**PROGRAM 3:**

Implementing basic arithmetic operations of a simple calculator

**CODE:**

**activity_main.xml:**

```xml
<?xml version="1.0" encoding="utf-8"?>

  <LinearLayout android:layout_width="match_parent"
  android:layout_height="match_parent"
    xmlns:android="http://schemas.android.com/apk/res/android"
  android:orientation="vertical">
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:orientation="horizontal">
      <EditText
        android:id="@+id/ed1"
        android:layout_width="160dp"
        android:layout_height="wrap_content"
        android:hint="Num 1"/>
      <EditText

        android:id="@+id/ed2"
        android:layout_width="160dp"
        android:layout_height="wrap_content"
        android:hint="Num 2"/>
    </LinearLayout>
    <Button
      android:layout_height="wrap_content"
      android:layout_width="120dp"
      android:text="Add"
      android:onClick="Add"/>
    <Button
      android:layout_height="wrap_content"
      android:layout_width="120dp"
      android:text="Sub"
      android:onClick="Sub"/>
    <Button
      android:layout_height="wrap_content"
      android:layout_width="120dp"
      android:text="Mul"
      android:onClick="Mul"/>
    <Button
      android:layout_height="wrap_content"
      android:layout_width="120dp"
      android:text="Div"
      android:onClick="Div"/>
    <Button
      android:id="@+id/clearButton"

      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
```

```xml
        android:layout_gravity="center"
        android:text="Clear"
        android:onClick="Clear"/>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal" >
        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Result:"
            android:textSize="20sp"/>
        <TextView
            android:id="@+id/tv1"
            android:layout_width="160dp"
            android:layout_height="30dp" />
    </LinearLayout>
</LinearLayout>
```

**MainActivity.java**

```java
package com.example.thirdprogram;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    EditText ed1,ed2;
    TextView tv1;
    double num1,num2;
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ed1 = findViewById(R.id.ed1);
        ed2 = findViewById(R.id.ed2);
        tv1= findViewById(R.id.tv1);
    }
    public void Clear(View view) {
        ed1.setText("");
        ed2.setText("");
        tv1.setText("");
    }
    public void Add(View view) {
        String num1str = ed1.getText().toString();
        String num2str = ed2.getText().toString();
        if (!num1str.isEmpty() && !num2str.isEmpty()) {
            double num1 = Double.parseDouble(num1str);
            double num2 = Double.parseDouble(num2str);
            double result = num1 + num2;
            tv1.setText(String.valueOf(result));
        }
```

```java
      else
      {
         tv1.setText("Result: Invalid input");
      }
   }
   public void Sub(View view) {
      String num1str = ed1.getText().toString();
      String num2str = ed2.getText().toString();
      if (!num1str.isEmpty() && !num2str.isEmpty()) {

         double num1 = Double.parseDouble(num1str);
         double num2 = Double.parseDouble(num2str);
         double result = num1 - num2;
         tv1.setText(String.valueOf(result));
      }
      else
      {
         tv1.setText("Result: Invalid input");
      }
   }
   public void Mul(View view) {
      String num1str = ed1.getText().toString();
      String num2str = ed2.getText().toString();
      if (!num1str.isEmpty() && !num2str.isEmpty())
      {
         double num1 = Double.parseDouble(num1str);
         double num2 = Double.parseDouble(num2str);
         double result = num1 * num2;
         tv1.setText(String.valueOf(result));
      }
      else
      {
         tv1.setText("Result: Invalid input");
      }
   }
   public void Div(View view) {
      String num1str = ed1.getText().toString();
      String num2str = ed2.getText().toString();
      if (!num1str.isEmpty() && !num2str.isEmpty())
      {
         double num1 = Double.parseDouble(num1str);
         double num2 = Double.parseDouble(num2str); if (num2 != 0) {
         double result = num1 / num2;
         tv1.setText(String.valueOf(result));
      }
      else
      {
         tv1.setText("Result: Division by zero");}

      }
      else
      {
         tv1.setText("Result: Invalid input");
      }
}}
```