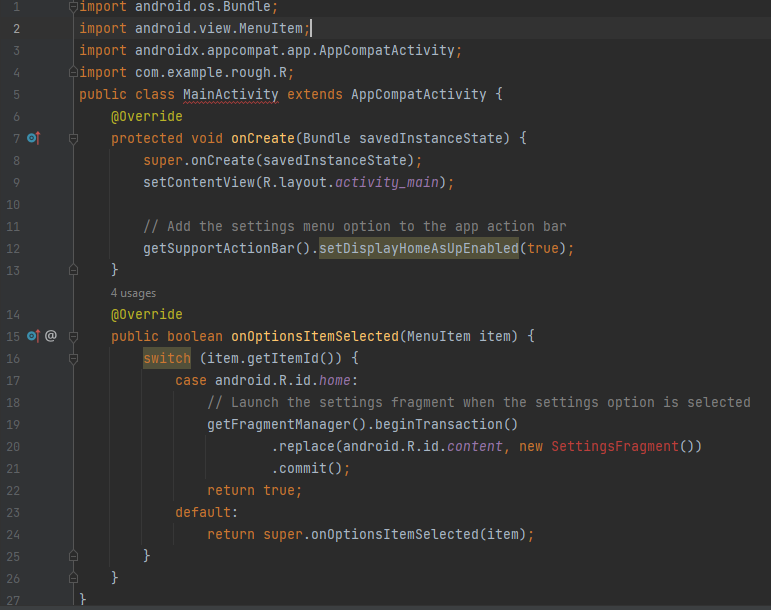
MainActivity.java

|  |
| --- |
| package com.example.floatingcontextmenu;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.view.ActionMode; import android.view.Menu; import android.view.MenuInflater; import android.view.MenuItem; import android.view.View; import android.widget.AdapterView; import android.widget.ArrayAdapter; import android.widget.ListView;  public class MainActivity extends AppCompatActivity {    private ActionMode mActionMode=null;     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         ListView lvAnimals = findViewById(R.id.lvAnimals);        ArrayAdapter adapter = ArrayAdapter.createFromResource(this, R.array.animalsForAdoption,                android.R.layout.simple\_list\_item\_1);         lvAnimals.setAdapter(adapter);         lvAnimals.setOnItemLongClickListener(                new AdapterView.OnItemLongClickListener() {                    @Override                    public boolean onItemLongClick (AdapterView<?> parent, View view,                                                    int position, long id) {                         if (mActionMode != null) return false;                        mActionMode = MainActivity.this.startActionMode(mActionModeCallback);                        return true;                    }                 }        );    }    public ActionMode.Callback mActionModeCallback = new ActionMode.Callback(){        @Override        public boolean onCreateActionMode (ActionMode mode, Menu menu) {             MenuInflater inflater = mode.getMenuInflater();            inflater.inflate(R.menu.context\_menu, menu);            return true;         }        @Override        public boolean onPrepareActionMode(ActionMode mode, Menu menu) {             return false;         }         @Override        public boolean onActionItemClicked(ActionMode actionMode, MenuItem menuItem) {            return false;        }         @Override        public void onDestroyActionMode(ActionMode mode) {             mActionMode = null;        }    }; } |

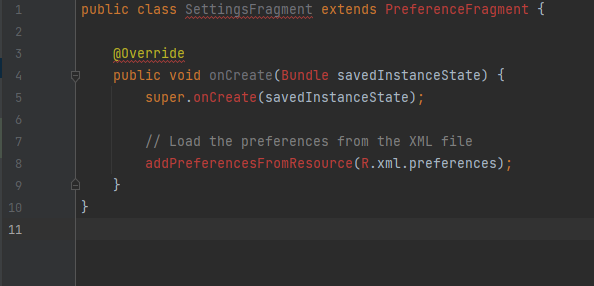
**Practical 9: Specialized Fragments**

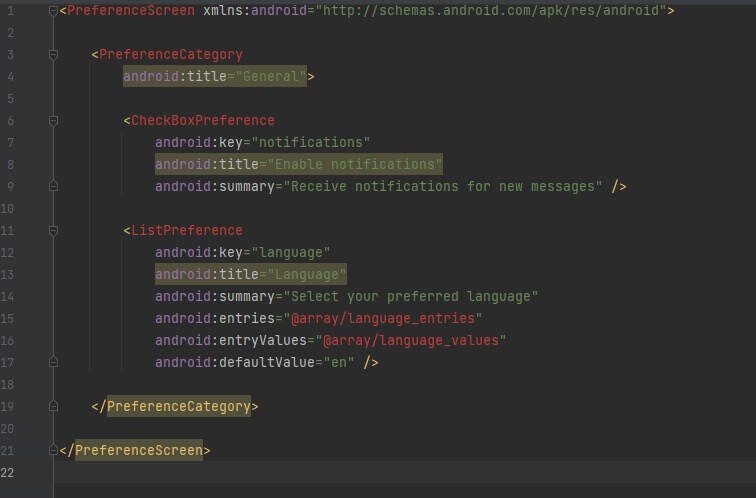
**Problem Statement:**

**Write a program to display PreferenceFragment on click of settings option from app action bar. Also display the preferences selected by the user**

**🡪** java:****

Seetings fragment:

****

**XML:** ****

**Practical 10: SQLite**

**Problem Statement:**

**Write a program to create an EMP(EmpId, name, salary) table using SQLite database. Perform CRUD operations on it.**

**🡪**activity\_main.xml

|  |
| --- |
| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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"    tools:context=".MainActivity">     <ListView        android:id="@+id/lvStudent"        android:layout\_width="409dp"        android:layout\_height="729dp"        android:layout\_marginTop="275dp"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <EditText        android:id="@+id/etRollNo"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="97dp"        android:layout\_marginTop="25dp"        android:ems="10"        android:hint="Name"        android:inputType="textPersonName"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <EditText        android:id="@+id/etName"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="100dp"        android:layout\_marginTop="17dp"        android:ems="10"        android:hint="Roll Number"        android:inputType="textPersonName"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etRollNo" />     <EditText        android:id="@+id/etMarks"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="100dp"        android:layout\_marginTop="19dp"        android:ems="10"        android:hint="Marks"        android:inputType="textPersonName"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etName" />     <Button        android:id="@+id/btnAdd"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="158dp"        android:layout\_marginTop="1dp"        android:text="Add"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toBottomOf="@+id/etMarks" /> </androidx.constraintlayout.widget.ConstraintLayout> |

List\_template.xml

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| <?xml version="1.0" encoding="utf-8"?> <androidx.constraintlayout.widget.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">     <TextView        android:id="@+id/tvRollNumber"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="32dp"        android:layout\_marginTop="24dp"        android:text="Roll Number"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <TextView        android:id="@+id/tvName"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="184dp"        android:layout\_marginTop="24dp"        android:text="Name"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" />     <TextView        android:id="@+id/textView3"        android:layout\_width="wrap\_content"        android:layout\_height="wrap\_content"        android:layout\_marginStart="317dp"        android:layout\_marginTop="24dp"        android:text="Marks"        app:layout\_constraintStart\_toStartOf="parent"        app:layout\_constraintTop\_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout> |

DBHandler.java

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| import android.content.ContentValues; import android.content.Context; import android.database.sqlite.SQLiteDatabase; import android.database.sqlite.SQLiteOpenHelper;  import org.jetbrains.annotations.Nullable;  public class DBHandler extends SQLiteOpenHelper {    final static String DATABASE\_NAME="studentDB";    final static int DATABASE\_VERSION = 1;    String TABLE\_NAME = "student";    String ROLL\_NO\_COL = "\_id";    String NAME\_COL = "name";    String MARKS\_COL = "marks";     public DBHandler(@Nullable Context context) {        super(context, DATABASE\_NAME, null, DATABASE\_VERSION);     }     @Override    public void onCreate(SQLiteDatabase db) {        String createStmt = "CREATE TABLE " + TABLE\_NAME + "(" +                ROLL\_NO\_COL + "INTEGER PRIMARY KEY," +                NAME\_COL + "VARCHAR(30)," +                MARKS\_COL + "DOUBLE;";        db.execSQL(createStmt);    }     @Override    public void onUpgrade(SQLiteDatabase db, int i, int i1) {        db.execSQL("DROP TABLE IF EXISTS " + TABLE\_NAME);        onCreate(db);    }     public long addStudent(int rollNo, String name, double avgMarks) {        SQLiteDatabase db = this.getWritableDatabase();        ContentValues values = new ContentValues();        values.put(ROLL\_NO\_COL, rollNo);        values.put(NAME\_COL, name);        values.put(MARKS\_COL, avgMarks);    } } |

MainActivity.java

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| package com.example.sqlite2;  import androidx.appcompat.app.AppCompatActivity;  import android.database.Cursor; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.ListView; import android.widget.SimpleCursorAdapter; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {     @Override    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);        setContentView(R.layout.activity\_main);         DBHandler db = new DBHandler(this);        EditText etRollNo = findViewById(R.id.etRollNo);        EditText etName = findViewById(R.id.etName);        EditText etMarks = findViewById(R.id.etMarks);         Button btnAdd = findViewById(R.id.btnAdd);         btnAdd.setOnClickListener(                new View.OnClickListener() {                    @Override                    public void onClick(View view) {                        int rollNo = Integer.parseInt(etRollNo.getText().toString());                        String name = etName.getText().toString();                        double marks = Double.parseDouble(etMarks.getText().toString());                        long rowid = dbHandler.addStudent(rollNo, name, marks);                        Toast.makeText(getApplicationContext(), "Roww Added " + rowid, Toast.LENGTH\_LONG).show();                          Cursor cursor = dbHandler.readAll();                        SimpleCursorAdapter adapter = new SimpleCursorAdapter(getApplicationContext(), R.layout.list\_template, cursor,                                new String[]{dbHandler.ROLL\_NO\_COL, dbHandler.NAME\_COL, dbHandler.MARKS\_COL},                                new int[]{R.id.tvRollNumber, R.id.tvName, R.id.textView3});                        ListView studListView = findViewById(R.id.lvStudent);                        studListView.setAdapter(adapter);                    }                }        );    } } |