

# Mobile Programming

## Assignment 1 - Calculator

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### activity\_main.xml

```
<?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"
    android:background="@drawable/bg"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/dot"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="."
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.123"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.628" />

    <Button
        android:id="@+id/equal"
        android:layout_width="211dp"
        android:layout_height="48dp"
        android:text "="
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.96" />
```

```
<Button
    android:id="@+id/clear"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="C"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.885"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.628" />
```

```
<Button
    android:id="@+id/multiply"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text "*"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.69"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.871" />
```

```
<Button
    android:id="@+id/minus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text "-"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.693"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.767" />
```

```
<Button
    android:id="@+id/divide"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="/"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.312"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.871" />
```

```
<Button
    android:id="@+id/seven"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="7"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.123"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />
```

```
<Button
    android:id="@+id/eight"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="8"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />
```

```
<Button
    android:id="@+id/nine"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
    android:text="9"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.885"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />
```

```
<Button
    android:id="@+id/four"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="4"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.123"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.423" />
```

```
<Button
    android:id="@+id/zero"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="0"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.628" />
```

```
<Button
    android:id="@+id/three"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="3"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.885"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.525" />
```

```
<Button
    android:id="@+id/two"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.525" />
```

```
<Button
    android:id="@+id/one"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="1"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.123"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.525" />
```

```
<Button
    android:id="@+id/add"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="+"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.312"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.767" />
```

```
<Button
    android:id="@+id/five"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="5"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.423" />

<Button
    android:id="@+id/six"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="6"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.885"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.423" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="CALCULATOR"
    android:textColor="#000000"
    android:textSize="34sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.074" />

<EditText
```

```
    android:id="@+id/e1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    android:textSize="24sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.492"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.198"
    tools:ignore="SpeakableTextPresentCheck" />

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

## **MainActivity.java**

```
package com.mahajant99.collegethree;

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 one,two,three,four,five,six,seven,eight,nine,zero;
    Button add,minus,multiply,divide,clear,equal,dot;
    EditText e1;
    float num1, num2;
    boolean Addition, Subtract, Multiplication,Division;

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);

one=findViewById(R.id.one);
two=findViewById(R.id.two);
three=findViewById(R.id.three);
four=findViewById(R.id.four);
five=findViewById(R.id.five);
six=findViewById(R.id.six);
seven=findViewById(R.id.seven);
eight=findViewById(R.id.eight);
seven=findViewById(R.id.seven);
nine=findViewById(R.id.nine);
zero=findViewById(R.id.zero);
add=findViewById(R.id.add);
minus=findViewById(R.id_MINUS);
multiply=findViewById(R.id.multiply);
divide=findViewById(R.id.divide);
clear=findViewById(R.id.clear);
equal=findViewById(R.id.equal);
e1=findViewById(R.id.e1);
dot=findViewById(R.id.dot);

one.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"1");
    }
});

two.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"2");
    }
});

three.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
```

```
        e1.setText(e1.getText()+"3");
    }
});

four.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"4");
    }
});

five.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"5");
    }
});

six.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"6");
    }
});

seven.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"7");
    }
});

eight.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"8");
    }
});
```

```
nine.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"9");
    }
});

zero.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText()+"0");
    }
});

clear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText("");
    }
});

add.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (e1 == null){
            e1.setText("");
        }else{
            num1 = Float.parseFloat(e1.getText()+"");
            Addition = true;
            e1.setText(null);
        }
    }
});

minus.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (e1 == null){
            e1.setText("");
        }
    }
});
```

```

        }else{
            num1 = Float.parseFloat(e1.getText()+"");
            Subtract = true;
            e1.setText(null);
        }
    }
});

multiply.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (e1 == null){
            e1.setText("");
        }else{
            num1 = Float.parseFloat(e1.getText()+"");
            Multiplication = true;
            e1.setText(null);
        }
    }
});

divide.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (e1 == null){
            e1.setText("");
        }else{
            num1 = Float.parseFloat(e1.getText()+"");
            Division = true;
            e1.setText(null);
        }
    }
});

equal.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        num2 = Float.parseFloat(e1.getText() + "");
        if (Addition == true) {
            e1.setText(num1 + num2 + "");
        }
    }
});

```

```
        Addition = false;
    }
    if (Subtract == true) {
        e1.setText(num1 - num2 + "");
        Subtract = false;
    }
    if (Multiplication == true) {
        e1.setText(num1 * num2 + "");
        Multiplication = false;
    }
    if (Division == true) {
        e1.setText(num1 / num2 + "");
        Division = false;
    }
}
});

dot.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        e1.setText(e1.getText() + ".");
    }
});
```

# Images

