

# Program 1

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

### CALCULATOR

#### Activity\_main.xml

```
<?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>

```

### **MainActivity.java**

```
package com.example.calculator1;
```

```
//import android.support.v7.app.AppCompatActivity;
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;

import androidx.appcompat.app.AppCompatActivity;

import com.example.calculator1.R;

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

