



Mobile application development(CSE 3075)

Experiment 1: Calculator App

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5CSE4

1.Design (XML File)

```
<?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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="47dp"
        android:text="CALCULATOR APP"
        android:textColor="@color/material_dynamic_primary10"
        android:textSize="34sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/ed1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="32dp"
        android:layout_marginTop="56dp"
        android:ems="10"
        android:hint="Enter first number"
        android:inputType="text"
        android:textColorHint="@color/material_dynamic_tertiary80"
        app:layout_constraintStart_toStartOf="@+id/textView"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <EditText
        android:id="@+id/ed2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter second number"
        android:inputType="text"
        android:textColorHint="@color/material_dynamic_tertiary80"
```

```
app:layout_constraintStart_toStartOf="@+id/ed1"
app:layout_constraintTop_toBottomOf="@+id/ed1" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="32dp"
android:layout_marginTop="45dp"
android:text="ADD"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/ed2" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="32dp"
android:layout_marginTop="58dp"
android:text="MUL"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/button" />
```

<Button

```
android:id="@+id/button3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="56dp"
android:layout_marginBottom="50dp"
android:text="DIV"
app:layout_constraintBottom_toTopOf="@+id/tv1"
app:layout_constraintEnd_toEndOf="parent" />
```

<Button

```
android:id="@+id/button4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="45dp"
android:text="SUB"
app:layout_constraintEnd_toEndOf="@+id/button3"
app:layout_constraintStart_toStartOf="@+id/button3"
app:layout_constraintTop_toBottomOf="@+id/ed2" />
```

<Button

```
android:id="@+id/button5"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="47dp"
android:text="Clear"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="@+id/ed2"
app:layout_constraintStart_toStartOf="@+id/ed2" />
```

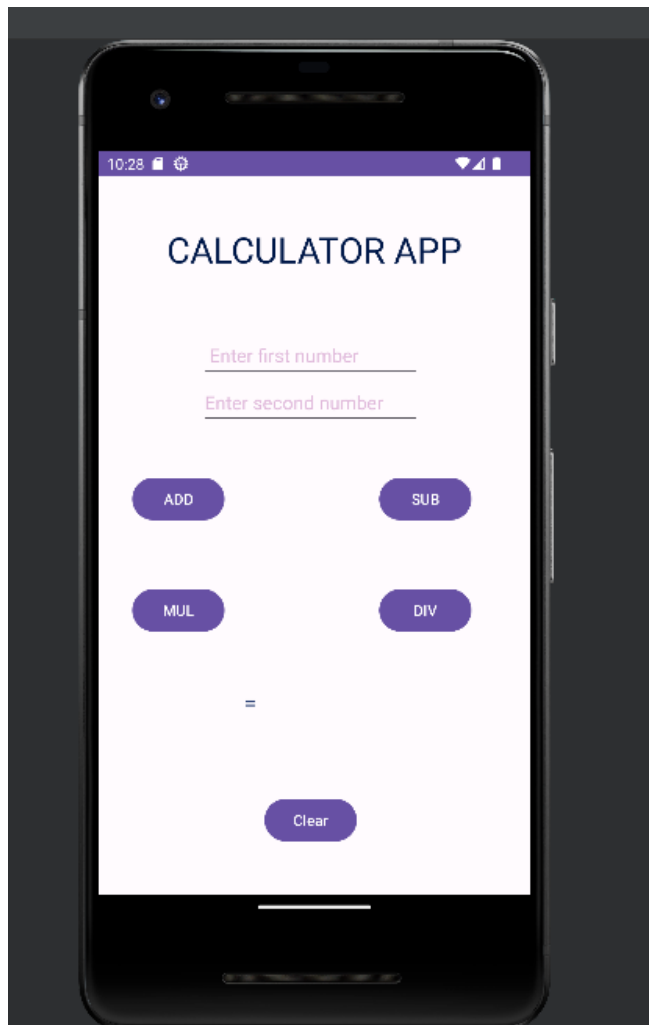
<TextView

```
android:id="@+id/tv1"
android:layout_width="101dp"
android:layout_height="76dp"
android:layout_marginStart="104dp"
android:layout_marginTop="50dp"
android:layout_marginEnd="104dp"
android:text=""
```

```
        android:textColor="@android:color/system_accent1_700"
        android:textColorHint="@color/material_dynamic_primary30"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="@+id/textView"
        app:layout_constraintStart_toStartOf="@+id/button2"

        app:layout_constraintTop_toBottomOf="@+id/button2" />

    </androidx.constraintlayout.widget.ConstraintLayout>
```



2.Code (JAVA File)

```
package com.example.calculator;

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 ed1,ed2;
    Double n1,n2,res;
    Button btn1,btn2,btn3,btn4,clr;
    TextView tv1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn1=findViewById(R.id.button);
        btn2=findViewById(R.id.button2);
        btn3=findViewById(R.id.button3);
        btn4=findViewById(R.id.button4);
        clr=findViewById(R.id.button5);
        ed1=findViewById(R.id.ed1);
        ed2=findViewById(R.id.ed2);
        tv1=findViewById(R.id.tv1);
        btn1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                n1=Double.parseDouble(ed1.getText().toString());
                n2=Double.parseDouble(ed2.getText().toString());
                res=n1+n2;
                tv1.setText(Double.toString(res));
                Toast.makeText(MainActivity.this,res.toString(),
Toast.LENGTH_LONG).show();
            }
        });
        btn2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                n1=Double.parseDouble(ed1.getText().toString());
                n2=Double.parseDouble(ed2.getText().toString());
                res=n1*n2;
                tv1.setText(Double.toString(res));
                Toast.makeText(MainActivity.this,res.toString(),
Toast.LENGTH_LONG).show();
            }
        });
        btn3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                n1=Double.parseDouble(ed1.getText().toString());
                n2=Double.parseDouble(ed2.getText().toString());
                res=n1/n2;
                tv1.setText(Double.toString(res));
                Toast.makeText(MainActivity.this,res.toString(),
Toast.LENGTH_LONG).show();
            }
        });
        btn4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                n1=Double.parseDouble(ed1.getText().toString());
                n2=Double.parseDouble(ed2.getText().toString());
                res=n1-n2;
                tv1.setText(Double.toString(res));
            }
        });
    }
}

```

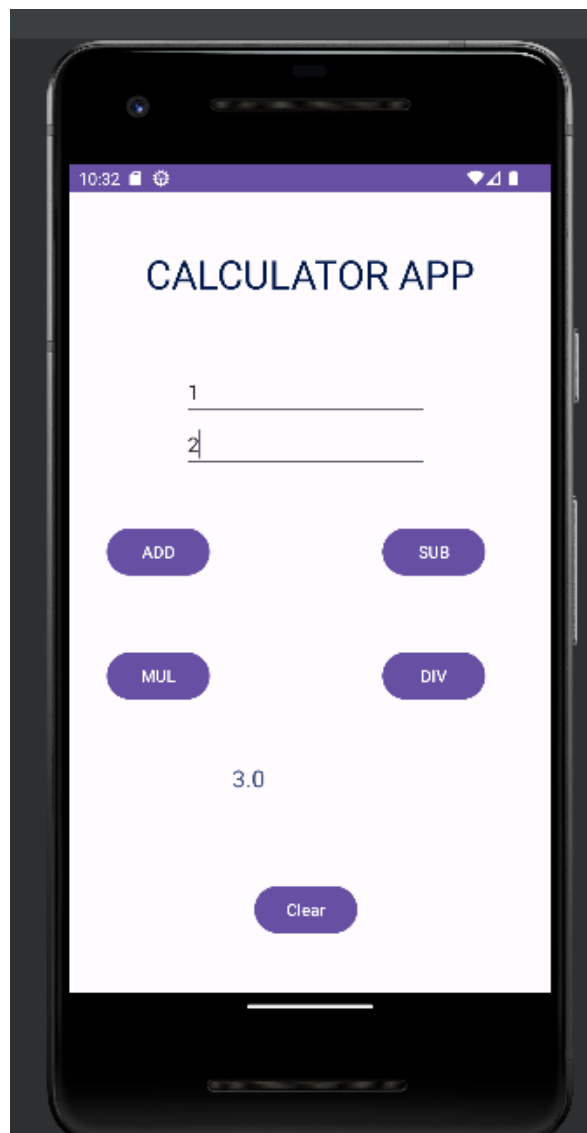
```

        Toast.makeText(MainActivity.this, res.toString(),
Toast.LENGTH_LONG).show();
    }
});
clr.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        ed1.setText("");
        ed2.setText("");
        tv1.setText("");
    }
});
}
}

```

3.Output in the emulator

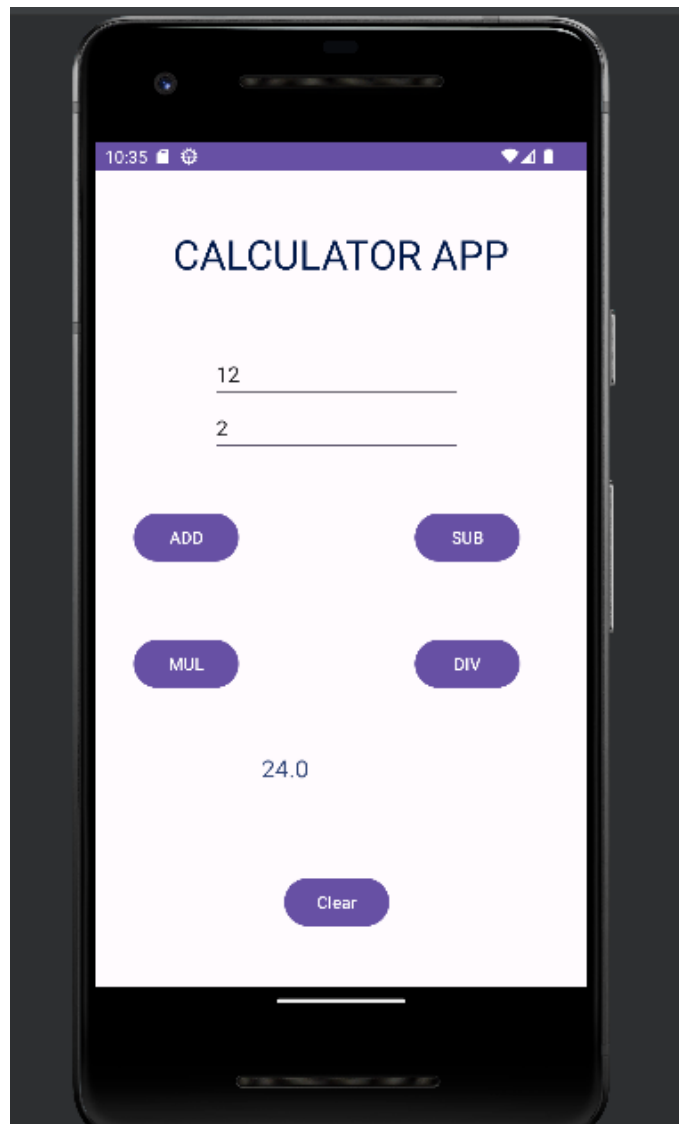
i)ADD



ii)SUBTRACT



iii)MULTIPLY



iv)DIVIDE

