

## **PRACTICAL-2.1**

### **AIM:**

**Design an application representing a simple Calculator.**

### **PROGRAM CODE:**

- **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"

    android:background="#CDDC39"

    android:orientation="vertical"

    android:padding="20dp"

    tools:context=".MainActivity">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginBottom="16dp"
```

```
android:text="CALCULATOR"
```

```
android:textColor="#E91E63"
```

```
android:textSize="25sp" />
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

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

```
    android:layout_marginBottom="20dp"
```

```
    android:orientation="horizontal">
```

```
<EditText
```

```
    android:id="@+id/first"
```

```
    android:layout_width="102dp"
```

```
    android:layout_height="59dp"
```

```
    android:layout_marginHorizontal="50dp"
```

```
    android:ems="10"
```

```
    android:hint="Enter"
```

```
    android:textColor="#E91E63" />
```

```
<EditText
```

```
    android:id="@+id/second"
```

```
    android:layout_width="102dp"
```

```
    android:layout_height="59dp"
```

```
    android:ems="10"
```

```
android:hint="Enter"
```

```
android:textColor="#E91E63" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="383dp"
```

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

```
    android:layout_marginBottom="20dp"
```

```
    android:orientation="horizontal">
```

```
<TextView
```

```
    android:id="@+id/answer"
```

```
    android:layout_width="315dp"
```

```
    android:layout_height="59dp"
```

```
    android:layout_marginHorizontal="50dp"
```

```
    android:hint="answer"
```

```
    android:textColor="#673AB7"
```

```
    android:textSize="35sp" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

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

```
android:layout_height="wrap_content"

android:layout_marginLeft="250dp"

android:layout_marginBottom="30dp"

android:orientation="vertical">
```

```
<Button
```

```
    android:id="@+id/sub"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="16dp"

    android:text="-"

    android:textSize="25sp"

    app:rippleColor="#FFEB3B" />
```

```
<Button
```

```
    android:id="@+id/add"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginBottom="16dp"

    android:text="+"

    android:textSize="25sp"

    app:rippleColor="#FFEB3B"

    tools:ignore="OnClick" />
```

<Button

android:id="@+id/div"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="16dp"

android:text="/"

android:textSize="25sp"

app:rippleColor="#FFEB3B" />

<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"

app:rippleColor="#FFEB3B" />

<Button

android:id="@+id/equals"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="16dp"

android:text="="

```
        android:textSize="35sp"

        app:rippleColor="#FFEB3B" />

</LinearLayout>

<EditText

    android:id="@+id/editTextNumber"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:ems="10"

    android:inputType="number" />

<EditText

    android:id="@+id/editTextNumber2"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:ems="10"

    android:inputType="number" />

</LinearLayout>
```

- **Java Code:**

```
package com.parthnpatel.simplecalculator;

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);

        no1 = findViewById(R.id.first);

        no2 = findViewById(R.id.second);

        add = findViewById(R.id.add);
        mul = findViewById(R.id.mul);
```

```
div = findViewById(R.id.div);
sub = findViewById(R.id.sub);

equal = findViewById(R.id.equals);

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;  
        }  
    }  
});
```

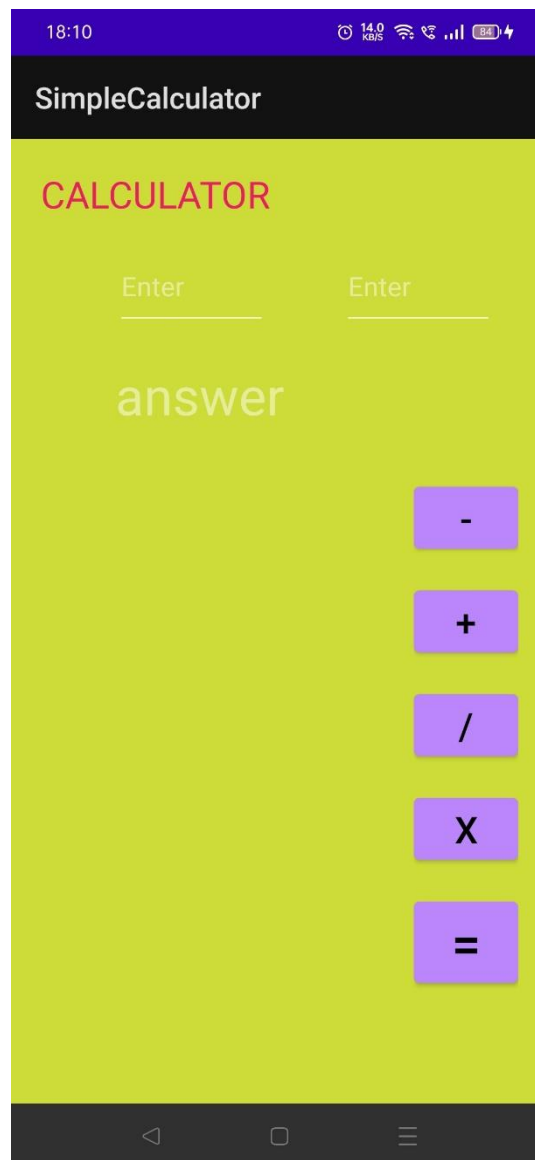
```
div.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        String num1 = no1.getText().toString();  
        String num2 = no2.getText().toString();  
  
        if (num1.isEmpty() || num2.isEmpty()) {
```

```
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();
}
}
});

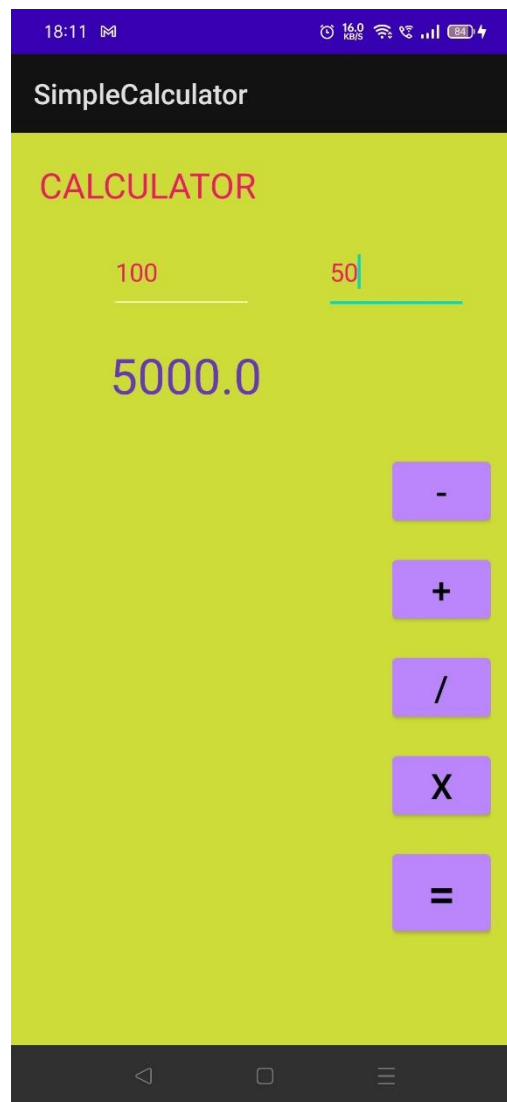
equal.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
String ans1 = String.valueOf(ans);
answer.setText(ans1);
ans= 0;
}
});

}
}
```

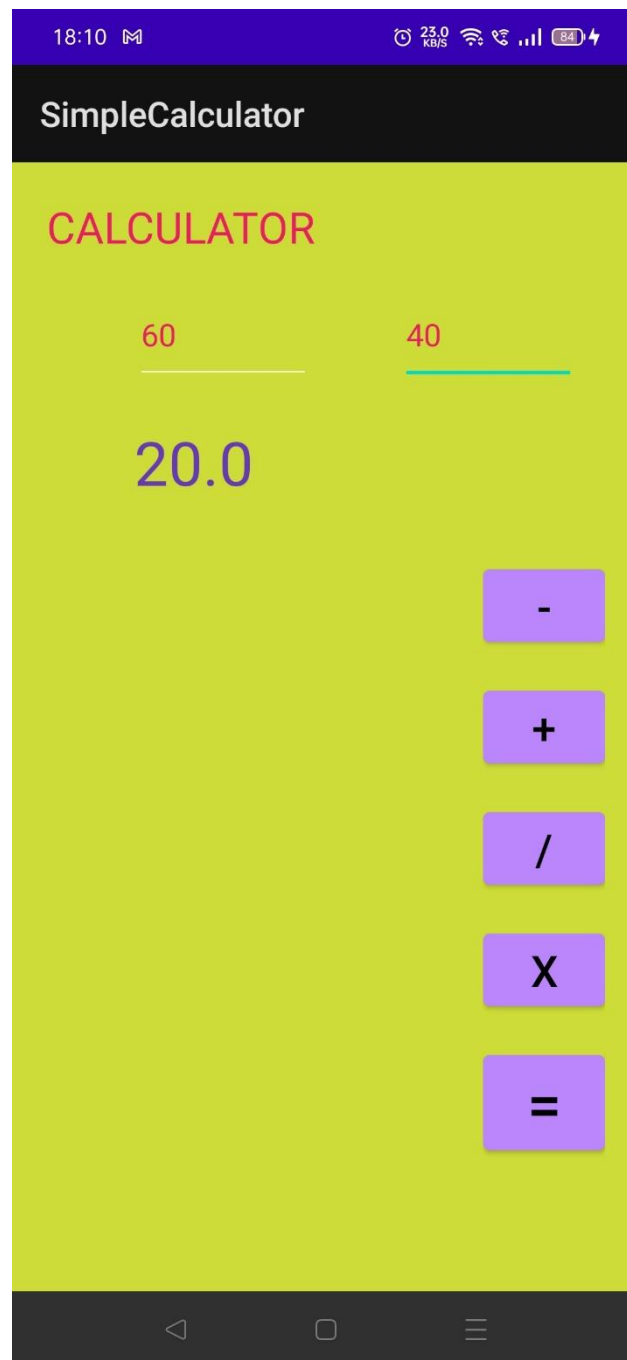
## OUTPUT:



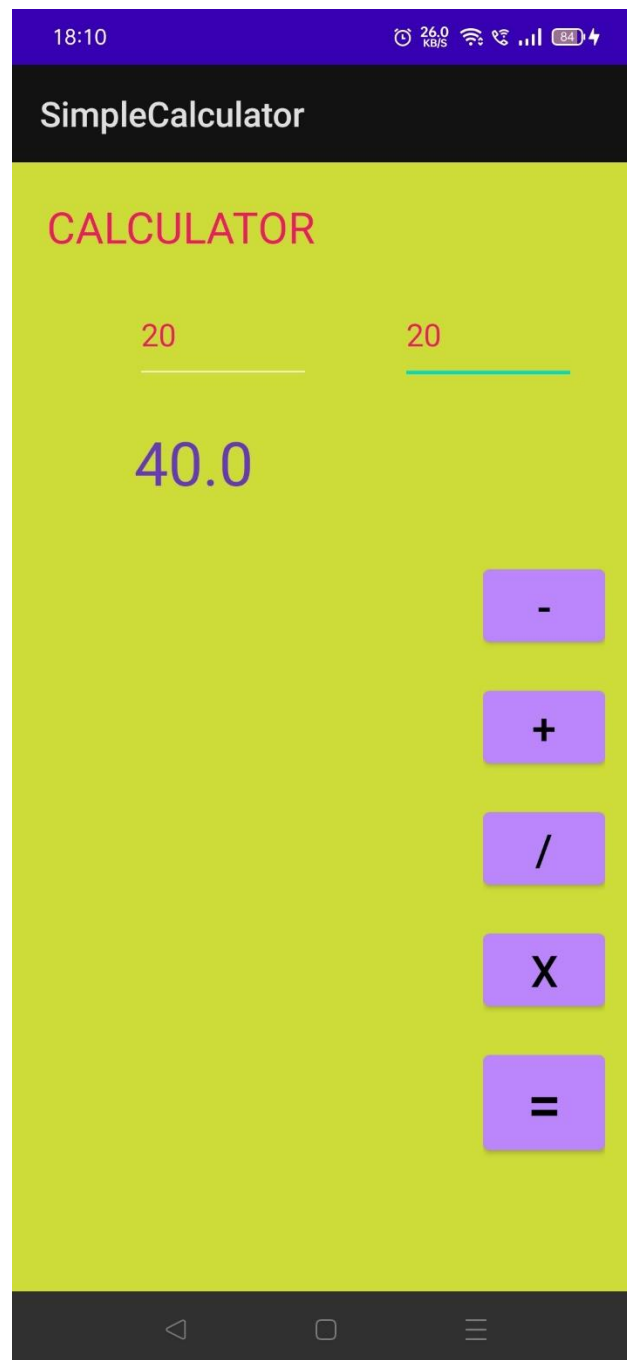
## BASIC INTERFACE

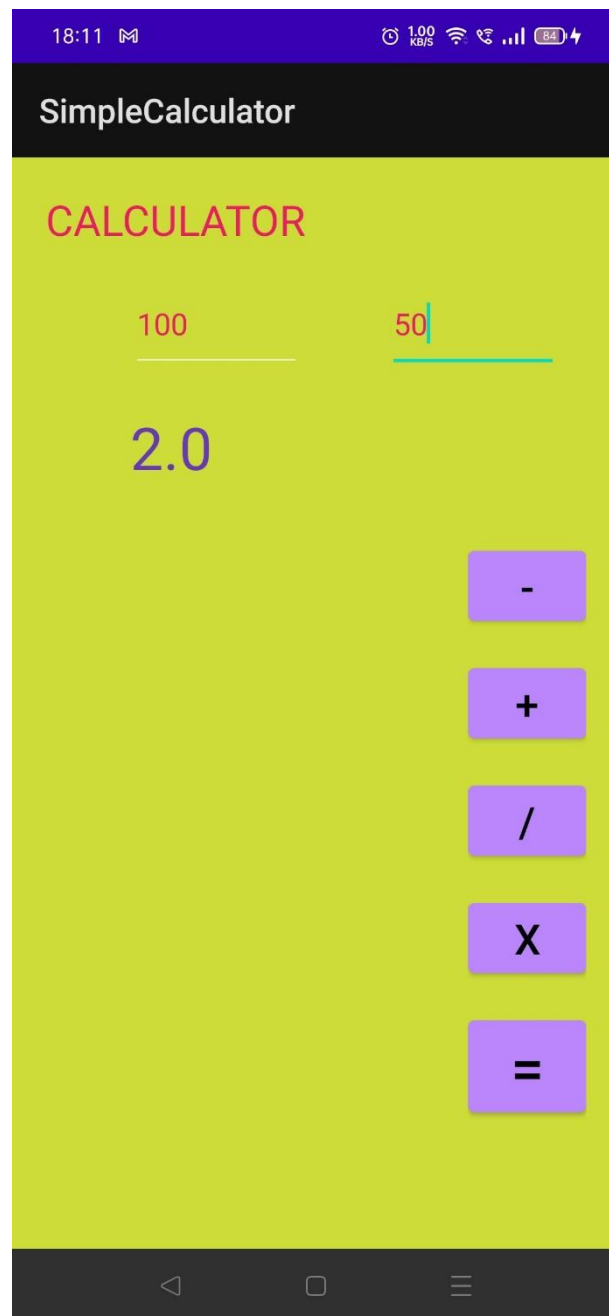


## MULTIPLICATION



**SUBTRACTION**

**ADDITION**



**DIVISION**