Experiment #1 Implement Basic Calculator in Android

#activity_main.xml

```xml
1.   <?xml version="1.0" encoding="utf-8"?>
2.   <androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.androi
     d.com/apk/res/android"
3.       xmlns:app="http://schemas.android.com/apk/res-auto"
4.       xmlns:tools="http://schemas.android.com/tools"
5.       android:layout_width="match_parent"
6.       android:layout_height="match_parent"
7.       tools:context=".MainActivity">
8.
9.       <TextView
10.          android:id="@+id/appName"
11.          style="@style/text_style"
12.          android:layout_marginTop="48dp"
13.          android:text="@string/app_title"
14.          app:layout_constraintLeft_toLeftOf="parent"
15.          app:layout_constraintRight_toRightOf="parent"
16.          app:layout_constraintTop_toTopOf="parent" />
17.
18.      <Button
19.          android:id="@+id/addBtn"
20.          android:layout_width="wrap_content"
21.          android:layout_height="wrap_content"
22.          android:layout_marginStart="16dp"
23.          android:background="#8BC34A"
24.          android:fontFamily="@font/roboto_mono"
25.          android:paddingStart="@dimen/btn_pad"
26.          android:paddingEnd="@dimen/btn_pad"
27.          android:text="@string/add_btn_txt"
28.          android:textSize="18sp"
29.          android:textStyle="bold"
30.          app:layout_constraintBaseline_toBaselineOf="@+id/prodBtn"
31.          app:layout_constraintEnd_toStartOf="@+id/prodBtn"
32.          app:layout_constraintHorizontal_bias="0.5"
33.          app:layout_constraintStart_toStartOf="parent" />
34.
35.      <Button
36.          android:id="@+id/prodBtn"
37.          android:layout_width="wrap_content"
38.          android:layout_height="wrap_content"
39.          android:layout_marginStart="@dimen/margin_wide"
40.          android:layout_marginTop="50dp"
41.          android:layout_marginEnd="@dimen/margin_wide"
42.          android:background="#8BC34A"
43.          android:fontFamily="@font/roboto_mono"
44.          android:paddingStart="@dimen/btn_pad"
45.          android:paddingEnd="@dimen/btn_pad"
46.          android:text="@string/prod_btn_txt"
47.          android:textSize="18sp"
48.          android:textStyle="bold"
49.          app:layout_constraintEnd_toStartOf="@+id/modBtn"
50.          app:layout_constraintHorizontal_bias="0.5"
51.          app:layout_constraintStart_toEndOf="@+id/addBtn"
52.          app:layout_constraintTop_toBottomOf="@+id/num1_input" />
53.
54.      <Button
55.          android:id="@+id/modBtn"
56.          android:layout_width="wrap_content"
```

```
57.          android:layout_height="wrap_content"
58.          android:layout_marginEnd="@dimen/margin_wide"
59.          android:background="#8BC34A"
60.          android:fontFamily="@font/roboto_mono"
61.          android:paddingStart="@dimen/btn_pad"
62.          android:paddingEnd="@dimen/btn_pad"
63.          android:text="@string/mod_btn_txt"
64.          android:textSize="18sp"
65.          android:textStyle="bold"
66.          app:layout_constraintBaseline_toBaselineOf="@+id/prodBtn"
67.          app:layout_constraintEnd_toEndOf="parent"
68.          app:layout_constraintHorizontal_bias="0.5"
69.          app:layout_constraintStart_toEndOf="@+id/prodBtn" />
70.
71.      <EditText
72.          android:id="@+id/num2_input"
73.          style="@style/text_style"
74.          android:layout_width="213dp"
75.          android:layout_height="wrap_content"
76.          android:layout_marginStart="@dimen/margin_wide"
77.          android:layout_marginTop="50dp"
78.          android:layout_marginEnd="@dimen/margin_wide"
79.          android:ems="10"
80.          android:hint="@string/hint_num2"
81.          android:inputType="textPersonName"
82.          app:layout_constraintEnd_toEndOf="parent"
83.          app:layout_constraintStart_toStartOf="parent"
84.          app:layout_constraintTop_toBottomOf="@+id/prodBtn" />
85.
86.      <EditText
87.          android:id="@+id/num1_input"
88.          style="@style/text_style"
89.          android:layout_width="213dp"
90.          android:layout_height="wrap_content"
91.          android:layout_marginStart="@dimen/margin_wide"
92.          android:layout_marginTop="104dp"
93.          android:layout_marginEnd="@dimen/margin_wide"
94.          android:ems="10"
95.          android:hint="@string/hint_num1"
96.          android:inputType="textPersonName"
97.          app:layout_constraintEnd_toEndOf="parent"
98.          app:layout_constraintStart_toStartOf="parent"
99.          app:layout_constraintTop_toBottomOf="@+id/appName" />
100.
101.         <TextView
102.             android:id="@+id/result"
103.             style="@style/text_style"
104.             android:layout_width="wrap_content"
105.             android:layout_height="wrap_content"
106.             android:layout_marginTop="50dp"
107.             android:hint="@string/hint_res"
108.             android:paddingStart="@dimen/margin_wide"
109.             android:paddingEnd="@dimen/margin_wide"
110.             app:layout_constraintEnd_toEndOf="parent"
111.             app:layout_constraintHorizontal_bias="0.503"
112.             app:layout_constraintStart_toStartOf="parent"
113.             app:layout_constraintTop_toBottomOf="@+id/num2_input" />
114.
115.     </androidx.constraintlayout.widget.ConstraintLayout>
```

Experiment #1 Implement Basic Calculator in Android

#activity_main.kt

```kotlin
1.  package com.example.basixcalculator
2.
3.  import androidx.appcompat.app.AppCompatActivity
4.  import android.os.Bundle
5.  import android.view.View
6.  import android.widget.Button
7.  import android.widget.EditText
8.  import android.widget.TextView
9.
10. class MainActivity : AppCompatActivity() {
11.     lateinit var num1:EditText
12.     lateinit var num2:EditText
13.     lateinit var res:TextView
14.
15.     override fun onCreate(savedInstanceState: Bundle?) {
16.         super.onCreate(savedInstanceState)
17.         setContentView(R.layout.activity_main)
18.
19.         num1 = findViewById<EditText>(R.id.num1_input)
20.         num2 = findViewById<EditText>(R.id.num2_input)
21.         res = findViewById<TextView>(R.id.result)
22.
23.         addListener()
24.
25.     }
26.     private fun calculate(view: View){
27.         val num1Txt = num1.text.toString().toInt()
28.         val num2Txt = num2.text.toString().toInt()
29.
30.         when(view.id){
31.             R.id.addBtn -> res.text = "Equals ${num1Txt+num2Txt}"
32.             R.id.prodBtn -> res.text = "Equals ${num1Txt * num2Txt}"
33.             else -> res.text = "Equals ${num1Txt % num2Txt}"
34.         }
35.     }
36.     private fun addListener(){
37.         val addBtn = findViewById<Button>(R.id.addBtn)
38.         val prodBtn = findViewById<Button>(R.id.prodBtn)
39.         val modBtn = findViewById<Button>(R.id.modBtn)
40.
41.         val operations: List<View> = listOf(addBtn, prodBtn, modBtn)
42.
43.         for(opr in operations)
44.             opr.setOnClickListener{ calculate(it) }
45.
46.     }
47. }
```

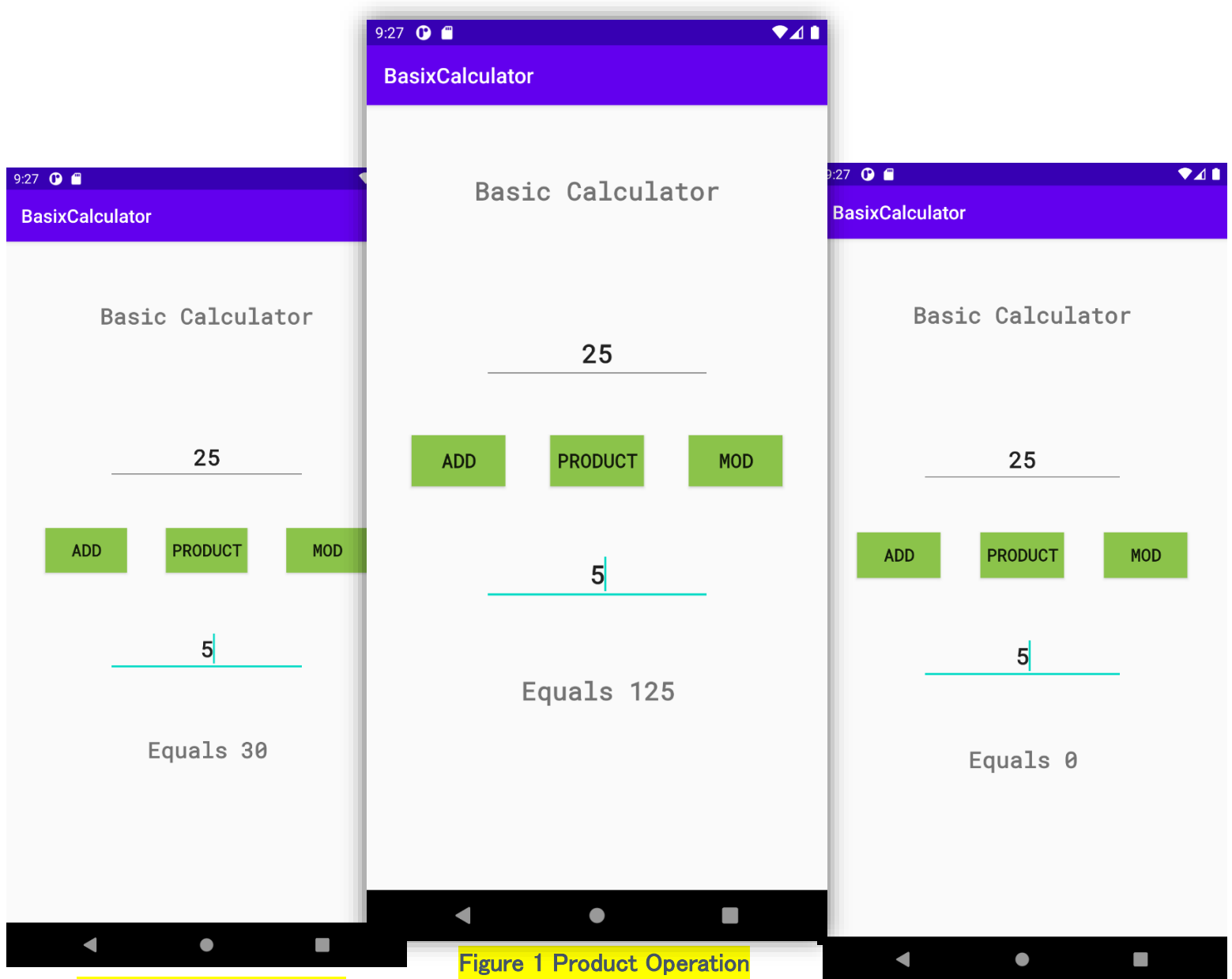# Experiment #1 Implement Basic Calculator in Android

#Snapshots

Figure 1 Addition Operation

Figure 1 Product Operation

Figure 3 Mod Operation