

## PART - A

### LAB - 02 CALCULATOR APP

activity\_main.xml

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

    <Button
        android:id="@+id/button17"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="49dp"
        android:layout_marginBottom="182dp"
        android:text="@string/division" />

    <Button
        android:id="@+id/button13"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="49dp"
        android:layout_marginBottom="103dp"
        android:text="@string/c" />

    <Button
        android:id="@+id/button16"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="49dp"
        android:layout_marginBottom="255dp"
        android:text="@string/multiplication" />

    <Button
        android:id="@+id/button12"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="132dp"
```

```
android:layout_marginBottom="182dp"
android:text="@string/equal" />
```

<Button

```
android:id="@+id/button11"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="217dp"
android:layout_marginBottom="181dp"
android:text="@string/_0" />
```

<Button

```
android:id="@+id/button10"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="300dp"
android:layout_marginBottom="180dp"
android:text="@string/dot" />
```

<Button

```
android:id="@+id/button14"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="49dp"
android:layout_marginBottom="394dp"
android:text="@string/plus" />
```

<Button

```
android:id="@+id/button15"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="49dp"
android:layout_marginBottom="326dp"
android:text="@string/subtract" />
```

<Button

```
android:id="@+id/button9"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="131dp"
android:layout_marginBottom="252dp"
android:text="@string/_3" />
```

```
<Button
    android:id="@+id/button8"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="217dp"
    android:layout_marginBottom="254dp"
    android:text="@string/_2" />
```

```
<Button
    android:id="@+id/button7"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="300dp"
    android:layout_marginBottom="254dp"
    android:text="@string/_1" />
```

```
<Button
    android:id="@+id/button6"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="133dp"
    android:layout_marginBottom="327dp"
    android:text="@string/_6" />
```

```
<Button
    android:id="@+id/button5"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="218dp"
    android:layout_marginBottom="324dp"
    android:text="@string/_5" />
```

```
<Button
    android:id="@+id/button4"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="300dp"
    android:layout_marginBottom="325dp"
    android:text="@string/_4" />
```

```
<Button
```

```
android:id="@+id/button3"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="132dp"
android:layout_marginBottom="394dp"
android:text="@string/_9" />
```

<TextView

```
android:layout_width="115dp"
android:layout_height="34dp"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="146dp"
android:layout_marginBottom="532dp"
android:text="@string/result"
android:textAlignment="center"
android:textColor="@color/black"
android:textSize="25sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

<EditText

```
android:id="@+id/edt1"
android:layout_width="364dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="22dp"
android:layout_marginBottom="480dp"
android:minHeight="48dp"
tools:ignore="SpeakableTextPresentCheck"
android:importantForAutofill="no" />
```

<Button

```
android:id="@+id/button1"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="300dp"
android:layout_marginBottom="394dp"
android:text="@string/_7" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="50dp"
android:layout_height="wrap_content"
```

```
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="218dp"
    android:layout_marginBottom="394dp"
    android:text="@string/_8" />
```

</RelativeLayout>

### MainActivity.java

```
package com.calculatorapp;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    Button button0, button1, button2, button3, button4, button5, button6,
        button7, button8, button9, button10, buttonAdd, buttonSub, buttonDivision,
        buttonMul, buttonC, buttonEqual;
    EditText editText;

    float valOne, valTwo;

    boolean add, sub, mul, div;

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

        button0 = (Button) findViewById(R.id.button11);
        button1 = (Button) findViewById(R.id.button7);
        button2 = (Button) findViewById(R.id.button8);
        button3 = (Button) findViewById(R.id.button9);
        button4 = (Button) findViewById(R.id.button4);
        button5 = (Button) findViewById(R.id.button5);
        button6 = (Button) findViewById(R.id.button6);
        button7 = (Button) findViewById(R.id.button1);
        button8 = (Button) findViewById(R.id.button2);
        button9 = (Button) findViewById(R.id.button3);
        button10 = (Button) findViewById(R.id.button10);
        buttonAdd = (Button) findViewById(R.id.button14);
        buttonSub = (Button) findViewById(R.id.button15);
        buttonMul = (Button) findViewById(R.id.button16);
        buttonDivision = (Button) findViewById(R.id.button17);
```

```
buttonC = (Button) findViewById(R.id.button13);
buttonEqual = (Button) findViewById(R.id.button12);
editText = (EditText) findViewById(R.id.edt1);

button1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "1");
    }
});

button2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "2");
    }
});

button3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "3");
    }
});

button4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "4");
    }
});

button5.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "5");
    }
});

button6.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "6");
    }
});

button7.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "7");
    }
});
```

```
button8.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "8");
    }
});
```

```
button9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "9");
    }
});
```

```
button0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "0");
    }
});
```

```
buttonAdd.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        if (editText == null) {
            editText.setText("");
        } else {
            valOne = Float.parseFloat(editText.getText() + "");
            add = true;
            editText.setText(null);
        }
    }
});
```

```
buttonSub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        valOne = Float.parseFloat(editText.getText() + "");
        sub = true;
        editText.setText(null);
    }
});
```

```
buttonMul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        valOne = Float.parseFloat(editText.getText() + "");
        mul = true;
        editText.setText(null);
    }
});
```

```

buttonDivision.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        valOne = Float.parseFloat(editText.getText() + "");
        div = true;
        editText.setText(null);
    }
});

```

```

buttonEqual.setOnClickListener(new View.OnClickListener() {
    @SuppressWarnings("SetTextI18n")
    @Override
    public void onClick(View v) {
        valTwo = Float.parseFloat(editText.getText() + "");
        if (add) {
            editText.setText(valOne + valTwo + "");
            add = false;
        }

        if (sub) {
            editText.setText(valOne - valTwo + "");
            sub = false;
        }

        if (mul) {
            editText.setText(valOne * valTwo + "");
            mul = false;
        }

        if (div) {
            editText.setText(valOne / valTwo + "");
            div = false;
        }
    }
});

```

```

buttonC.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText("");
    }
});

```

```

button10.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + ".");
    }
});

```

```

}

```

```

}

```