**SIMPLE CALCULATOR IMPLEMENTING THE LOGIC FOR BASIC ARITHMETIC OPERATIONS ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION**

**Step 1: Set up the Android Project**

1. Open Android Studio.
2. Click on "Start a new Android Studio project."
3. Choose "Empty Activity" as the template and click "Next."
4. Configure your project details (e.g., name, package name, location) and click "Finish."

**Step 2: Design the User Interface**

Open the **activity\_main.xml** layout file in the **res/layout** folder, and replace the default XML code with the following:

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout  
 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"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/number1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="48dp"  
 android:hint="Enter first number"  
 android:inputType="numberDecimal"  
 android:layout\_marginBottom="8dp"/>  
  
 <EditText  
 android:id="@+id/number2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="48dp"  
 android:layout\_below="@id/number1"  
 android:hint="Enter second number"  
 android:inputType="numberDecimal"  
 android:layout\_marginBottom="48dp"/>  
  
 <RadioGroup  
 android:id="@+id/operationGroup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/number2"  
 android:orientation="horizontal">  
  
 <RadioButton  
 android:id="@+id/additionRadio"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Addition"  
 android:checked="true"/>  
  
 <RadioButton  
 android:id="@+id/subtractionRadio"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Subtraction"/>  
  
 <RadioButton  
 android:id="@+id/multiplicationRadio"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Multiplication"/>  
  
 <RadioButton  
 android:id="@+id/divisionRadio"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Division"/>  
 </RadioGroup>  
  
 <Button  
 android:id="@+id/calculateButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Calculate"  
 android:layout\_below="@id/operationGroup"/>  
  
 <TextView  
 android:id="@+id/resultText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="48dp"  
 android:layout\_below="@id/calculateButton"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"  
 android:text=""  
 android:textSize="18sp"/>  
</RelativeLayout>

**Step 3: Implement App Logic**

Open the **MainActivity.java** file in the **java/com.example.yourpackage** folder and write the code to handle button click and perform calculations based on user input:

package com.example.myapplication;  
  
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;  
  
public class MainActivity extends AppCompatActivity {  
  
 private EditText number1EditText, number2EditText;  
 private RadioGroup operationGroup;  
 private RadioButton additionRadio, subtractionRadio, multiplicationRadio, divisionRadio;  
 private Button calculateButton;  
 private TextView resultText;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 // Initialize views  
 number1EditText = findViewById(R.id.*number1*);  
 number2EditText = findViewById(R.id.*number2*);  
 operationGroup = findViewById(R.id.*operationGroup*);  
 additionRadio = findViewById(R.id.*additionRadio*);  
 subtractionRadio = findViewById(R.id.*subtractionRadio*);  
 multiplicationRadio = findViewById(R.id.*multiplicationRadio*);  
 divisionRadio = findViewById(R.id.*divisionRadio*);  
 calculateButton = findViewById(R.id.*calculateButton*);  
 resultText = findViewById(R.id.*resultText*);  
  
 // Handle calculate button click  
 calculateButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 // Get user inputs  
 double num1 = Double.*parseDouble*(number1EditText.getText().toString());  
 double num2 = Double.*parseDouble*(number2EditText.getText().toString());  
  
 // Perform the selected operation  
 double result = 0.0;  
 int checkedId = operationGroup.getCheckedRadioButtonId();  
  
 if (checkedId == R.id.*additionRadio*) {  
 result = num1 + num2;  
 } else if (checkedId == R.id.*subtractionRadio*) {  
 result = num1 - num2;  
 } else if (checkedId == R.id.*multiplicationRadio*) {  
 result = num1 \* num2;  
 } else if (checkedId == R.id.*divisionRadio*) {  
 if (num2 != 0) {  
 result = num1 / num2;  
 } else {  
 resultText.setText("Division by zero is not allowed.");  
 return;  
 }  
 }  
  
 // Display the result  
 resultText.setText("Result: " + result);  
 }  
 });  
 }  
}

**Step 4: Run the App**

1. Connect an Android device or start an emulator.
2. Click the "Run" button in Android Studio to build and run the app on the selected device or emulator.
3. The app should launch, and you can enter two numbers, select an operation, and click the "Calculate" button. The result will be displayed on the screen.