Program 1:

Create a Simple Calculator for demonstrating the basic arithmetic operations (+ , - , * , /)

XML Code:-

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:weightSum="1">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/linearLayout1"
        android:layout_marginLeft="10pt"
        android:layout_marginRight="10pt"
        android:layout_marginTop="3pt">
        <EditText
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:layout_marginRight="5pt"
            android:id="@+id/etNum1"
            android:layout_width="match_parent"
            android:inputType="numberDecimal">
        </EditText>
        <EditText
            android:layout_height="wrap_content"
            android:layout_weight="1"
```

```
        android:layout_marginLeft="5pt"
        android:id="@+id/etNum2"
        android:layout_width="match_parent"
        android:inputType="numberDecimal">
    </EditText>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/linearLayout2"
    android:layout_marginTop="3pt"
    android:layout_marginLeft="5pt"
    android:layout_marginRight="5pt">
    <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="+"
        android:textSize="8pt"
        android:id="@+id/btnAdd">
    </Button>
    <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="-"
        android:textSize="8pt"
        android:id="@+id/btnSub">
    </Button>
    <Button
```

```
            android:layout_height="wrap_content"
            android:layout_width="match_parent"
            android:layout_weight="1"
            android:text="*"
            android:textSize="8pt"
            android:id="@+id/btnMult">
        </Button>
        <Button
            android:layout_height="wrap_content"
            android:layout_width="match_parent"
            android:layout_weight="1"
            android:text="/"
            android:textSize="8pt"
            android:id="@+id/btnDiv">
        </Button>
    </LinearLayout>
    <TextView
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_marginLeft="5pt"
        android:layout_marginRight="5pt"
        android:textSize="12pt"
        android:layout_marginTop="3pt"
        android:id="@+id/tvResult"
        android:gravity="center_horizontal"
        android:layout_weight="0.07">
    </TextView>
</LinearLayout>
```

JAVA Code:-

```
package com.example.sampcalc;

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

public class MainActivity extends AppCompatActivity implements View.OnClickListener{


    EditText etNum1;
    EditText etNum2;

    Button btnAdd;
    Button btnSub;
    Button btnMult;
    Button btnDiv;

    TextView tvResult;

    String oper = "";

    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);

    // find the elements
    etNum1 = (EditText) findViewById(R.id.etNum1);
    etNum2 = (EditText) findViewById(R.id.etNum2);

    btnAdd = (Button) findViewById(R.id.btnAdd);
    btnSub = (Button) findViewById(R.id.btnSub);
    btnMult = (Button) findViewById(R.id.btnMult);
    btnDiv = (Button) findViewById(R.id.btnDiv);

    tvResult = (TextView) findViewById(R.id.tvResult);

    // set a listener
    btnAdd.setOnClickListener(this);
    btnSub.setOnClickListener(this);
    btnMult.setOnClickListener(this);
    btnDiv.setOnClickListener(this);

}

@Override
public void onClick(View v) {
    // TODO Auto-generated method stub
    float num1 = 0;
    float num2 = 0;
    float result = 0;

    // check if the fields are empty
    if (TextUtils.isEmpty(etNum1.getText().toString())
```

```
        || TextUtils.isEmpty(etNum2.getText().toString())) {
    return;
}

// read EditText and fill variables with numbers
num1 = Float.parseFloat(etNum1.getText().toString());
num2 = Float.parseFloat(etNum2.getText().toString());

// defines the button that has been clicked and performs the corresponding operation
// write operation into oper, we will use it later for output
switch (v.getId()) {
    case R.id.btnAdd:
        oper = "+";
        result = num1 + num2;
        break;
    case R.id.btnSub:
        oper = "-";
        result = num1 - num2;
        break;
    case R.id.btnMult:
        oper = "*";
        result = num1 * num2;
        break;
    case R.id.btnDiv:
        oper = "/";
        result = num1 / num2;
        break;
    default:
        break;
}
```

```
        // form the output line
        tvResult.setText(num1 + " " + oper + " " + num2 + " = " + result);
    }
}
```

Output:-