**MainActivity.java**

package com.example.radiobutton;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;

import android.widget.RadioButton;  
import android.widget.RadioGroup;  
import android.widget.TextView;  
import java.util.ArrayList;  
import java.util.HashSet;  
import java.util.Set;

public class MainActivity extends AppCompatActivity {  
 private EditText editList1, editList2;  
 private Button btnUnion, btnIntersection, btnMerge;  
 private TextView textResult;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);

editList1 = findViewById(R.id.*editList1*);  
 editList2 = findViewById(R.id.*editList2*);  
 btnUnion = findViewById(R.id.*btnUnion*);  
 btnIntersection = findViewById(R.id.*btnIntersection*);  
 btnMerge = findViewById(R.id.*btnMerge*);  
 textResult = findViewById(R.id.*textResult*);  
 btnUnion.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 ArrayList<String> list1 = getListFromEditText(editList1);  
 ArrayList<String> list2 = getListFromEditText(editList2);  
 Set<String> unionSet = new HashSet<>(list1);  
 unionSet.addAll(list2);  
 displayResult(unionSet);  
 }  
 });  
 btnIntersection.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 ArrayList<String> list1 = getListFromEditText(editList1);  
 ArrayList<String> list2 = getListFromEditText(editList2);  
 Set<String> intersectionSet = new HashSet<>(list1);  
 intersectionSet.retainAll(list2);  
 displayResult(intersectionSet);  
 }  
 });

btnMerge.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {

ArrayList<String> list1 = getListFromEditText(editList1);  
 ArrayList<String> list2 = getListFromEditText(editList2);  
 list1.addAll(list2);  
 displayResult(new HashSet<>(list1));  
 }  
 });  
 }  
 private ArrayList<String> getListFromEditText(EditText editText) {  
 String input = editText.getText().toString().trim();  
 String[] items = input.split(",");  
 ArrayList<String> list = new ArrayList<>();

for (String item : items) {  
 list.add(item.trim());  
 }  
 return list;  
 }  
 private void displayResult(Set<String> resultSet) {  
 StringBuilder resultText = new StringBuilder("Result: ");  
 for (String item : resultSet) {  
 resultText.append(item).append(", ");  
 }  
 if (resultText.length() > 0) {  
 resultText.delete(resultText.length() - 2, resultText.length());  
 } else {  
 resultText.append("Empty");  
 }  
 textResult.setText(resultText.toString());  
 }  
}