**Program no:4**

**Aim:** Implementing basic arithmetic operations of a simple calculator

# XML Code:

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

<LinearLayout 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:layout\_width="match\_parent" android:layout\_height="match\_parent"

tools:context=".MainActivity" android:padding="20dp" android:orientation="vertical" android:background="@color/pastel">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="CALCULATOR" android:textSize="25sp" android:layout\_marginBottom="16dp" android:textColor="@android:color/black" />

<LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal" android:layout\_marginBottom="20dp">

<EditText android:id="@+id/first\_no" android:layout\_width="102dp" android:layout\_height="59dp" android:ems="10" android:layout\_margin Horizontal="50dp" android:hint="Enter" />

<EditText android:id="@+id/second\_no" android:layout\_width="102dp" android:layout\_height="59dp" android:ems="10" android:hint="Enter" />

</LinearLayout>

<LinearLayout android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:orientation="horizontal" android:layout\_marginBottom="20dp">

<TextView android:textSize="35sp" android:id="@+id/answer" android:layout\_width="102dp" android:layout\_height="59dp" android:layout\_margin Horizontal="50dp" android:hint="ans" />

</LinearLayout>

<LinearLayout android:orientation="vertical" android:layout\_marginLeft="250dp" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="30dp">

<Button android:id="@+id/sub"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="-" android:textSize="25sp" android:layout\_marginBottom="16dp" />

<Button android:id="@+id/add"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="16dp" android:text="+" android:textSize="25sp" tools:ignore="OnClick" />

<Button android:id="@+id/div"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="/" android:textSize="25sp"

android:layout\_marginBottom="16dp" />

<Button android:id="@+id/mul"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="16dp" android:text="X" android:textSize="25sp"/>

<Button android:id="@+id/equals"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="16dp" android:text="=" android:textSize="35sp"/>

</LinearLayout></LinearLayout>

# Java Code:

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.TextView;import android.widget.Toast;

public class MainActivity extends AppCompatActivity {EditText

no1 , no2;

Button add ,mul ,div , sub,equal; TextView answer;

double ans = 0; @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

// for text views

no1 = findViewById(R.id.first\_no); no2 = findViewById(R.id.second\_no);

// for button with operations add = findViewById(R.id.add); mul = findViewById(R.id.mul);div = findViewById(R.id.div); sub = findViewById(R.id.sub);

// for equal to button

equal = findViewById(R.id.equals);

// for answer field

answer = findViewById(R.id.answer); add.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String num1 = no1.getText().toString(); String num2 = no2.getText().toString(); if (num1.isEmpty() || num2.isEmpty()) {

Toast.makeText(getApplicationContext(),"Enter Numbers",Toast.LENGTH\_SHORT).show();

}

else {

}

}

});

double a = Double.parseDouble(no1.getText().toString());double b

= Double.parseDouble(no2.getText().toString());ans = a + b;

sub.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) {

String num1 = no1.getText().toString(); String num2 = no2.getText().toString(); if (num1.isEmpty() || num2.isEmpty()) {

Toast.makeText(getApplicationContext(),"Enter Numbers",Toast.LENGTH\_SHORT).show();

}

else {

double a = Double.parseDouble(no1.getText().toString());double b

= Double.parseDouble(no2.getText().toString());ans = a - b;

}

}

});

mul.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) {

String num1 = no1.getText().toString();String num2 = no2.getText().toString();

if (num1.isEmpty() || num2.isEmpty()) {

Toast.makeText(getApplicationContext(),"Enter Numbers",Toast.LENGTH\_SHORT).show();

}

else {

double a = Double.parseDouble(no1.getText().toString());double b

= Double.parseDouble(no2.getText().toString());ans = a \* b;

}

}

});

div.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) {

String num1 = no1.getText().toString();String num2 = no2.getText().toString();

if (num1.isEmpty() || num2.isEmpty()) { Toast.makeText(getApplicationContext(), "Enter Numbers",

Toast.LENGTH\_SHORT).show();

} else {

double a = Double.parseDouble(no1.getText().toString());double b

= Double.parseDouble(no2.getText().toString());if (b != 0) ans = a / b;

else

Toast.makeText(getApplicationContext(), "Enter Valid Numbers", Toast.LENGTH\_SHORT).show();

}

}

});

equal.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) { String ans1

= String.valueOf(ans); answer.setText(ans1); ans= 0;

}

});

}

}

# Output:

