ROLL NO: - 4334 SYBSC [CS]

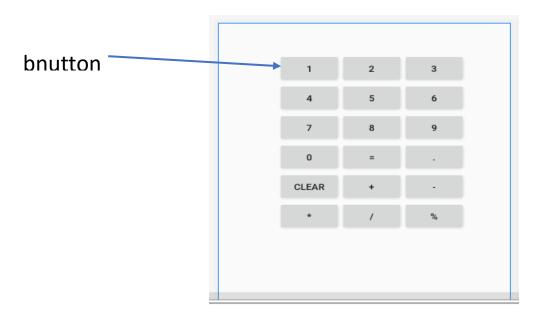
## Android Developer Fundamentals (TCSCCS0407P)

Name: Kaysan Shaikh

Div: A

#### **Assignment No: 02**

Create an android Calculator app with Interactive User Interface using appropriate layouts.



#### Layout used:

- 1. LinearLayout
- 2. RelativeLayout

### Code: -

### activity\_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:orientation="vertical">
    <RelativeLayout
        android:id="@+id/relativeLayout1"
        android:layout_width="312dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"</pre>
```

```
android:layout_marginLeft="35dp">
<Button
  android:id="@+id/button1"
  android:layout width="wrap content"
  android:layout_height="wrap_content"
  android:layout alignParentLeft="true"
  android:layout_marginTop="150dp"
  android:padding="20px"
  android:text="1"></Button>
<Button
  android:id="@+id/button2"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout_alignTop="@+id/button1"
  android:layout alignParentLeft="true"
  android:layout_marginLeft="89dp"
  android:layout_marginTop="0dp"
  android:layout toRightOf="@+id/button1"
  android:padding="20px"
  android:text="2"></Button>
<Button
  android:id="@+id/button3"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout alignTop="@+id/button2"
  android:layout_marginLeft="2dp"
  android:layout marginTop="0dp"
  android:layout_toRightOf="@+id/button2"
  android:padding="20px"
  android:text="3"></Button>
<Button
  android:id="@+id/button4"
  android:layout width="wrap content"
  android:layout height="wrap content"
  android:layout_alignParentLeft="true"
  android:layout below="@+id/button1"
  android:padding="20px"
  android:text="4"></Button>
<Button
  android:id="@+id/button5"
```

```
android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout alignTop="@+id/button4"
  android:layout_toRightOf="@+id/button4"
  android:padding="20px"
  android:text="5"></Button>
<Button
  android:id="@+id/button6"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_alignTop="@+id/button4"
  android:layout toRightOf="@+id/button5"
  android:padding="20px"
  android:text="6"></Button>
<Button
  android:id="@+id/button7"
  android:layout width="wrap content"
  android:layout_height="wrap_content"
  android:layout_alignParentLeft="true"
  android:layout below="@+id/button4"
  android:padding="20px"
  android:text="7"></Button>
<Button
  android:id="@+id/button8"
  android:layout width="wrap content"
  android:layout_height="wrap_content"
  android:layout alignTop="@+id/button7"
  android:layout toRightOf="@+id/button7"
  android:padding="20px"
  android:text="8"></Button>
<Button
  android:id="@+id/button9"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout alignTop="@+id/button7"
  android:layout_toRightOf="@+id/button8"
  android:padding="20px"
  android:text="9"></Button>
<Button
  android:id="@+id/button0"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout_alignParentLeft="true"
  android:layout_below="@+id/button7"
```

```
android:padding="20px"
  android:text="0"></Button>
<Button
  android:id="@+id/button15"
  android:layout width="wrap content"
  android:layout_height="wrap_content"
  android:layout alignTop="@+id/button0"
  android:layout_toRightOf="@+id/button0"
  android:padding="20px"
  android:text="="></Button>
<Button
  android:id="@+id/button18"
  android:layout width="wrap content"
  android:layout_height="wrap_content"
  android:layout alignTop="@+id/button0"
  android:layout_toRightOf="@+id/button15"
  android:padding="20px"
  android:text="."></Button>
<Button
  android:id="@+id/button16"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout alignParentLeft="true"
  android:layout below="@+id/button0"
  android:padding="20px"
  android:text="clear"></Button>
<Button
  android:id="@+id/button11"
  android:layout_width="wrap_content"
  android:layout height="wrap content"
  android:layout_alignTop="@+id/button16"
  android:layout toRightOf="@+id/button16"
  android:padding="20px"
  android:text="+"></Button>
<Button
  android:id="@+id/button12"
  android:layout width="wrap content"
  android:layout height="wrap content"
  android:layout_alignTop="@+id/button16"
  android:layout toRightOf="@+id/button11"
  android:padding="20px"
  android:text="-"></Button>
<Button
  android:id="@+id/button13"
```

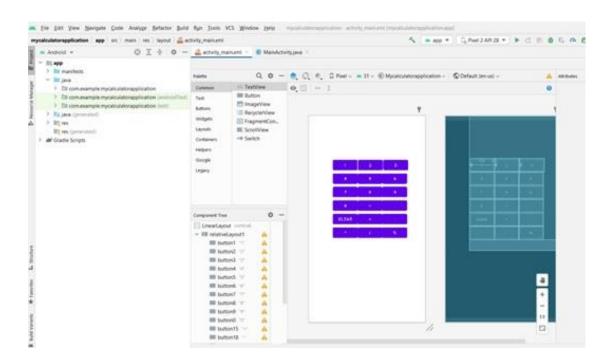
```
android:layout_width="wrap_content"
       android:layout height="wrap content"
       android:layout alignParentLeft="true"
       android:layout_below="@+id/button16"
       android:padding="20px"
       android:text="*"></Button>
    <Button
      android:id="@+id/button14"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_alignTop="@+id/button13"
       android:layout toRightOf="@+id/button13"
       android:padding="20px"
       android:text="/"></Button>
    <Button
       android:id="@+id/button17"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_alignTop="@+id/button13"
       android:layout toRightOf="@+id/button14"
       android:padding="20px"
      android:text="%"></Button>
    <TextView
       android:id="@+id/TextView1"
       android:layout width="fill parent"
       android:layout_height="wrap_content"
       android:layout_below="@+id/button13"
       android:fontFamily="serif"
       android:textSize="30dp"></TextView>
  </RelativeLayout>
</LinearLayout>
```

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### MainAtivity.java:

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    TextView tv1;
    Integer c,d,r,b;
    String a = "0", aa;
    Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17,b18;

@Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
            tv1 = (TextView) findViewById(R.id.TextView1);
```

import androidx.appcompat.app.AppCompatActivity;

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```
b1 = (Button) findViewById(R.id.button1);
b2 = (Button) findViewById(R.id.button2);
b3 = (Button) findViewById(R.id.button3);
b4 = (Button) findViewById(R.id.button4);
b5 = (Button) findViewById(R.id.button5);
b6 = (Button) findViewById(R.id.button6);
b7 = (Button) findViewById(R.id.button7);
b8 = (Button) findViewById(R.id.button8);
b9 = (Button) findViewById(R.id.button9);
b10 = (Button) findViewById(R.id.button0);
b11 = (Button) findViewById(R.id.button11);
b12 = (Button) findViewById(R.id.button12);
b13 = (Button) findViewById(R.id.button13);
b14= (Button) findViewById(R.id.button14);
b15= (Button) findViewById(R.id.button15);
b16= (Button) findViewById(R.id.button16);
b17= (Button) findViewById(R.id.button17);
b18= (Button) findViewById(R.id.button18);
b1.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "1";
    tv1.setText(a);
  }
});
b2.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "2";
    tv1.setText(a);
  }
});
b3.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "3";
    tv1.setText(a);
  }
});
b4.setOnClickListener(new View.OnClickListener() {
```

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```
public void onClick(View v) {
     a = tv1.getText().toString();
    a = a + "4";
    tv1.setText(a);
  }
});
b5.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "5";
    tv1.setText(a);
  }
});
b6.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "6";
    tv1.setText(a);
  }
});
b7.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "7";
    tv1.setText(a);
  }
});
b8.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "8";
    tv1.setText(a);
  }
});
b9.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "9";
    tv1.setText(a);
});
```

```
b10.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    a = tv1.getText().toString();
    a = a + "0";
    tv1.setText(a);
  }
});
b11.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    aa = a;
    b = 1;
    a = "";
    //tv1.setText(+);
    tv1.setText("");
  }
});
b12.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    aa = a:
    b = 2;
    a = "";
    //tv1.setText(a);
    tv1.setText("-");
    tv1.setText("");
  }
});
b13.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    aa = a;
    b = 3;
    a = "";
    //tv1.setText(a);
    tv1.setText("*");
    tv1.setText("");
  }
});
b14.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
    aa = a;
    b = 4;
    a = "";
```

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```
//tv1.setText(a);
     tv1.setText("/");
     tv1.setText("");
  }
});
//OnClickevent handling for =
b15.setOnClickListener(new View.OnClickListener() {
  public void onClick(View v) {
     if (b == 1){
       c = Integer.parseInt(aa);
       d = Integer.parseInt(a);
       r = c + d;
     else if (b == 4)
       c = Integer.parseInt(aa);
       d = Integer.parseInt(a);
       r = c/d;
     else if (b == 2)
       c = Integer.parseInt(aa);
       d = Integer.parseInt(a);
       r = c - d;
     } else if (b == 3) {
       c = Integer.parseInt(aa);
       d = Integer.parseInt(a);
       r = c * d;
     String op ="";
     switch (b) {
       case 1: op = " + ";
          break;
       case 2: op = " - ";
          break;
       case 3: op = " * ";
          break;
       case 4: op = "/";
     tv1.setText(c + op + d + " = " + r);
     String ans=c + op + d + " = " + r;
     Toast.makeText(MainActivity.this, ans, Toast.LENGTH_LONG).show();
  }
});
```

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```
b16.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        tv1.setText("");
    }
});
```

### **Output:**

