

MOBILE APPLICATION DEVELOPMENT

(LAB#03)



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BSCS-7A

Task1: Design any one login form from the following forms.

Note: On button click, display a message i.e., 'Login Successful'

MainActivity.java:

```
package com.example.myapplication;

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;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        EditText emailtext = (EditText)findViewById(R.id.user_name);
        EditText passtext = (EditText)findViewById(R.id.pass);
        Button btn1 = (Button)findViewById(R.id.Loginbtn);
        btn1.setOnClickListener(new View.OnClickListener() {
            @Override
```

```

        public void onClick(View v) {
            String user = emailtext.toString();
            String pass1 = passtext.toString();
            TextView mytxt = (TextView)findViewById(R.id.success);
            if(user == "hannan@gmail.com" && pass1 == "1234") {
                mytxt.setText("Login Successfull!!!");
            }
        });
    }
}

```

Activity_main.xml:

```

<?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:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/gardient"
    tools:context="MainActivity"
    >

    <TextView
        android:layout_width="match_parent"
        android:layout_height="150dp"
        android:text="@string/login"
        android:paddingVertical="35dp"
        android:textAlignment="center"
        android:textSize="60sp"
        android:fontFamily="cursive"
        android:textColor="@color/white"
        android:layout_marginBottom="25dp"/>
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="150dp"
        app:srcCompat="@drawable/profile"
        android:contentDescription="@string/todo" />
    <TextView
        android:layout_width="match_parent"
        android:layout_marginHorizontal="30dp"
        android:layout_height="wrap_content"
        android:text="@string/user_name"
        android:textColor="@color/coloraccent"
        />
    <EditText
        android:id="@+id/user_name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginHorizontal="30dp"
        android:autofillHints=""
        android:backgroundTint="@color/white"
        />

```

```
        android:hint="@string/username"
        android:inputType="textEmailAddress"
        android:paddingHorizontal="12dp"
        android:paddingVertical="20dp"
        android:textColor="@color/white" />
<TextView
    android:layout_width="match_parent"
    android:layout_marginHorizontal="30dp"
    android:layout_height="wrap_content"
    android:text="@string/password"
    android:textColor="@color/coloraccent"
/>

<EditText
    android:id="@+id/pass"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="30dp"
    android:autofillHints=""
    android:backgroundTint="#F8F6F6"
    android:hint="@string/password"
    android:inputType="textPassword"
    android:paddingHorizontal="12dp"
    android:paddingVertical="20dp" />

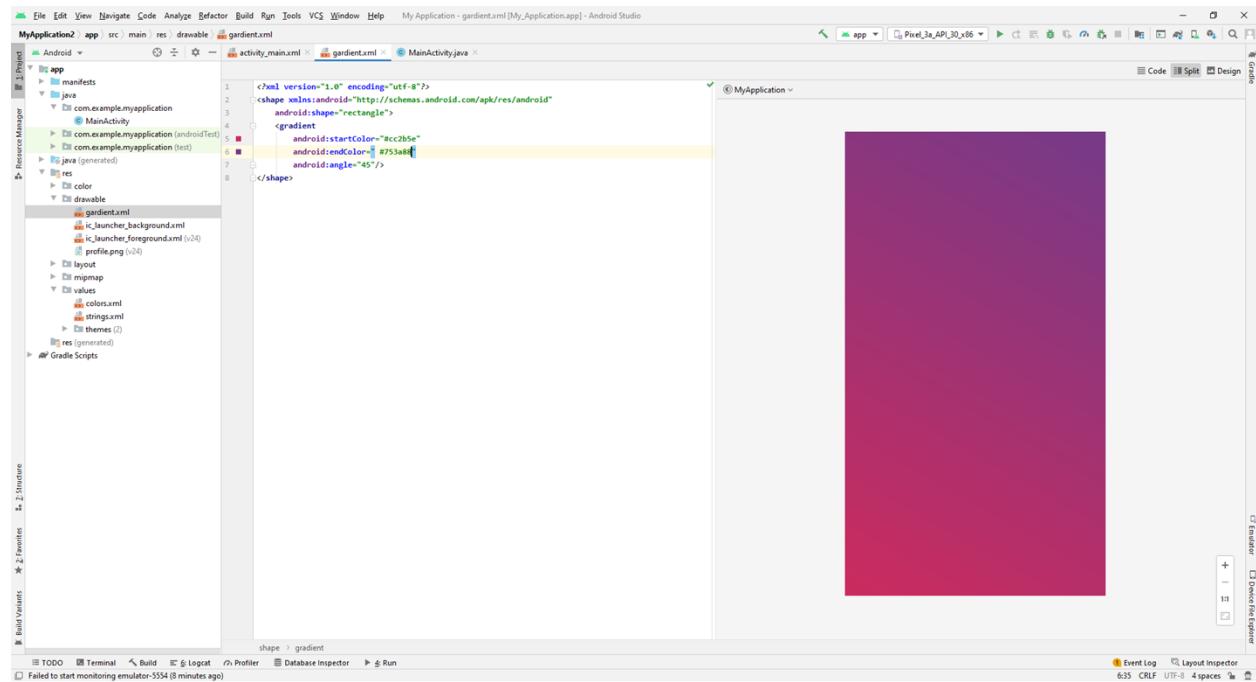
<Button
    android:id="@+id/loginbtn"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="30dp"
    android:layout_marginVertical="20dp"
    android:background="@color/design_default_color_error"
    android:text="@string/login"
    android:textColor="@color/white"
    tools:ignore="OnClick" />

<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/no_account_yet_create_one"
    android:layout_marginHorizontal="30dp"
    android:textAlignment="center"
/>

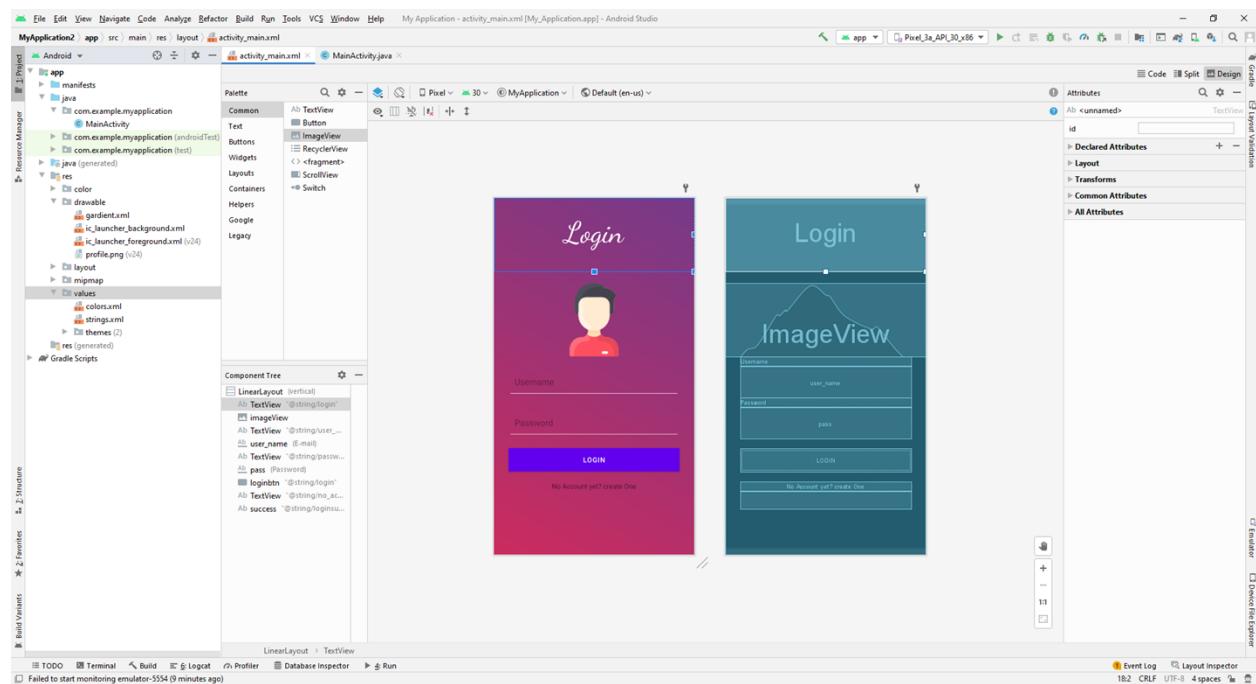
<TextView
    android:id="@+id/success"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="30dp"
    android:fontFamily="sans-serif-smallcaps"
    android:text="@string/loginsuccess"
    android:textColor="@color/white"
    android:textSize="30sp" />
```

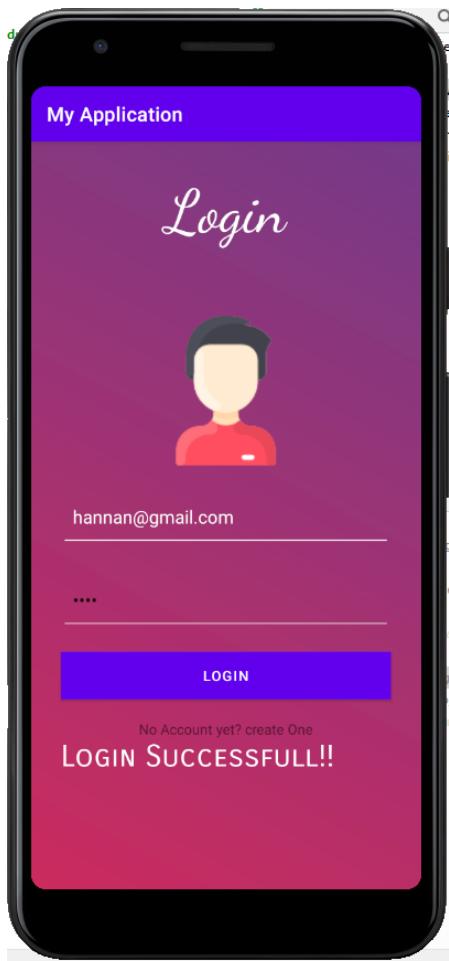
```
</LinearLayout>
```

Gradient.xml:



Design:





2. Design a simple calculator app with following functionality: i. Addition ii. Subtraction iii. Multiplication iv. Division

MainActivity.java:

```
package com.example.calculator;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Build;
import android.os.Bundle;
import org.mariuszgromada.math.mxparser.*;
import android.text.Spannable;
import android.text.SpannableStringBuilder;
import android.view.View;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    private EditText display;
    @RequiresApi(api = Build.VERSION_CODES.LOLLIPOP)
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

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

display=findViewById(R.id.input);
display.setShowSoftInputOnFocus(false);
display.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v) {
        if (getString(R.string.display).equals(display.getText().toString()))
    {
        display.setText("");
    }
}
));
}

private void updatetext(String strToAdd){
String oldstr = display.getText().toString();
int cursorpos = display.getSelectionStart();
String leftstr = oldstr.substring(0, cursorpos);
String rightstr = oldstr.substring(cursorpos);
if(getString(R.string.display).equals(display.getText().toString()))
{
    display.setText(strToAdd);
    display.setSelection(cursorpos + 1);
}
else
{
    display.setText(String.format("%s%s%s", leftstr, strToAdd,rightstr));
    display.setSelection(cursorpos + 1);
}
}

public void zero(View view )
{
    updatetext("0");
}

public void one(View view )
{
    updatetext("1");
}

public void two(View view )
{
    updatetext("2");
}

public void three(View view )
{
    updatetext("3");
}

public void four(View view )
{
```

```

        updatetext("4");

    }
    public void five(View view )
    {
        updatetext("5");

    } public void six(View view )
    {
        updatetext("6");

    }
    public void seven(View view )
    {
        updatetext("7");

    }
    public void eight(View view )
    {
        updatetext("8");

    }
    public void nine(View view )
    {
        updatetext("9");

    }
    public void equal(View view )
    {
        String userexp = display.getText().toString();
        userexp = userexp.replaceAll("÷","/");
        userexp = userexp.replaceAll("×","*");

        Expression exp = new Expression(userexp);
        String res = String.valueOf(exp.calculate());
        display.setText(res);
        display.setSelection(res.length());
        display.setSelection(res.length());

    }
    public void parenthesis(View view )
    {
        int cursorpos = display.getSelectionStart();
        int openparanthesis = 0;
        int closepara = 0;
        int textlen = display.getText().length();
        for(int i=0;i<cursorpos;i++)
        {
            if(display.getText().toString().substring(i, i+1).equals("(")){
                openparanthesis +=1;
            }
            if(display.getText().toString().substring(i, i+1).equals(")")){
                closepara +=1;
            }
        }
    }
}

```

```

        if(openparanthesis==closepara ||
display.getText().toString().substring(textlen-1,textlen).equals("(")){
            updatetext("(");
            display.setSelection(cursorpos + 1);
        }
        else if(closepara<openparanthesis &&
!display.getText().toString().substring(textlen-1,textlen).equals(")")){
            updatetext(")");
        }
        display.setSelection(cursorpos+1);

    }
    public void plus(View view )
    {
        updatetext("+");

    }
    public void minus(View view )
    {
        updatetext("-");

    }
    public void multiply(View view )
    {
        updatetext("*");

    }
    public void divide(View view )
    {
        updatetext("/");

    }
    public void point(View view )
    {
        updatetext(".");

    }
    public void backspace(View view )
    {
        int cursorpos = display.getSelectionStart();
        int textlen = display.getText().length();

        if (cursorpos != 0 && textlen !=0)
        {
            SpannableStringBuilder selection = (SpannableStringBuilder)
display.getText();
            selection.replace(cursorpos-1,cursorpos,"");
            display.setText(selection);
            display.setSelection(cursorpos - 1);
        }

    }
    public void clear(View view )

```

```

    {
        display.setText("");
    }
    public void percentage(View view )
    {
        updatetext("%");
    }
}

```

Activity.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="#FFFFFF"
    tools:context=".MainActivity">

    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/input"
        app:layout_constraintVertical_bias="0.96">

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent">

            <Button
                android:id="@+id/clear"
                style="@style/Widget.AppCompat.Button.Borderless"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:background="@drawable/circle"
                android:onClick="clear"
                android:text="@string/clear"
                android:textColor="#100F0F"
                android:textSize="18sp"
                app:backgroundTint="#DD2C00" />

            <Button
                android:id="@+id/paranthesis"
                style="@style/Widget.AppCompat.Button.Borderless"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:background="@drawable/circle"
                android:onClick="paranthesis"

```

```
        android:text="@string/paranthesis"
        android:textColor="#100F0F"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/backspace"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="backspace"
        android:text="@string/backspace"
        android:textColor="#171515"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/divide"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="divide"
        android:text="@string/divide"
        android:textColor="#0B0A0A"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />
</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/seven"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="seven"
        android:text="@string/seven"
        android:textColor="#131212"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/eight"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
```

```
        android:background="@drawable/circle"
        android:onClick="eight"
        android:text="@string/eight"
        android:textColor="#0E0C0C"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/nine"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="nine"
        android:text="@string/nine"
        android:textColor="#131111"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/multiply"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="multiply"
        android:text="@string/multiply"
        android:textColor="#221F1F"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />
</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/four"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="four"
        android:text="@string/four"
        android:textColor="#191717"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/five"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
```

```
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="five"
        android:text="@string/five"
        android:textColor="#0E0D0D"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/six"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="six"
        android:text="@string/six"
        android:textColor="#151414"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/plus"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="plus"
        android:text="@string/add"
        android:textColor="#0B0A0A"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />
    </TableRow>

    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <Button
            android:id="@+id/one"
            style="@style/Widget.AppCompat.Button.Borderless"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:background="@drawable/circle"
            android:onClick="one"
            android:text="@string/one"
            android:textColor="#100F0F"
            android:textSize="18sp"
            app:backgroundTint="@color/purple_200" />

        <Button
            android:id="@+id/two"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:background="@drawable/circle"
            android:onClick="two"
            android:text="@string/two"
            android:textColor="#100F0F"
            android:textSize="18sp"
            app:backgroundTint="@color/purple_200" />
    </TableRow>

```

```
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="two"
        android:text="@string/two"
        android:textColor="#121010"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/three"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="three"
        android:text="@string/three"
        android:textColor="#0C0C0C"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

    <Button
        android:id="@+id/subtract"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="minus"
        android:text="@string/subtract"
        android:textColor="#131212"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />

</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/percentage"
        style="@style/Widget.AppCompat.Button.Borderless"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@drawable/circle"
        android:onClick="percentage"
        android:text="@string/percentage"
        android:textColor="#171414"
        android:textSize="18sp"
        app:backgroundTint="@color/purple_200" />


```

```
<Button
    android:id="@+id/zero"
    style="@style/Widget.AppCompat.Button.Borderless"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="@drawable/circle"
    android:onClick="zero"
    android:text="@string/zero"
    android:textColor="#070606"
    android:textSize="18sp"
    app:backgroundTint="@color/purple_200" />

<Button
    android:id="@+id/point"
    style="@style/Widget.AppCompat.Button.Borderless"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="@drawable/circle"
    android:onClick="point"
    android:text="@string/point"
    android:textColor="#070505"
    android:textSize="18sp"
    app:backgroundTint="@color/purple_200" />

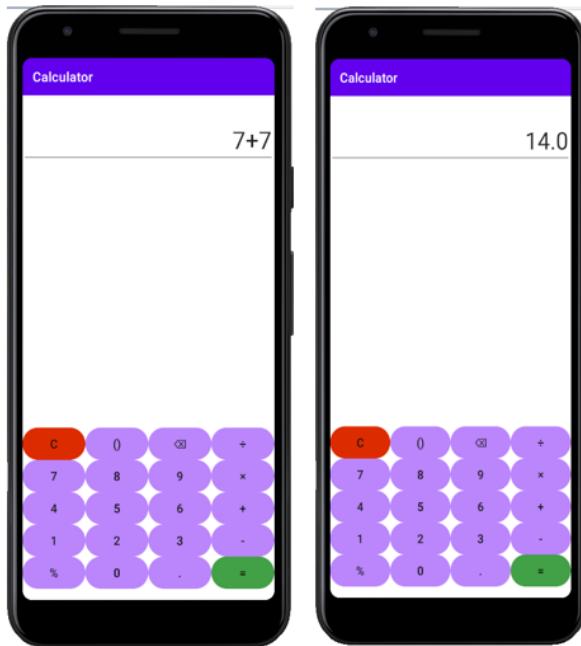
<Button
    android:id="@+id/equal"
    style="@style/Widget.AppCompat.Button.Borderless"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="@drawable/circle"
    android:onClick="equal"
    android:text="@string/equal"
    android:textColor="#0B0A0A"
    android:textSize="18sp"
    app:backgroundTint="#43A047" />
</TableRow>
</TableLayout>

<EditText
    android:id="@+id/input"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="32dp"
    android:text="@string/display"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:autofillHints="false"
    android:inputType="none"
    android:textSize="36sp"
    android:textAlignment="textEnd"
```

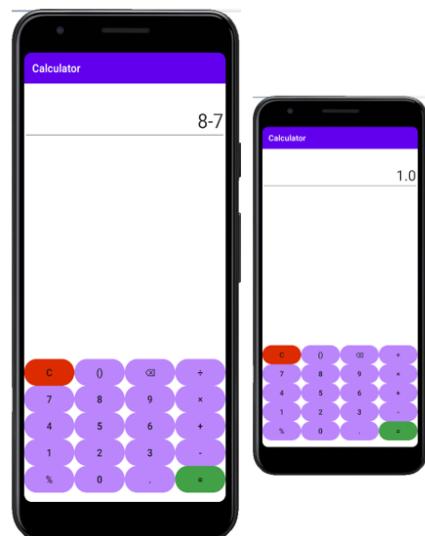
```
tools:ignore="LabelFor"
        android:gravity="end" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output:

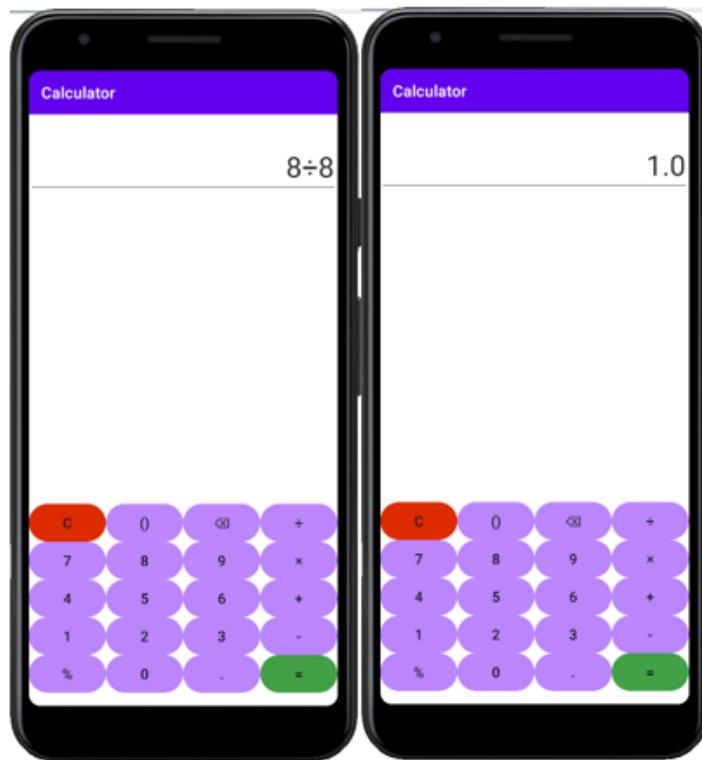
Addition:



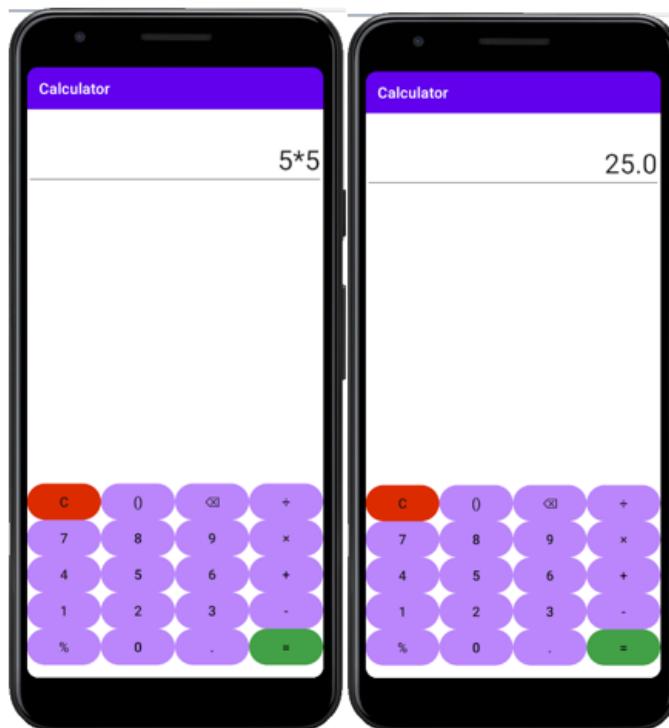
Subtraction:



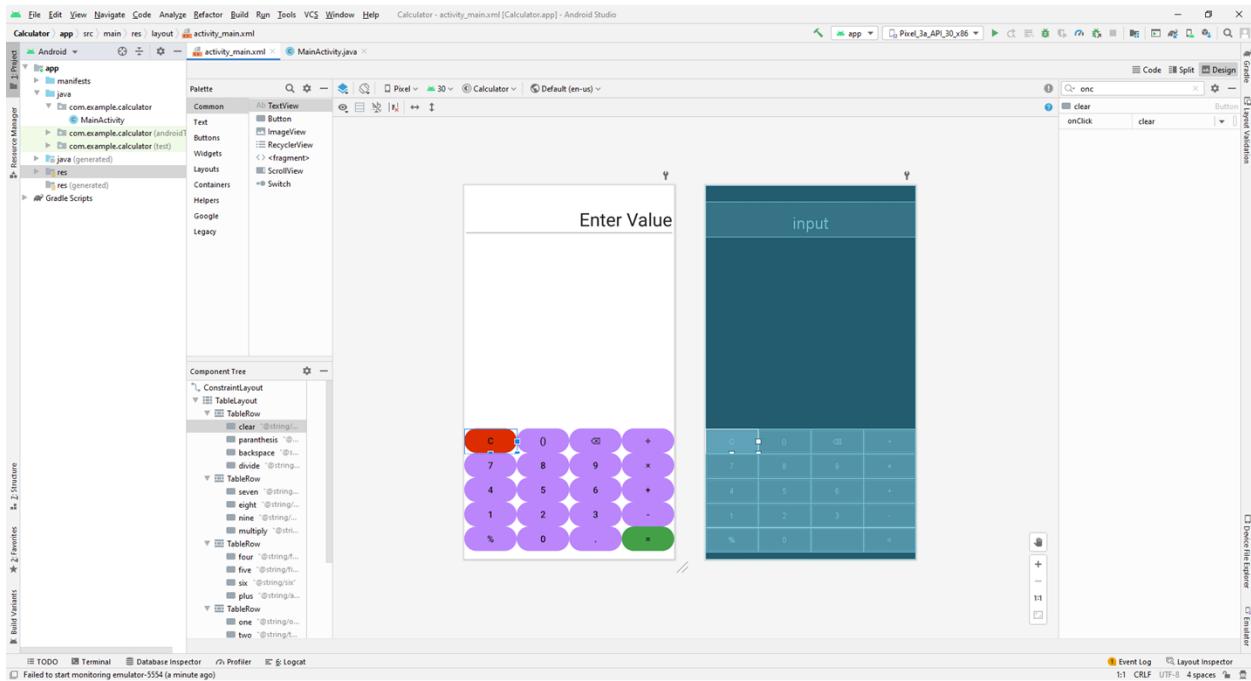
Division:



Multiplication:



Design:



Button Design:

