Exp No: 3 **Creating a Simple Calculator Application**

Date:

AIM

ALGORITHM

SOURCE CODE

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/num1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="72dp"
        android:ems="15"
        android:inputType="number|numberDecimal"
        android:hint="Enter num 1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.278"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/num2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="144dp"
        android:ems="15"
        android:hint="Enter num 2"
        android:inputType="number|numberDecimal"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.278"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/add"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:backgroundTint="#03A9F4"
        android:text="+"
        android:onClick="add"
        android:textSize="30sp"
        app:layout_constraintStart_toStartOf="@+id/num2"
```

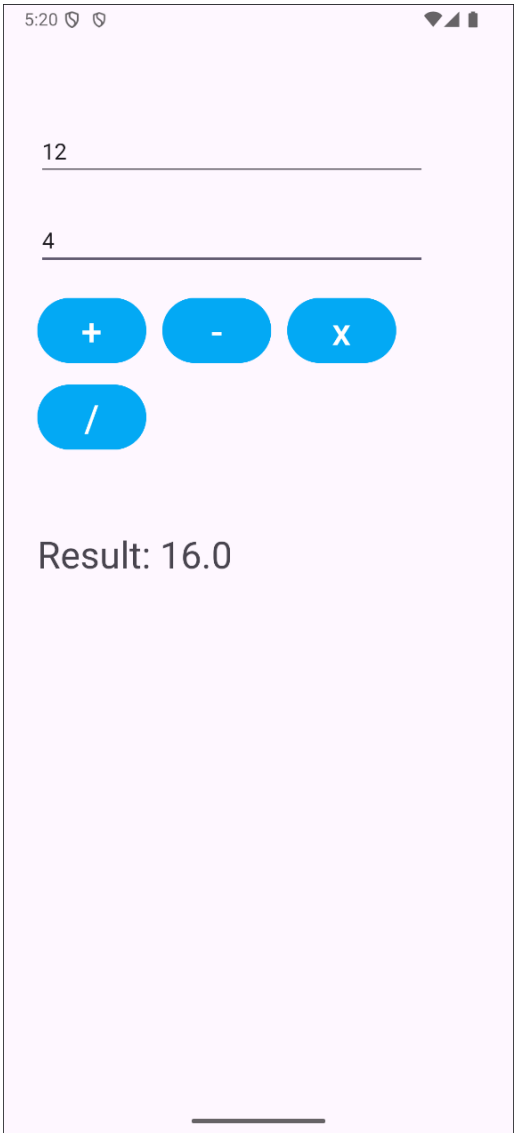
```
        app:layout_constraintTop_toBottomOf="@+id/num2" />

    <Button
        android:id="@+id/sub"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="13dp"
        android:layout_marginTop="20dp"
        android:backgroundTint="#03A9F4"
        android:text="-"
        android:onClick="subtract"
        android:textSize="30sp"
        app:layout_constraintStart_toEndOf="@+id/add"
        app:layout_constraintTop_toBottomOf="@+id/num2" />

    <Button
        android:id="@+id/mul"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="13dp"
        android:layout_marginTop="20dp"
        android:backgroundTint="#03A9F4"
        android:text="x"
        android:onClick="multiply"
        android:textSize="30sp"
        app:layout_constraintStart_toEndOf="@+id/sub"
        app:layout_constraintTop_toBottomOf="@+id/num2" />

    <Button
        android:id="@+id/div"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:backgroundTint="#03A9F4"
        android:text="/"
        android:onClick="divide"
        android:textSize="30sp"
        app:layout_constraintStart_toStartOf="@+id/add"
        app:layout_constraintTop_toBottomOf="@+id/add" />

    <TextView
        android:id="@+id/result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result: "
        android:textSize="30sp"
        android:layout_marginTop="60dp"
        app:layout_constraintStart_toStartOf="@+id/div"
        app:layout_constraintTop_toBottomOf="@+id/div" />
</androidx.constraintlayout.widget.ConstraintLayout
```

MainActivity.java

```
package com.example.lab3;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

    EditText num1, num2;
    TextView result;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        num1 = findViewById(R.id.num1);
        num2 = findViewById(R.id.num2);

        result = findViewById(R.id.result);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
(v, insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top,
systemBars.right, systemBars.bottom);
            return insets;
        });
    }

    public void displayResult(String text) {
        result.setText("Result: " + text);
    }

    public void add(View v) {
        if (!num1.getText().toString().isEmpty() &&
!num2.getText().toString().isEmpty()) {
            Float number1 = Float.parseFloat(num1.getText().toString());
            Float number2 = Float.parseFloat(num2.getText().toString());
```

```
            displayResult(String.valueOf(number1 + number2));
        } else {
            displayResult("Invalid Input");
        }
    }

    public void subtract(View v) {
        if (!num1.getText().toString().isEmpty() &&
!num2.getText().toString().isEmpty()) {
            Float number1 = Float.parseFloat(num1.getText().toString());
            Float number2 = Float.parseFloat(num2.getText().toString());
            displayResult(String.valueOf(number1 - number2));
        } else {
            displayResult("Invalid Input");
        }
    }

    public void multiply(View v) {
        if (!num1.getText().toString().isEmpty() &&
!num2.getText().toString().isEmpty()) {
            Float number1 = Float.parseFloat(num1.getText().toString());
            Float number2 = Float.parseFloat(num2.getText().toString());
            displayResult(String.valueOf(number1 * number2));
        } else {
            displayResult("Invalid Input");
        }
    }

    public void divide(View v) {
        if (!num1.getText().toString().isEmpty() &&
!num2.getText().toString().isEmpty()) {
            Float number1 = Float.parseFloat(num1.getText().toString());
            Float number2 = Float.parseFloat(num2.getText().toString());
            displayResult(String.valueOf(number1 / number2));
        } else {
            displayResult("Invalid Input");
        }
    }

}
```

OUTPUT



RESULT