

## Calculator

```
<?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="#292E49"
    android:orientation="vertical">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="204dp"
        android:orientation="vertical"
        android:padding="8dp">

        <TextView
            android:id="@+id/tvMath"
            android:layout_width="match_parent"
            android:layout_height="90dp"
            android:layout_margin="5dp"
            android:background="@drawable/circl"
            android:gravity="right|center_vertical"
            android:minHeight="48dp"
            android:text="@string/zero"
            android:textColor="#EEEEEE"
            android:textSize="30sp" />

        <TextView
            android:id="@+id/tvResult"
            android:layout_width="match_parent"
            android:layout_height="90dp"
            android:layout_margin="5dp"
            android:background="@drawable/circl"
            android:gravity="right|center_vertical"
            android:minHeight="48dp"
            android:text="@string/zero"
            android:textColor="#EEEEEE"
            android:textSize="30sp" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

        <Button
            android:id="@+id/btnOverX"
            style="@style/Widget.AppCompat.Button.Colored"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_margin="5dp"
```

```
        android:layout_weight="1"
        android:background="@drawable/circel"
        android:text="@string/parentheses_left"
        android:textSize="30sp" />
```

<Button

```
        android:id="@+id/btnToThe"
        style="@style/Widget.AppCompat.Button.Colored"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_margin="5dp"
        android:layout_weight="1"
        android:background="@drawable/circel"
        android:text="@string/Tothe"
        android:textSize="30sp" />
```

<Button

```
        android:id="@+id/btnParentheses"
        style="@style/Widget.AppCompat.Button.Colored"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_margin="5dp"
        android:layout_weight="1"
        android:background="@drawable/circel"
        android:text="@string/parentheses_right"
        android:textSize="30sp" />
```

<ImageButton

```
        android:id="@+id/btnDelete"
        style="@style/Widget.AppCompat.Button.Colored"
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_margin="5dp"
        android:layout_weight="1"
        android:background="@drawable/circel"
        android:backgroundTint="#C84B31"
        android:text="CE"
        app:srcCompat="@drawable/delete"
```

```
tools:ignore="SpeakableTextPresentCheck,SpeakableTextPresentCheck,ImageContrastCheck" />
```

</LinearLayout>

<LinearLayout

```
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">
```

<Button

```
        android:id="@+id/btnC"
        style="@style/Widget.AppCompat.Button.Colored"
        android:layout_width="0dp"
        android:layout_height="match_parent"
```

```
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circl"
    android:backgroundTint="#C84B31"
    android:text="@string/clear"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnPercent"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circl"
    android:text="@string/percent"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnPlusOverMinus"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circl"
    android:text="@string/plus_over_minus"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnDiv"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circl"
    android:backgroundTint="#346751"
    android:text="/"
    android:textSize="30sp"
    tools:text="@string/divide" />
```

#### </LinearLayout>

#### <LinearLayout

```
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">
```

#### <Button

```
    android:id="@+id/btn7"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
```

```
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/seven"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btn8"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/eight"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btn9"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/nine"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnMul"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:backgroundTint="#346751"
    android:text="@string/multiply"
    android:textSize="30sp" />
```

#### </LinearLayout>

#### <LinearLayout

```
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">
```

#### <Button

```
    android:id="@+id/btn4"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
```

```
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/four"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btn5"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/five"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btn6"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/six"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnSub"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:backgroundTint="#346751"
    android:text="@string/subtract"
    android:textSize="30sp"
```

```
tools:ignore="TextContrastCheck,TextContrastCheck,TextContrastCheck,TextContrastCheck" />
```

```
</LinearLayout>
```

#### <LinearLayout

```
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">
```

#### <Button

```
    android:id="@+id/btn1"
```

```
style="@style/Widget.AppCompat.Button.Colored"
android:layout_width="0dp"
android:layout_height="match_parent"
android:layout_margin="5dp"
android:layout_weight="1"
android:background="@drawable/circel"
android:text="@string/one"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/btn2"
style="@style/Widget.AppCompat.Button.Colored"
android:layout_width="0dp"
android:layout_height="match_parent"
android:layout_margin="5dp"
android:layout_weight="1"
android:background="@drawable/circel"
android:text="@string/two"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/btn3"
style="@style/Widget.AppCompat.Button.Colored"
android:layout_width="0dp"
android:layout_height="match_parent"
android:layout_margin="5dp"
android:layout_weight="1"
android:background="@drawable/circel"
android:text="@string/three"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/btnPlus"
style="@style/Widget.AppCompat.Button.Colored"
android:layout_width="0dp"
android:layout_height="match_parent"
android:layout_margin="5dp"
android:layout_weight="1"
android:background="@drawable/circel"
android:backgroundTint="#346751"
android:text="@string/add"
android:textSize="30sp" />
```

</LinearLayout>

<LinearLayout

```
android:layout_width="match_parent"
android:layout_height="0dp"
android:layout_weight="1"
android:orientation="horizontal">
```

<Button

```
android:id="@+id/btn0"
style="@style/Widget.AppCompat.Button.Colored"
```

```
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/zero"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btn000"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/zero3"
    android:textSize="30sp" />
```

#### <Button

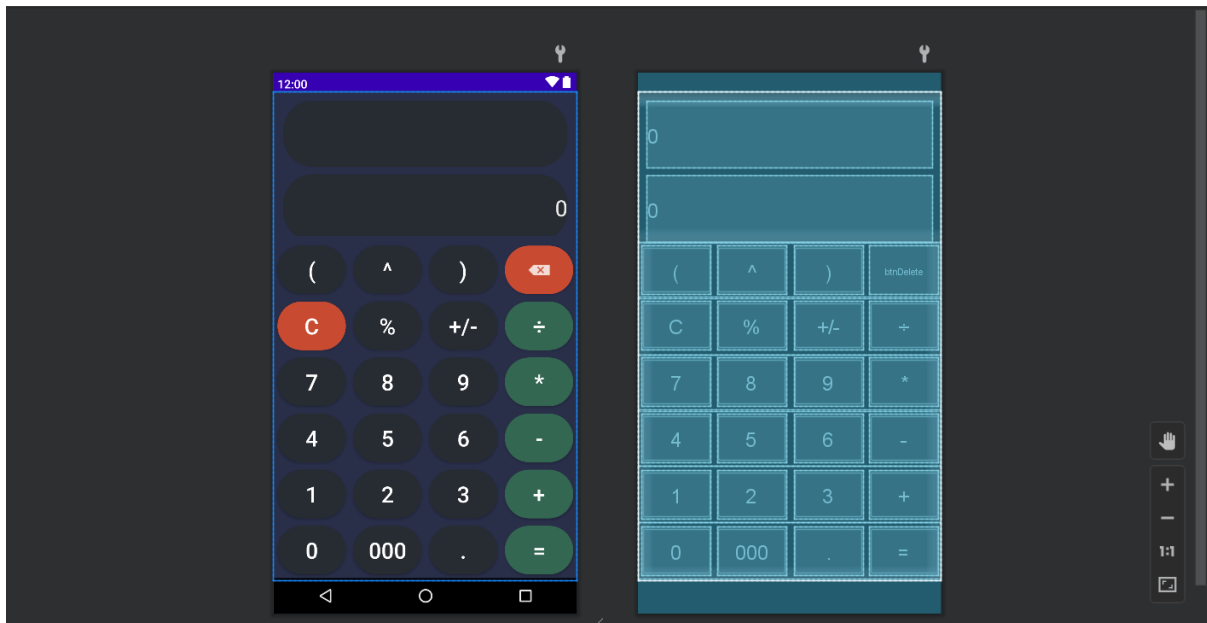
```
    android:id="@+id/btnDot"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:text="@string/point"
    android:textSize="30sp" />
```

#### <Button

```
    android:id="@+id/btnResult"
    style="@style/Widget.AppCompat.Button.Colored"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="5dp"
    android:layout_weight="1"
    android:background="@drawable/circel"
    android:backgroundTint="#346751"
    android:text="@string/equals"
    android:textSize="30sp" />
```

</LinearLayout>

</LinearLayout>



```

1  <resources>
2      <string name="app_name">Lab_02</string>
3
4      <string name="zero">0</string>
5      <string name="zero3">000</string>
6      <string name="one">1</string>
7      <string name="two">2</string>
8      <string name="three">3</string>
9      <string name="four">4</string>
10     <string name="five">5</string>
11     <string name="six">6</string>
12     <string name="seven">7</string>
13     <string name="eight">8</string>
14     <string name="nine">9</string>
15
16     <string name="clear">C</string>
17     <string name="delete">sto</string>
18     <string name="exponent">^</string>
19     <string name="parentheses_right">)</string>
20     <string name="parentheses_left">(</string>
21     <string name="divide">÷</string>
22     <string name="multiply">*</string>
23     <string name="add">+</string>
24     <string name="subtract">-</string>

```



```

24     <string name="subtract">-</string>
25     <string name="point">.</string>
26     <string name="equals">=</string>
27     <string name="One_over_X">1/X</string>
28     <string name="Tothe">^</string>
29     <string name="percent">%</string>
30     <string name="plus_over_minus">+/-</string>
31
32 </resources>
33

```

```

MainActivity.java x calculator_layout.xml x strings.xml x
1  package com.duy.lab_02;
2
3  import ...
11
12  public class MainActivity extends AppCompatActivity implements View.OnClickListener {
13
14      private TextView tvMath;
15      private TextView tvResult;
16
17      private int[] idButton = {
18          R.id.btn0,
19          R.id.btn1, R.id.btn2, R.id.btn3,
20          R.id.btn4, R.id.btn5, R.id.btn6,
21          R.id.btn7, R.id.btn8, R.id.btn9,
22          R.id.btnDot,
23          R.id.btnPlus, R.id.btnSub, R.id.btnMul, R.id.btnDiv,
24          R.id.btnPercent, R.id.btnOverX, R.id.btn000, R.id.btnToThe, R.id.btnPlusOverMinus,
25          R.id.btnDelete,
26          R.id.btnCancel, R.id.btnResult
27      };
28
29      @Override
30      protected void onCreate(Bundle savedInstanceState) {
31          super.onCreate(savedInstanceState);
32          setContentView(R.layout.calculator_layout);
33
34          connectView();

```

```

37      private void connectView() {
38          tvMath = (TextView) findViewById(R.id.tvMath);
39          tvResult = (TextView) findViewById(R.id.tvResult);
40
41          for (int i = 0; i < idButton.length; i++) {
42              findViewById(idButton[i]).setOnClickListener(this);
43          }
44          init();
45      }

```

```

47     private void init() {
48         tvMath.setText("|");
49         tvResult.setText("0");
50     }
51
52     @Override
53     public void onClick(View view) {
54         int id = view.getId();
55
56         // check button number and button operator
57         for (int i = 0; i < idButton.length - 2; i++) {
58             if (id == idButton[i]) {
59                 String text = ((Button) findViewById(id)).getText().toString();
60
61                 // clear char | on top
62                 if (tvMath.getText().toString().trim().equals("|")) {
63                     tvMath.setText("");
64                 }
65
66                 tvMath.append(text);
67                 return;
68             }
69         }

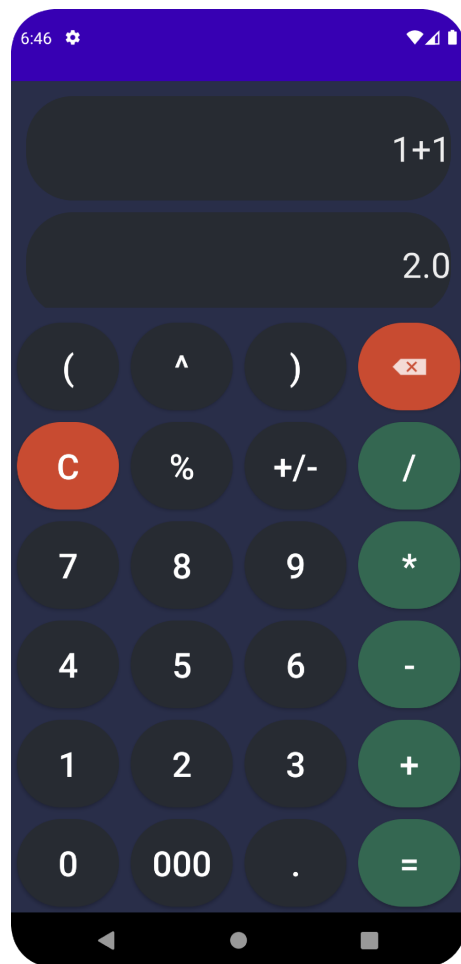
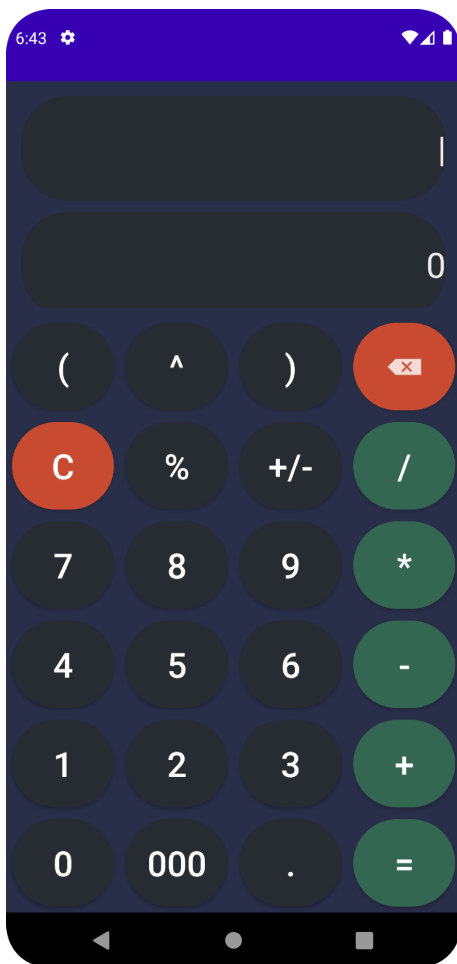
```

```

71         // clear screen
72         if (id == R.id.btnC) {
73             init();
74             return;
75         }
76
77         // calculation
78         if (id == R.id.btnResult) {
79             cal();
80         }
81     }
82
83     private void cal() {
84         String math = tvMath.getText().toString().trim();
85         if (math.length() > 0) {
86             Balan balan = new Balan();
87             String result = balan.valueMath(math) + "";
88             String error = balan.getError();
89
90             // check error
91             if (error != null) {
92                 tvResult.setText(error);
93             } else { // show result
94                 tvResult.setText(result);
95             }
96         }
97     }

```

```
calculator_layout.xml x  circel.xml x  MainActivity.java x  strings.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <selector xmlns:android="http://schemas.android.com/apk/res/android">
3      <item>
4          <shape android:shape="rectangle">
5              <corners android:radius="40dp" />
6              <solid android:color="#272B32"/>
7          </shape>
8      </item>
9  </selector>
```



## BMI\_Calculator

```
MainActivity.java × bmi_layout.xml × colors.xml × strings.xml ×

1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:tools="http://schemas.android.com/tools"
4      android:layout_width="match_parent"
5      android:layout_height="match_parent"
6      android:paddingLeft="16dp"
7      android:paddingRight="16dp">
8
9
10     <TextView
11         android:id="@+id/txtTitle"
12         android:layout_width="300dp"
13         android:layout_height="60dp"
14         android:text="@string/title"
15         android:textSize="30sp"
16         android:textStyle="bold"/>
17
18     <TextView
19         android:id="@+id/txtHeight"
20         android:layout_width="200dp"
21         android:layout_height="60dp"
22         android:layout_below="@id/txtTitle"
23         android:text="@string/height"
24         android:textSize="25sp" />
25
26
27     <EditText
28         android:id="@+id/editHeight"
29         android:layout_width="100dp"
30         android:layout_height="50dp"
31         android:layout_below="@id/txtHeight"
32         android:autofillHints=""
33         tools:ignore="LabelFor,SpeakableTextPresentCheck,TextFields" />
34
35     <TextView
36         android:id="@+id/txtCM"
37         android:layout_toEndOf="@id/editHeight"
38         android:layout_alignBottom="@id/editHeight"
39         android:layout_width="50dp"
40         android:layout_height="40dp"
41         android:textSize="25sp"
42         android:text="@string/cm"/>
43
44     <TextView
45         android:id="@+id/txtWeight"
46         android:layout_width="200dp"
47         android:layout_height="60dp"
48         android:layout_below="@+id/editHeight"
49         android:text="@string/weight"
50         android:textSize="25sp" />
51
```

```

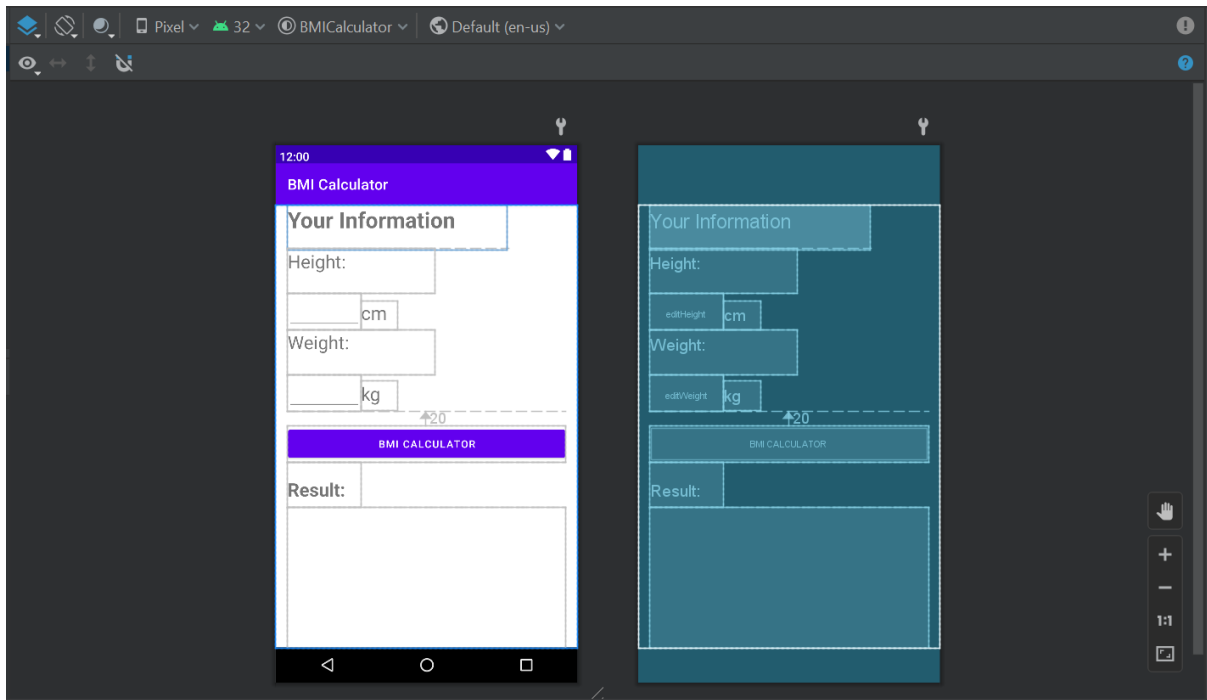
52     <EditText
53         android:id="@+id/editWeight"
54         android:layout_width="100dp"
55         android:layout_height="50dp"
56         android:layout_below="@id/txtWeight"
57         android:autofillHints=""
58         tools:ignore="LabelFor,SpeakableTextPresentCheck,TextFields" />
59
60     <TextView
61         android:id="@+id/txtKG"
62         android:layout_toEndOf="@id/editWeight"
63         android:layout_alignBottom="@id/editWeight"
64         android:layout_width="50dp"
65         android:layout_height="40dp"
66         android:textSize="25sp"
67         android:text="@string/kg"/>
68
69     <Button
70         android:id="@+id/btnResult"
71         android:layout_width="match_parent"
72         android:layout_height="50dp"
73         android:layout_below="@+id/editWeight"
74         android:layout_marginTop="20dp"
75         android:text="@string/BMI"

```

```

76     />
77
78     <TextView
79         android:id="@+id/txtResult"
80         android:layout_width="100dp"
81         android:layout_height="60dp"
82         android:layout_below="@id/btnResult"
83
84         android:paddingTop="20dp"
85         android:text="@string/result"
86         android:textSize="25sp"
87         android:textStyle="bold" />
88
89     <TextView
90         android:id="@+id/txtOutput"
91         android:layout_width="fill_parent"
92         android:layout_height="200dp"
93         android:layout_below="@id/txtResult"
94         android:textSize="25sp" />
95 </RelativeLayout>

```



```
MainActivity.java × bmi_layout.xml × colors.xml × strings.xml ×
Edit translations for all locales in the translations editor.

1  <resources>
2      <string name="app_name">BMI Calculator</string>
3      <string name="title">Your Information</string>
4      <string name="height">Height:</string>
5      <string name="cm">cm</string>
6      <string name="weight">Weight:</string>
7      <string name="kg">kg</string>
8      <string name="result">Result:</string>
9      <string name="BMI">BMI Calculator</string>
10
11 </resources>
```

```

MainActivity.java x bmi_layout.xml x colors.xml x strings.xml x
1 package com.duy.bmiccalculator;
2
3 import ...
12
13
14 public class MainActivity extends AppCompatActivity {
15
16     EditText height, weight;
17     TextView BMIresult;
18     Button btnResult;
19     String Output, BMI_Calculation;
20
21     @Override
22     protected void onCreate(Bundle savedInstanceState) {
23         super.onCreate(savedInstanceState);
24         setContentView(R.layout.bmi_layout);
25
26         height = findViewById(R.id.editHeight);
27         weight = findViewById(R.id.editWeight);
28         BMIresult = findViewById(R.id.txtOutput);
29         btnResult = findViewById(R.id.btnResult);
30
31         btnResult.setOnClickListener(v -> {
32             String txtHeight = height.getText().toString();
33             String txtWeight = weight.getText().toString();
34
35             float heightValue = Float.parseFloat(txtHeight);
36             float weightValue = Float.parseFloat(txtWeight);
37             float BMI = weightValue / ((heightValue/100 * heightValue/100));
38
39             if(txtHeight.isEmpty() || txtWeight.isEmpty()){
40                 Toast.makeText(context, this, text: "Please enter the full height and weight!", Toast.LENGTH_LONG).show();
41             } else if(BMI < 18.5){
42                 Output = "You are categorized as underweight";
43             } else if(BMI >= 18.5 && BMI < 24.5 ){
44                 Output = "You are categorized as normal weight";
45             } else if(BMI >= 24.5 && BMI < 29.9 ){
46                 Output = "You are categorized as overweight.";
47             } else if(BMI >= 29.9 && BMI < 34.9 ){
48                 Output = "You are categorized as obese class I (Moderately obese)";
49             } else if(BMI >= 34.9 && BMI < 39.9 ){
50                 Output = "You are categorized as obese class II (Severely obese)";
51             } else if(BMI >= 39.9 ){
52                 Output = "You are categorized as obese class III (Very severely)";
53             }
54             String a = String.format("%.2f", BMI);
55             BMI_Calculation = "Your BMI is " + a + "\n"
56                 + Output;
57             BMIresult.setText(BMI_Calculation);
58         });
59     }

```

11:08

BMI Calculator

Your Information

Height:

cm

Weight:

kg

BMI CALCULATOR

Result:

6:53

BMI Calculator

Your Information

Height:

159

cm

Weight:

54

kg

BMI CALCULATOR

Result:

Your BMI is 21.36

You are categorized as normal weight