Disclaimer

This PDF contains 5 Android app development source codes, carefully crafted and thoroughly tested using the latest Android Studio platform. Please note: these codes are not designed to work in Eclipse Android Development software.

If you're reading this disclaimer, great! You're now fully aware that running these codes in Eclipse will likely result in errors. Let's not be the person who says, *"Bro, your code is broken,"* without checking the tools first.

For those who skip this disclaimer and still declare, *"This code doesn't work, bro,"*—well, let's just say the code isn't the problem.

PROGRAM:

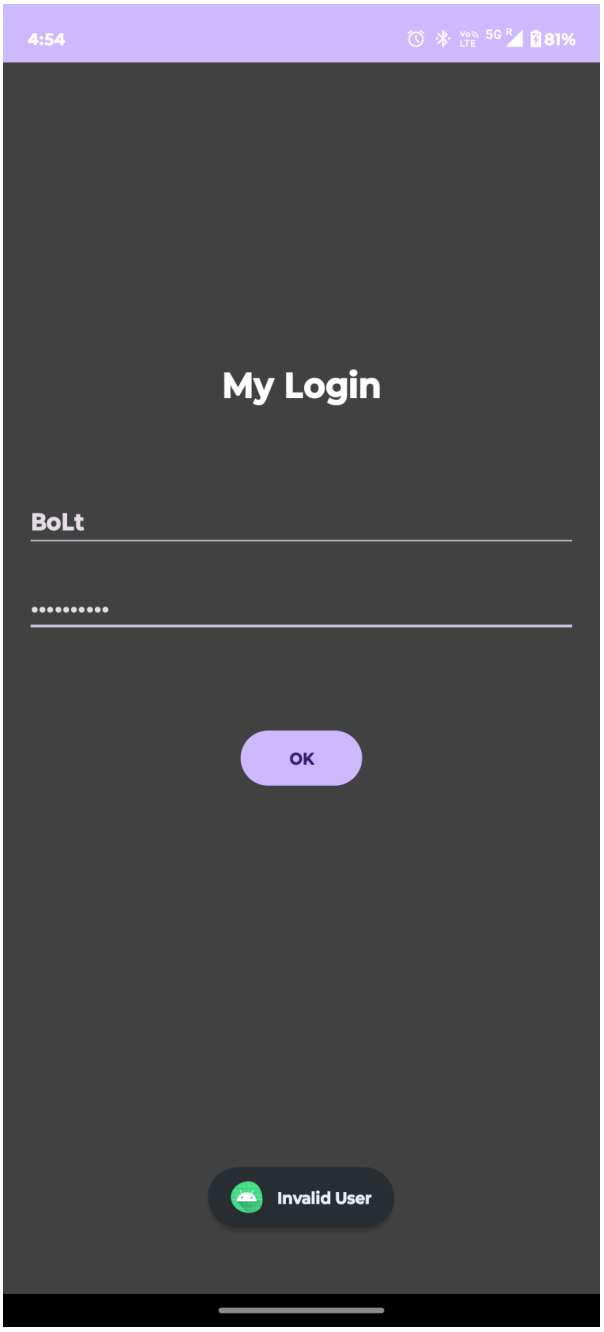
Activity_main.xm

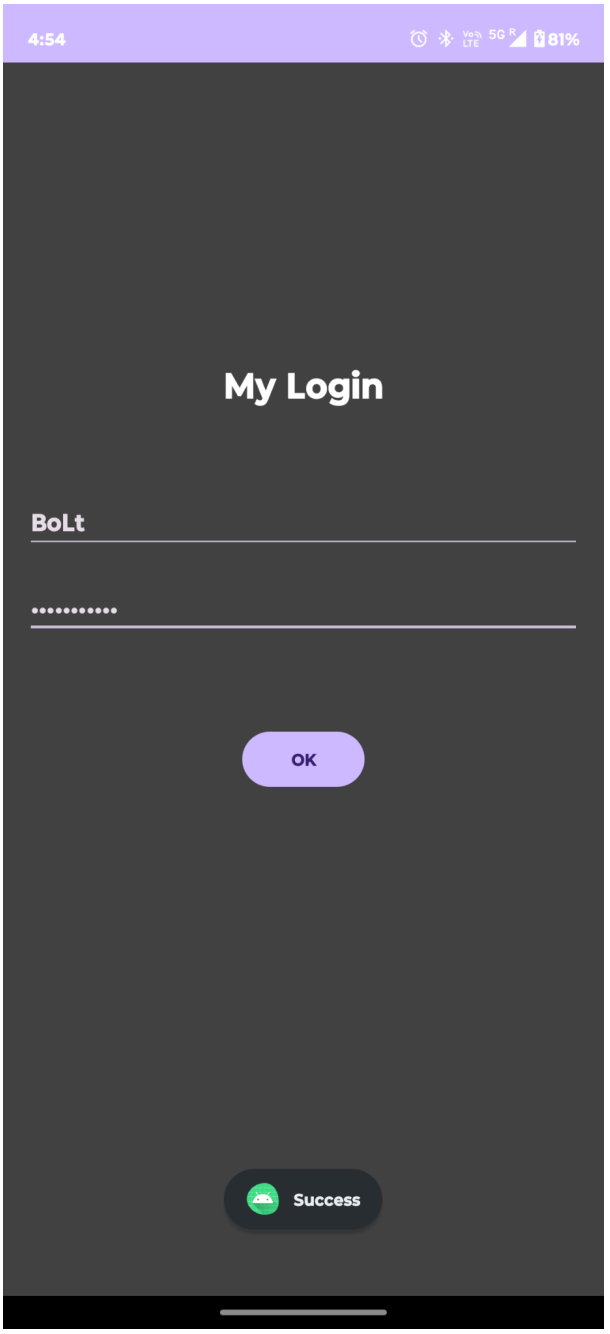
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center_horizontal"
    android:background="#444444"
    android:padding="16dp">

    <!-- Title for the Login Screen -->
    <TextView
        android:id="@+id/tv_title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="My Login"
        android:textSize="30sp"
        android:textColor="#FFFFFF"
        android:layout_marginTop="200dp"
        android:textStyle="bold"
        android:layout_marginBottom="40dp" />

    <EditText
        android:id="@+id/ed1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Username"
        android:layout_marginTop="20dp"
        android:layout_marginBottom="20dp"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/ed2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Password"
        android:layout_marginBottom="40dp"
        android:inputType="textPassword" />

    <Button
        android:id="@+id/bu"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="24dp"
        android:text="OK" />

</LinearLayout>
```

Main_Activity.java

```
package com.example.mylogin;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText ed1, ed2;
    Button bu;

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

        // Initialize views
        ed1 = findViewById(R.id.ed1);
        ed2 = findViewById(R.id.ed2);
        bu = findViewById(R.id.bu);

        // Set button click listener
        bu.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get input from EditTexts
                String username = ed1.getText().toString();
                String password = ed2.getText().toString();

                // Validate credentials
                if (username.equals("BoLt") && password.equals("asdfghjkl;'")) {
                    Toast.makeText(MainActivity.this, "Success", Toast.LENGTH_LONG).show();
                } else {
                    Toast.makeText(MainActivity.this, "Invalid User", Toast.LENGTH_LONG).show();
                }
            }
        });
    }
}
```

OUTPUT:


4:54
81%
My Login
BoLt
OK
Invalid User


4:54
81%
My Login
BoLt
OK
Success

PROGRAM:

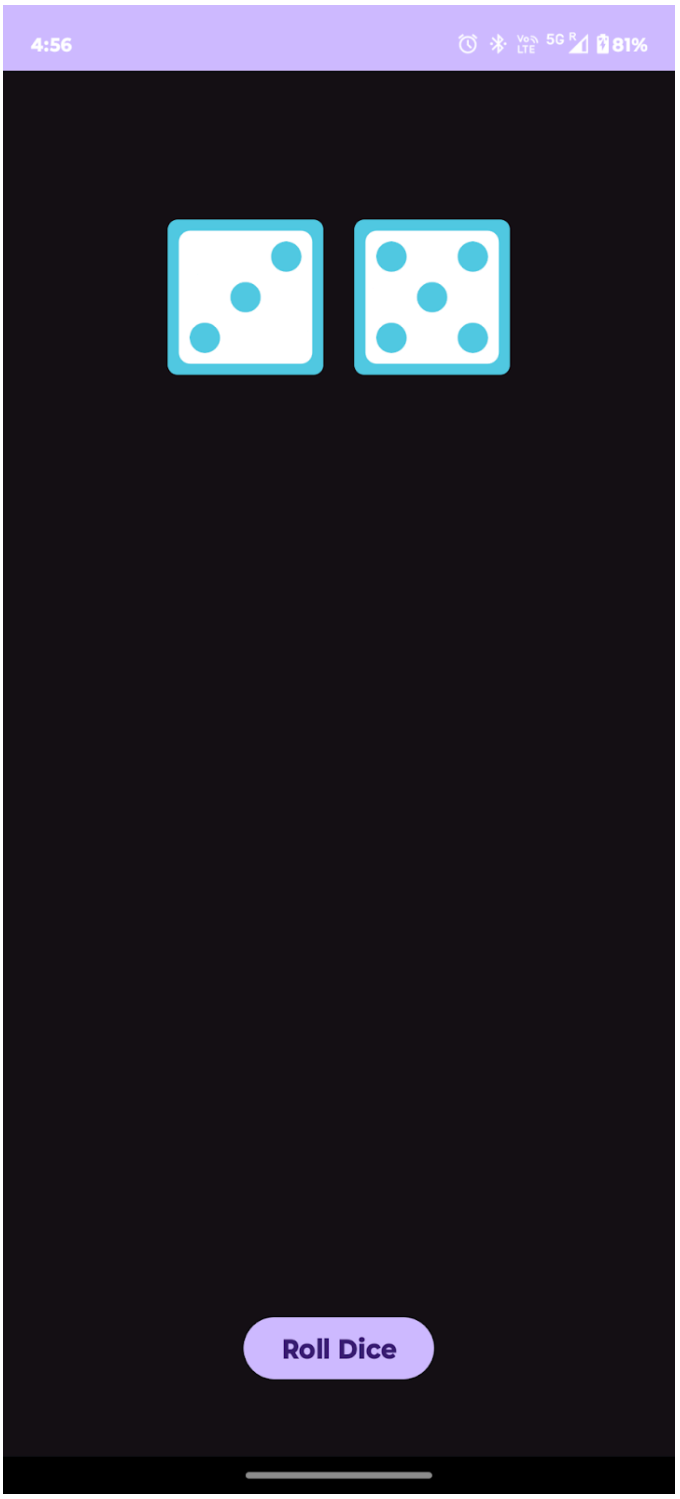
Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:orientation="horizontal"
        android:layout_centerHorizontal="true">

        <ImageView
            android:id="@+id/imageView1"
            android:layout_width="100dp"
            android:layout_height="100dp"
            android:layout_marginRight="20dp"
            android:src="@drawable/dice_1" />

        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="100dp"
            android:layout_height="100dp"
            android:src="@drawable/dice_1" />

    </LinearLayout>

    <Button
        android:id="@+id/rollDices"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Roll Dice"
        android:textSize="20sp"
        android:layout_alignParentBottom="true"
        android:layout_marginBottom="30dp"
        android:layout_centerHorizontal="true" />

</RelativeLayout>
```

Main_Activity.java

```
package com.example.dicer;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity; // Updated import for AppCompatActivity
import java.util.Random;

public class MainActivity extends AppCompatActivity {
    public static final Random RANDOM = new Random();
    private Button rollDices;
    private ImageView imageView1, imageView2;

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

        rollDices = findViewById(R.id.rollDices);
        imageView1 = findViewById(R.id.imageView1);
        imageView2 = findViewById(R.id.imageView2);

        rollDices.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int value1 = randomDiceValue();
                int value2 = randomDiceValue();

                int res1 = getResources().getIdentifier("dice_" + value1, "drawable", getPackageName());
                int res2 = getResources().getIdentifier("dice_" + value2, "drawable", getPackageName());

                imageView1.setImageResource(res1);
                imageView2.setImageResource(res2);
            }
        });
    }

    public static int randomDiceValue() {
        return RANDOM.nextInt(6) + 1; // Returns a random value between 1 and 6
    }
}
```

OUTPUT:



PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:background="#444444"
    android:gravity="center_horizontal">

    <!-- Display/Edit Text for showing current input -->
    <TextView
        android:id="@+id/tv_title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Calculator"
        android:textSize="50sp"
        android:textColor="#FFFFFF"
        android:layout_marginTop="50dp"
        android:textStyle="bold"
        android:layout_marginBottom="40dp" />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/tv"
        android:textSize="42sp"
        android:inputType="none"
        android:layout_marginTop="60dp"
        android:layout_marginBottom="190dp"
        android:gravity="end"
        android:textColor="#000000"
        android:background="#f0f0f0"/>

    <!-- First row of buttons -->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginBottom="20dp"
        android:weightSum="4">

        <Button
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:id="@+id/b9"
            android:layout_weight="1"
            android:text="9"
            android:textColor="#ffffff"
            android:textSize="24sp" />
```

```
    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b8"
        android:layout_weight="1"
        android:text="8"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b7"
        android:layout_weight="1"
        android:text="7"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bpl"
        android:layout_weight="1"
        android:text="+"
        android:textColor="#ffffff"
        android:textSize="24sp" />
</LinearLayout>

<!-- Second row of buttons -->
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginBottom="20dp"
    android:weightSum="4">

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b6"
        android:layout_weight="1"
        android:text="6"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b5"
        android:layout_weight="1"
        android:text="5"
        android:textColor="#ffffff"
```

```
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b4"
        android:layout_weight="1"
        android:text="4"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bmin"
        android:layout_weight="1"
        android:text="-"
        android:textColor="#ffffff"
        android:textSize="24sp" />
</LinearLayout>

<!-- Third row of buttons -->
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginBottom="20dp"
    android:weightSum="4">

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b3"
        android:layout_weight="1"
        android:text="3"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b2"
        android:layout_weight="1"
        android:text="2"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b1"
        android:layout_weight="1"
```

```
        android:text="1"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bmul"
        android:layout_weight="1"
        android:text="*"
        android:textColor="#ffffff"
        android:textSize="24sp" />
</LinearLayout>

<!-- Fourth row of buttons -->
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginBottom="20dp"
    android:weightSum="5">

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bd"
        android:layout_weight="1"
        android:text="."
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/b0"
        android:layout_weight="1"
        android:text="0"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bcl"
        android:layout_weight="1"
        android:text="Cl"
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
```

```
        android:id="@+id/beq"
        android:layout_weight="1"
        android:text="="
        android:textColor="#ffffff"
        android:textSize="24sp" />

    <Button
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:id="@+id/bdiv"
        android:layout_weight="1"
        android:text="/"
        android:textColor="#ffffff"
        android:textSize="24sp" />
  </LinearLayout>

</LinearLayout>
```

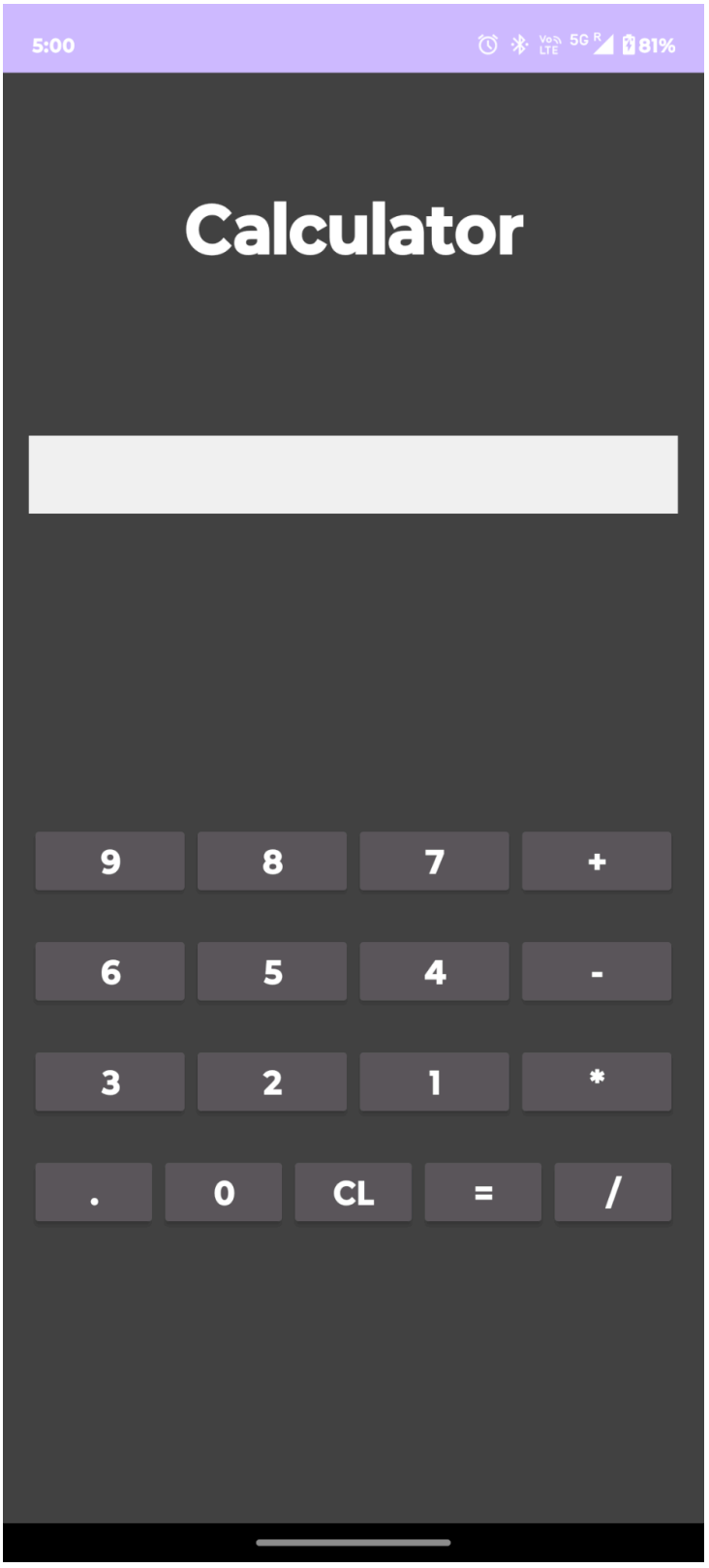
Main_Activity.java

```
package com.example.calculator;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends Activity implements View.OnClickListener {
  Button nine, eig, sev, six, fiv, four, thr, two, one, zero, dot, plus, mins, div, mul, eq, cl;
  EditText et;
  String currentInput = "0";  // Current input string for numbers
  int result = 0;  // Store the result of the calculation
  char lastOperator = ' ';  // Store the last operator used
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    nine = findViewById(R.id.b9);
    eig = findViewById(R.id.b8);
    sev = findViewById(R.id.b7);
    six = findViewById(R.id.b6);
    fiv = findViewById(R.id.b5);
    four = findViewById(R.id.b4);
    thr = findViewById(R.id.b3);
    two = findViewById(R.id.b2);
    one = findViewById(R.id.b1);
    zero = findViewById(R.id.b0);
    dot = findViewById(R.id.bd);
    plus = findViewById(R.id.bpl);
    mins = findViewById(R.id.bmin);
    div = findViewById(R.id.bdiv);
```

```
    mul = findViewById(R.id.bmul);
    eq = findViewById(R.id.beq);
    cl = findViewById(R.id.bcl);
    et = findViewById(R.id.tv);

    // Set OnClickListener for Buttons
    nine.setOnClickListener(this);
    eig.setOnClickListener(this);
    sev.setOnClickListener(this);
    six.setOnClickListener(this);
    fiv.setOnClickListener(this);
    four.setOnClickListener(this);
    thr.setOnClickListener(this);
    two.setOnClickListener(this);
    one.setOnClickListener(this);
    zero.setOnClickListener(this);
    dot.setOnClickListener(this);
    plus.setOnClickListener(this);
    mins.setOnClickListener(this);
    div.setOnClickListener(this);
    mul.setOnClickListener(this);
    eq.setOnClickListener(this);
    cl.setOnClickListener(this);
}
@Override
public void onClick(View v) {
    int id = v.getId();
    if (id == R.id.b0 || id == R.id.b1 || id == R.id.b2 || id == R.id.b3 ||
            id == R.id.b4 || id == R.id.b5 || id == R.id.b6 || id == R.id.b7 ||
            id == R.id.b8 || id == R.id.b9) {
        String inputDigit = ((Button) v).getText().toString();
        if (currentInput.equals("0")) {
            currentInput = inputDigit;  // Start with the clicked number
        } else {
            currentInput += inputDigit;  // Append further digits
        }
        et.setText(currentInput);  // Update the display

        if (lastOperator == '=') {
            result = 0;  // Reset result if "=" was pressed
            lastOperator = ' ';  // Reset operator
        }
    } else if (id == R.id.bpl) {
        compute();  // Perform calculation for addition
        lastOperator = '+';  // Update last operator
    } else if (id == R.id.bmin) {
        compute();  // Perform calculation for subtraction
        lastOperator = '-';  // Update last operator
    } else if (id == R.id.bdiv) {
        compute();  // Perform calculation for division
        lastOperator = '/';  // Update last operator
    } else if (id == R.id.bmul) {
```

```
            compute();  // Perform calculation for multiplication
            lastOperator = '*';  // Update last operator
        } else if (id == R.id.beq) {
            compute();  // Perform final calculation
            lastOperator = '=';  // Update last operator
        } else if (id == R.id.bcl) {
            result = 0;  // Reset result to zero
            currentInput = "0";  // Reset input
            lastOperator = ' ';  // Reset operator
            et.setText("0");  // Clear the display
        }
    }
    private void compute() {
        int inputNumber = Integer.parseInt(currentInput);  // Convert current input to integer
        currentInput = "0";  // Reset current input after processing
        switch (lastOperator) {
            case ' ':
                result = inputNumber;  // If no operator, set result to current input
                break;
            case '+':
                result += inputNumber;  // Perform addition
                break;
            case '-':
                result -= inputNumber;  // Perform subtraction
                break;
            case '*':
                result *= inputNumber;  // Perform multiplication
                break;
            case '/':
                if (inputNumber != 0) {
                    result /= inputNumber;  // Perform division, check for divide by zero
                } else {
                    et.setText("Error");  // Display error if division by zero
                    return;
                }
                break;
            case '=':
                break;  // Do nothing on '=' as result is already computed
        }
        et.setText(String.valueOf(result));  // Update the display with the result
    }
}
```

OUTPUT:



PROGRAM:

Activity_main.xml

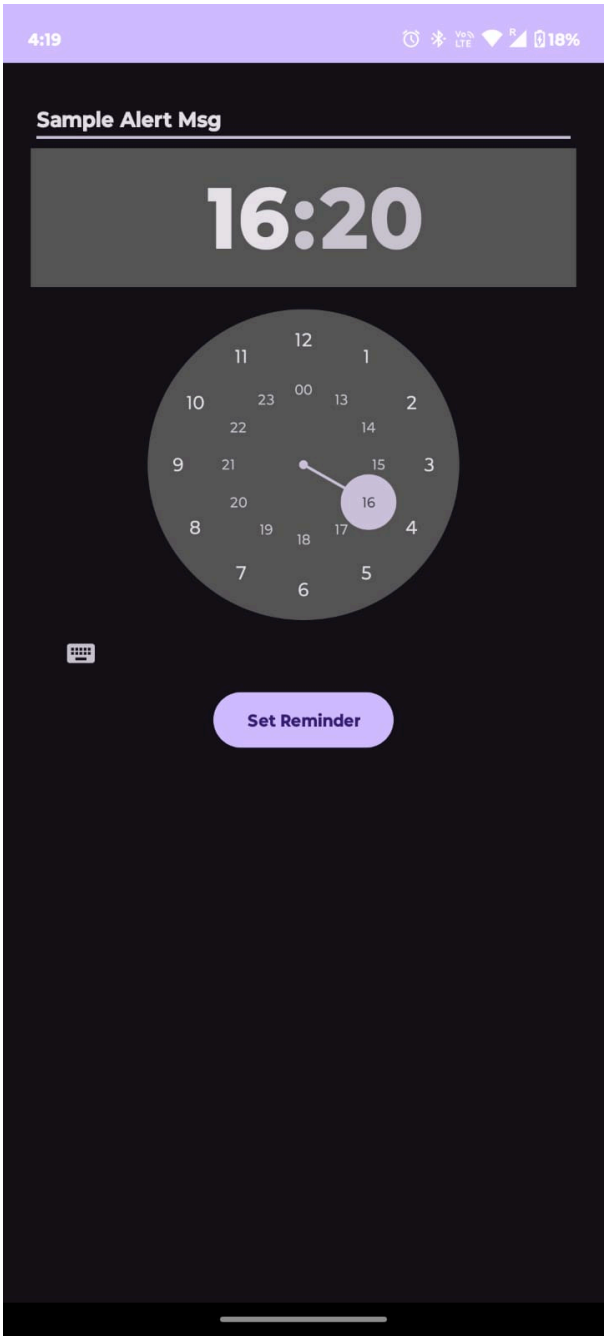
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:padding="20dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <EditText
        android:id="@+id/messageEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Message" />

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <Button
        android:id="@+id/setButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Set Reminder"
        android:layout_gravity="center"/>
</LinearLayout>
```

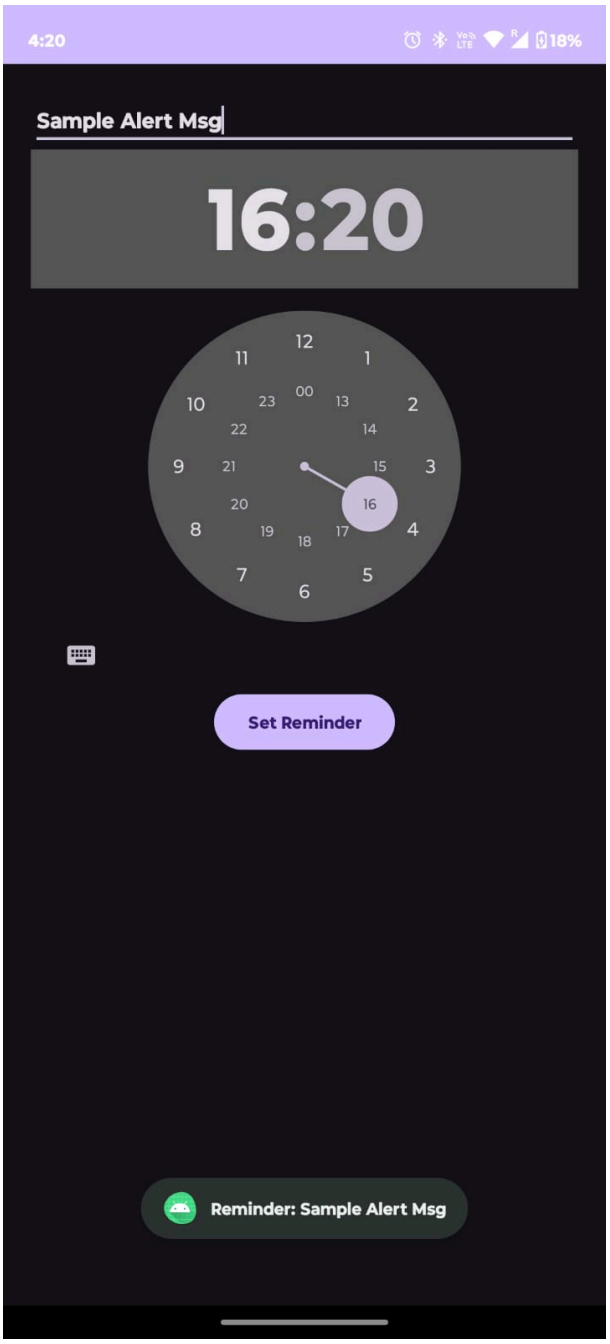
Main_Activity.java

```
package com.example.reminderapp;

import android.os.Bundle;
import android.os.Handler;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TimePicker;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

    EditText edtMessage;
    TimePicker timePicker;
    Button btnSet;
    Handler handler = new Handler();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);

        edtMessage = findViewById(R.id.messageEditText);
        timePicker = findViewById(R.id.timePicker);
        btnSet = findViewById(R.id.setButton);

        timePicker.setIs24HourView(true);

        btnSet.setOnClickListener(v -> {
            String message = edtMessage.getText().toString();

            Calendar now = Calendar.getInstance();
            Calendar target = Calendar.getInstance();
            target.set(Calendar.HOUR_OF_DAY, timePicker.getHour());
            target.set(Calendar.MINUTE, timePicker.getMinute());
            target.set(Calendar.SECOND, 0);

            if (target.before(now)) {
                target.add(Calendar.DAY_OF_MONTH, 1); // Next day if time already passed
            }

            long delay = target.getTimeInMillis() - now.getTimeInMillis();

            Toast.makeText(this, "Reminder set!", Toast.LENGTH_SHORT).show();

            handler.postDelayed(() -> {
                Toast.makeText(this, "Reminder: " + message, Toast.LENGTH_LONG).show();
            }, delay);
        });
    }
}
```

OUTPUT:


4:19
18%
Sample Alert Msg
16:20
Set Reminder


4:20
18%
Sample Alert Msg
16:20
Set Reminder
Reminder: Sample Alert Msg

PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:background="#505050">

   <RelativeLayout
      android:id="@+id/firstlayout"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:gravity="center"
      android:layout_marginTop="80dp">

      <TextView
         android:id="@+id/display"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="Button will appear after 7 seconds"
         android:textSize="19sp" />
   </RelativeLayout>

   <RelativeLayout
      android:id="@+id/secondlayout"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@+id/firstlayout"
      android:gravity="center">

      <TextView
         android:id="@+id/timer"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:gravity="center_horizontal"
         android:text="7"
         android:layout_marginTop="80dp"
         android:textSize="36sp"/>
   </RelativeLayout>

   <RelativeLayout
      android:id="@+id/thirdlayout"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@+id/secondlayout"
      android:gravity="center">

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

```
        android:visibility="invisible"
        android:layout_marginTop="100dp"/>
    </RelativeLayout>

</RelativeLayout>
```

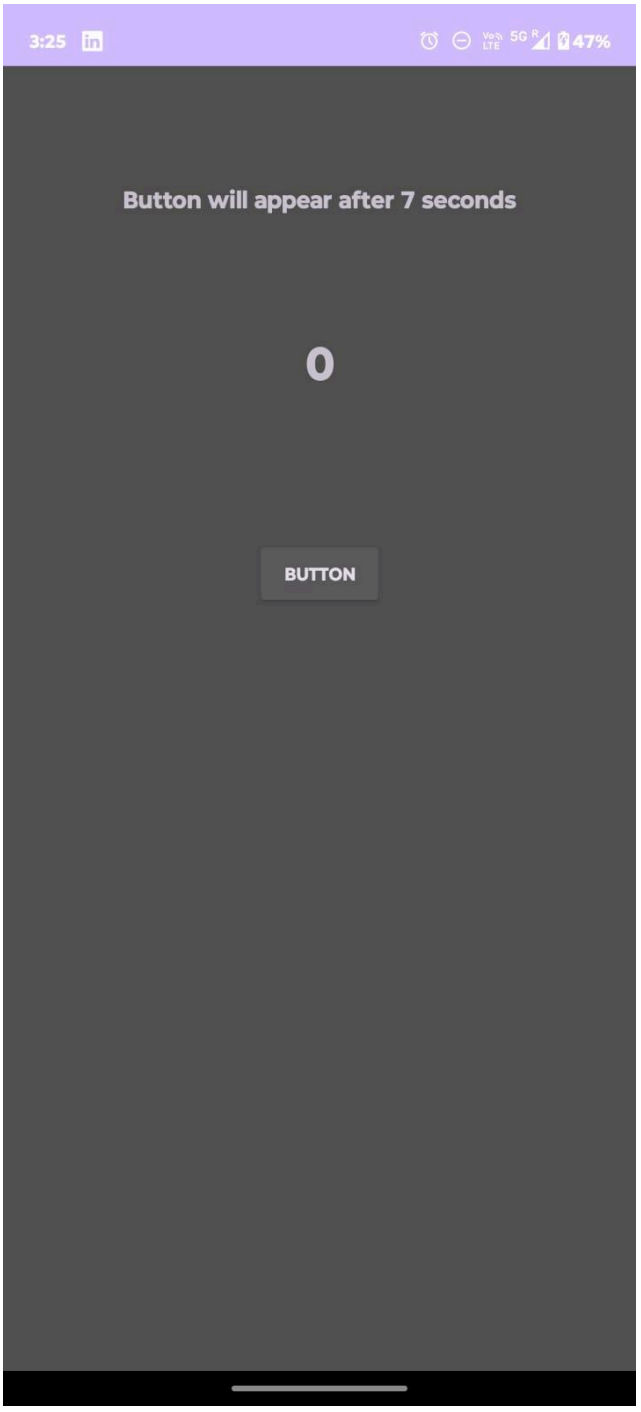
Main_Activity.java

```
package com.example.multithread;

import android.annotation.SuppressLint;
import android.app.Activity;
import android.os.Bundle;
import android.os.Handler;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends Activity {

    Handler hand = new Handler();
    Button clickme;
    TextView timer;

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

        timer = (TextView) findViewById(R.id.timer);
        clickme = (Button) findViewById(R.id.clickme);

        // Initial time in seconds (you can set your desired starting time here)
        timer.setText("7");

        // Start the countdown
        hand.postDelayed(run, 1000);
    }

    Runnable run = new Runnable() {
        @Override
        public void run() {
            updateTime();
        }
    };

    public void updateTime() {
        // Get the current timer value, subtract 1 and update the text
        int currentTime = Integer.parseInt(timer.getText().toString());
        currentTime -= 1;
        timer.setText(String.valueOf(currentTime));
```

```
        // If time reaches 0, make the button visible
        if (currentTime == 0) {
            clickme.setVisibility(Button.VISIBLE);
        } else {
            // Continue the countdown
            hand.postDelayed(run, 1000);
        }
    }
}
```

OUTPUT:


3:26
47%
Button will appear after 7 seconds
6


3:25
47%
Button will appear after 7 seconds
0
BUTTON

PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#454545"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="42dp"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <TextView
        android:id="@+id/tv_title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Sign in"
        android:textSize="30sp"
        android:layout_centerHorizontal="true"
        android:textColor="#FFFFFF"
        android:layout_marginTop="150dp"
        android:textStyle="bold"
        android:layout_marginBottom="40dp" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignTop="@+id/textView1"
        android:layout_marginTop="190dp"
        android:textColor="#FFFFFF"
        android:layout_centerHorizontal="true"
        android:text="User Name"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView1"
        android:textColor="#FFFFFF"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="210dp"
        android:ems="10">
```

```
        <requestFocus />
    </EditText>

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="15dp"
        android:textColor="#FFFFFF"
        android:layout_centerVertical="true"
        android:text="Password"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView3"
        android:textColor="#FFFFFF"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:inputType="textPassword" />

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/editText2"
        android:layout_alignRight="@+id/textView2"
        android:layout_marginTop="40dp"
        android:text="Login" />

</RelativeLayout>
```

Second.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:background="#454545"
    android:layout_height="match_parent">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="106dp"
        android:layout_y="141dp"
        android:text="Succesfully Login"
        android:textColor="#FFFFFF"
        android:textSize="25dp" />
</AbsoluteLayout>
```

Third.xml

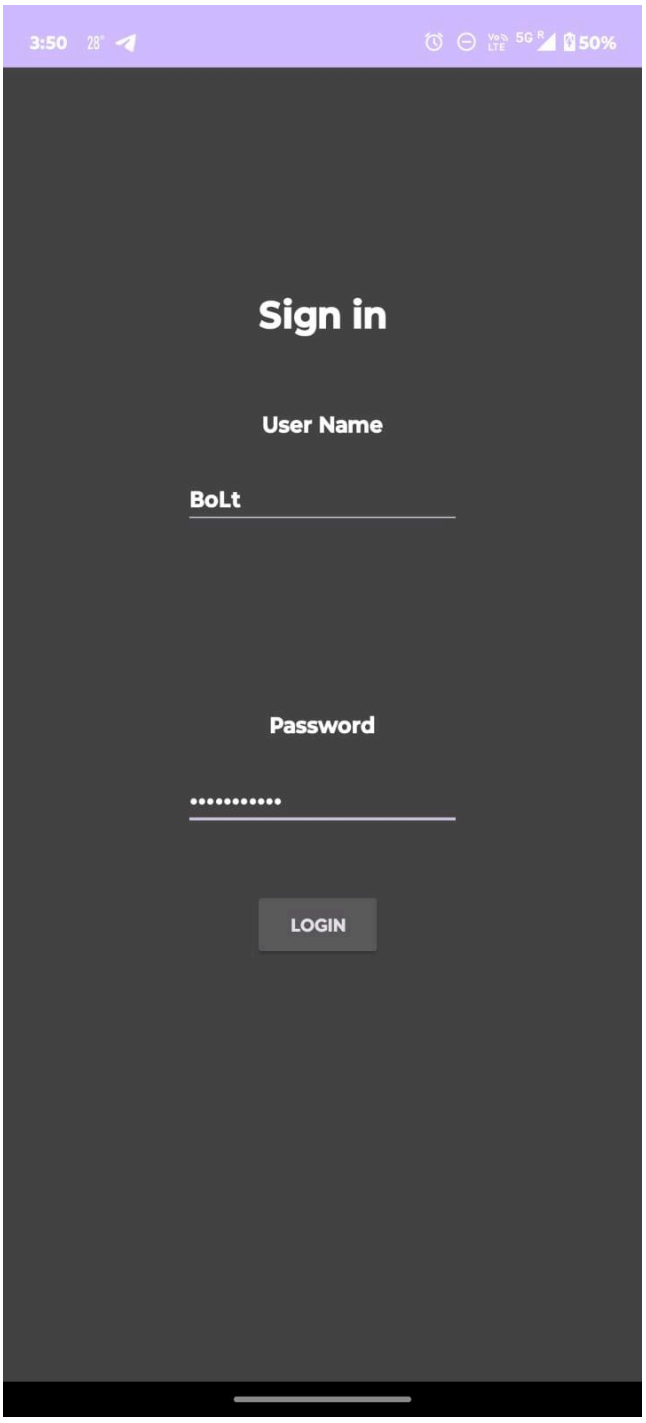
```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:background="#454545"
    android:layout_height="match_parent">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="146dp"
        android:layout_y="141dp"
        android:text="Login Failed"
        android:textColor="#FFFFFF"
        android:textSize="25dp" />
</AbsoluteLayout>
```

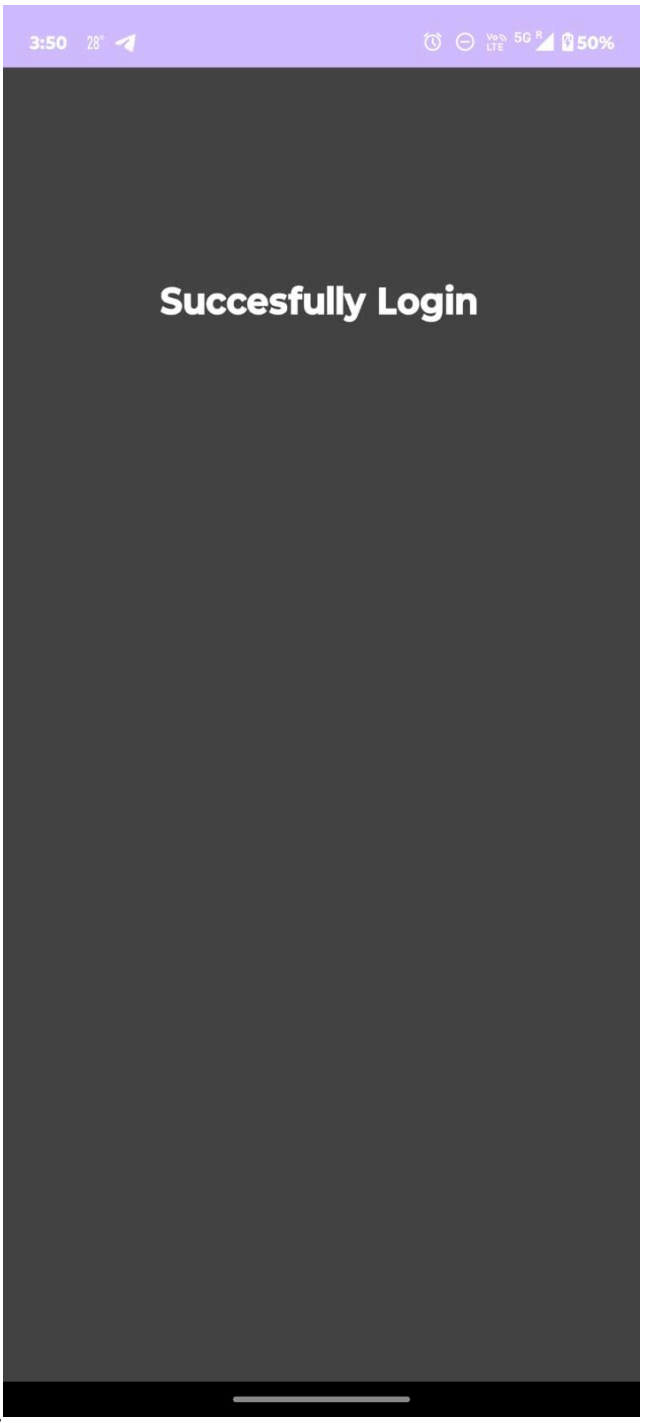
Main_Activity.java

```
package com.example.signin;

import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity {

    EditText A, B;
    Button C;
    String E, F;

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

        // Initialize EditText and Button
        A = (EditText) findViewById(R.id.editText1);
        B = (EditText) findViewById(R.id.editText2);
        C = (Button) findViewById(R.id.button1);

        // Set onClickListener for login button
        C.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get the entered username and password
                E = A.getText().toString();
```

```
            F = B.getText().toString();

            // Check if the credentials are correct
            if (E.equals("BoLt") && F.equals("asdfghjkl;'")) {
                // Switch to successful login screen
                setContentView(R.layout.second);
            } else {
                // Switch to failed login screen
                setContentView(R.layout.third);
            }
        }
    });
}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    // Inflate the menu; this adds items to the action bar if it is present
    getMenuInflater().inflate(R.menu.activity_main, menu);
    return true;
}
}
```

OUTPUT:


3:50
50%
Sign in
User Name
BoLt
Password
LOGIN


3:50
50%
Succesfully Login

PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#858585">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:padding="20dp"
        android:layout_marginTop="20dp">
        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="SQLite Operation"
            android:textStyle="bold"
            android:textSize="40dp"
            android:gravity="center"/>
        <EditText
            android:id="@+id/editName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Name"
            android:layout_marginTop="50dp"
            android:textStyle="bold"
            android:inputType="textPersonName" />
        <EditText
            android:id="@+id/editPass"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Password"
            android:textStyle="bold"
            android:inputType="textPassword" />
        <Button
            android:id="@+id/btnAdd"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Add User"
            android:onClick="addUser" />
        <Button
            android:id="@+id/btnView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="View Data"
            android:onClick="viewData" />
        <EditText
            android:id="@+id/updateOld"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:hint="Current Name" />
    <EditText
        android:id="@+id/updateNew"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="New Name" />
    <Button
        android:id="@+id/btnUpdate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Update Name"
        android:onClick="updateName" />
    <EditText
        android:id="@+id/deleteName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="Name to Delete" />
    <Button
        android:id="@+id/btnDelete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Delete User"
        android:onClick="deleteUser" />
  </LinearLayout>
</ScrollView>
```

Main_Activity.java

```
package com.example.sqliteoperations;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
  EditText editName, editPass, updateOld, updateNew, deleteName;
  MyDbAdapter helper;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    editName = findViewById(R.id.editName);
    editPass = findViewById(R.id.editPass);
    updateOld = findViewById(R.id.updateOld);
    updateNew = findViewById(R.id.updateNew);
    deleteName = findViewById(R.id.deleteName);
    helper = new MyDbAdapter(this);
  }
```

```
public void addUser(View view) {
    String name = editName.getText().toString();
    String pass = editPass.getText().toString();
    if (name.isEmpty() || pass.isEmpty()) {
        Message.message(this, "Please enter both name and password");
    } else {
        long id = helper.insertData(name, pass);
        if (id <= 0) {
            Message.message(this, "Insertion Unsuccessful");
        } else {
            Message.message(this, "User Added Successfully");
            editName.setText("");
            editPass.setText("");
        }
    }
}
public void viewData(View view) {
    String data = helper.getData();
    if (data.isEmpty()) {
        Message.message(this, "No Data Found");
    } else {
        showLongToast(data);
    }
}
private void showLongToast(String data) {
    int maxToastLength = 3500;
    int start = 0;
    while (start < data.length()) {
        int end = Math.min(start + maxToastLength, data.length());
        String part = data.substring(start, end);
        Toast.makeText(this, part, Toast.LENGTH_LONG).show();
        start = end;
    }
}
public void updateName(View view) {
    String oldName = updateOld.getText().toString();
    String newName = updateNew.getText().toString();
    if (oldName.isEmpty() || newName.isEmpty()) {
        Message.message(this, "Enter both names");
    } else {
        int result = helper.updateName(oldName, newName);
        if (result > 0) {
            Message.message(this, "Updated Successfully");
            updateOld.setText("");
            updateNew.setText("");
        } else {
            Message.message(this, "Update Failed");
        }
    }
}
```

```
    public void deleteUser(View view) {
        String name = deleteName.getText().toString();
        if (name.isEmpty()) {
            Message.message(this, "Enter name to delete");
        } else {
            int result = helper.delete(name);
            if (result > 0) {
                Message.message(this, "User Deleted");
                deleteName.setText("");
            } else {
                Message.message(this, "Deletion Failed");
            }
        }
    }
}
```

MyDbAdapter.java

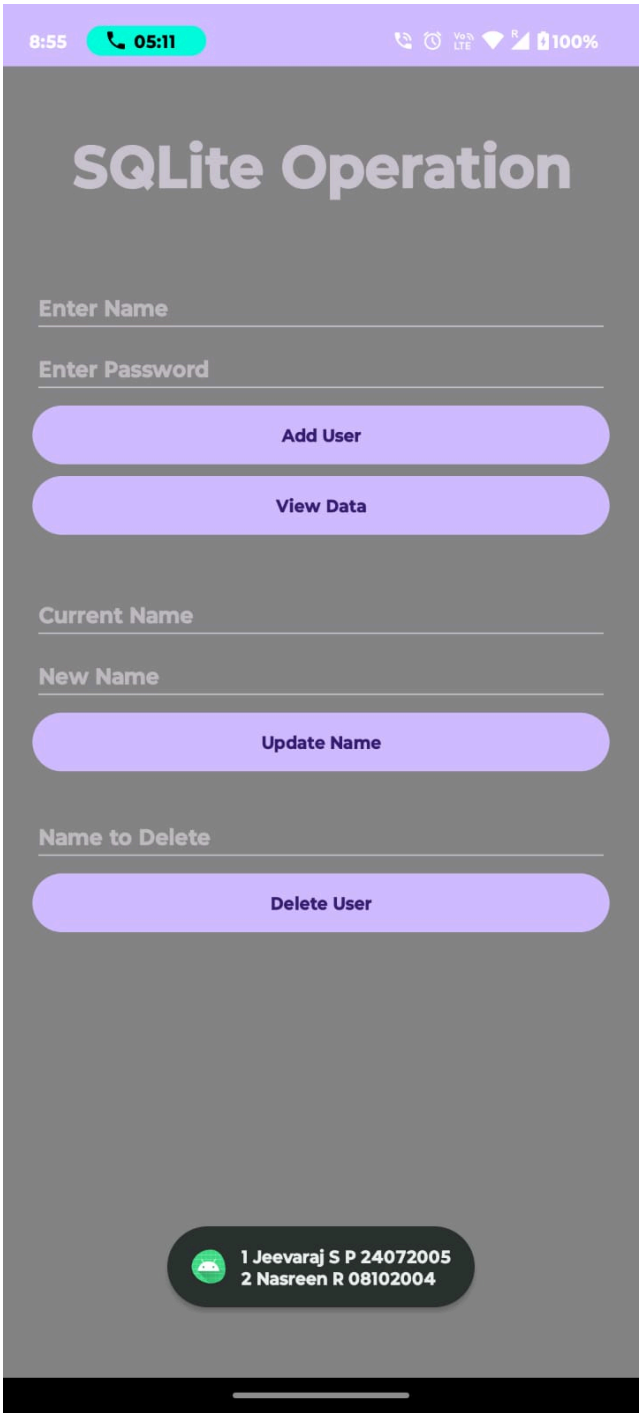
```
package com.example.sqliteoperations;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class MyDbAdapter {
    MyDbHelper myHelper;
    public MyDbAdapter(Context context) {
        myHelper = new MyDbHelper(context);
    }
    public long insertData(String name, String pass) {
        SQLiteDatabase db = myHelper.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("Name", name);
        contentValues.put("Password", pass);
        return db.insert("Users", null, contentValues);
    }
    public String getData() {
        SQLiteDatabase db = myHelper.getWritableDatabase();
        Cursor cursor = db.query("Users", null, null, null, null, null, null);
        StringBuilder buffer = new StringBuilder();
        while (cursor.moveToNext()) {
            buffer.append(cursor.getInt(0)).append(" ")
                    .append(cursor.getString(1)).append(" ")
                    .append(cursor.getString(2)).append("\n");
        }
        return buffer.toString();
    }

    public int delete(String name) {
        SQLiteDatabase db = myHelper.getWritableDatabase();
        return db.delete("Users", "Name=?", new String[]{name});
    }
    public int updateName(String oldName, String newName) {
```

```
        SQLiteDatabase db = myHelper.getWritableDatabase();
        ContentValues values = new ContentValues();
        values.put("Name", newName);
        return db.update("Users", values, "Name=?", new String[]{oldName});
    }
    static class MyDbHelper extends SQLiteOpenHelper {
        private static final String DB_NAME = "UserDB";
        private static final int DB_VERSION = 1;
        public MyDbHelper(Context context) {
            super(context, DB_NAME, null, DB_VERSION);
        }
        @Override
        public void onCreate(SQLiteDatabase db) {
            db.execSQL("CREATE TABLE Users (_id INTEGER PRIMARY KEY AUTOINCREMENT, Name TEXT,
Password TEXT);");
        }
        @Override
        public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
            db.execSQL("DROP TABLE IF EXISTS Users");
            onCreate(db);
        }
    }
}
```

Message.java

```
package com.example.sqliteoperations;
import android.content.Context;
import android.widget.Toast;
public class Message {
    public static void message(Context context, String message) {
        Toast.makeText(context, message, Toast.LENGTH_LONG).show();
    }
}
```

OUTPUT:


8:55
05:11
100%
SQLite Operation
Enter Name
Enter Password
Add User
View Data
Current Name
New Name
Update Name
Name to Delete
Delete User
1 Jeevaraj S P 24072005
2 Nasreen R 08102004

PROGRAM:

Activity_main.xml

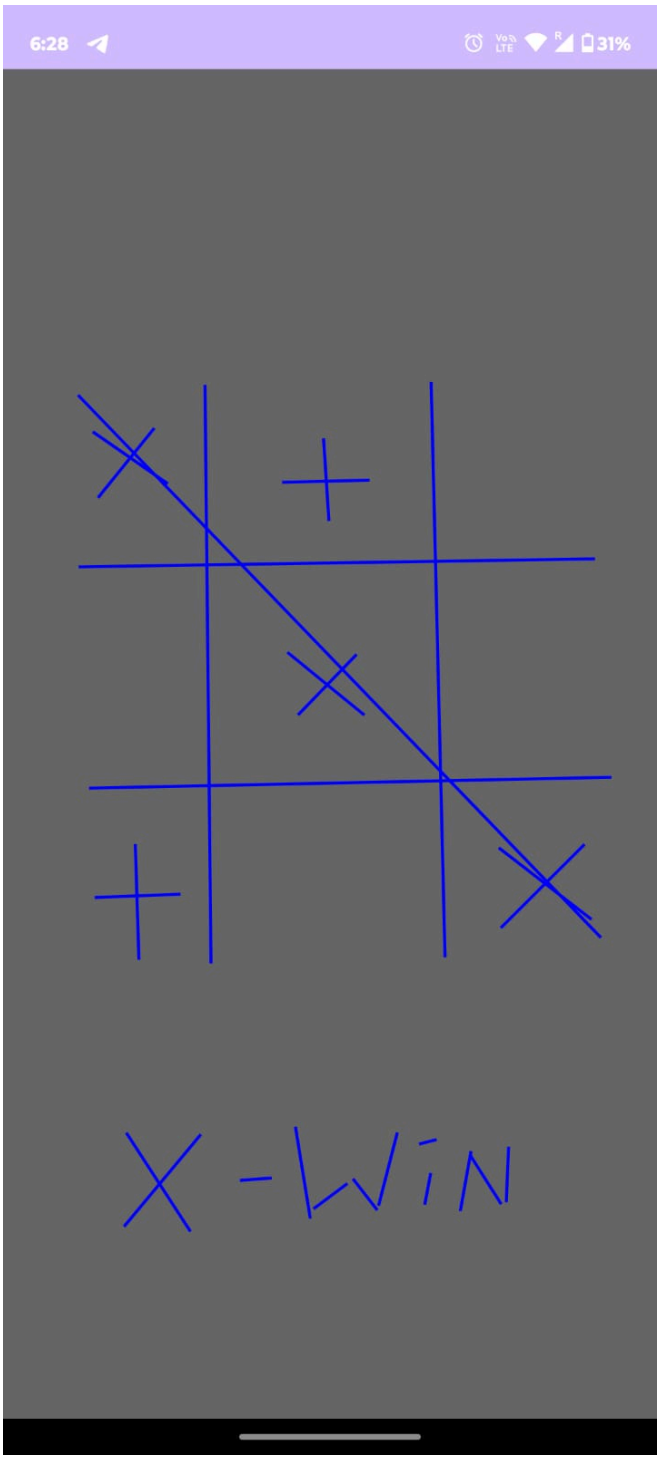
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#FFFFFF" />

</RelativeLayout>
```

Main_Activity.java

```
package com.example.graphical_primitives;

import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.view.Display;
import android.view.MotionEvent;
import android.view.View;
import android.widget.ImageView;

public class MainActivity extends Activity implements View.OnTouchListener {
    ImageView imageView;
    Bitmap bitmap;
    Canvas canvas;
    Paint paint;
    float downx = 0, downy = 0, upx = 0, upy = 0;

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

        imageView = findViewById(R.id.imageView1);

        Display currentDisplay = getWindowManager().getDefaultDisplay();
        float dw = currentDisplay.getWidth();
        float dh = currentDisplay.getHeight();

        bitmap = Bitmap.createBitmap((int) dw, (int) dh, Bitmap.Config.ARGB_8888);
        canvas = new Canvas(bitmap);
```

```
        paint = new Paint();
        paint.setColor(Color.MAGENTA);
        paint.setStrokeWidth(5); // Optional: Set stroke width for the lines

        imageView.setImageBitmap(bitmap);

        imageView.setOnTouchListener(this);
    }

    @Override
    public boolean onTouch(View v, MotionEvent event) {
        int action = event.getAction();
        switch (action) {
            case MotionEvent.ACTION_DOWN:
                downx = event.getX();
                downy = event.getY();
                break;

            case MotionEvent.ACTION_MOVE:
                break;

            case MotionEvent.ACTION_UP:
                upx = event.getX();
                upy = event.getY();

                canvas.drawLine(downx, downy, upx, upy, paint);
                imageView.invalidate(); // Refresh the ImageView to display the line
                break;

            case MotionEvent.ACTION_CANCEL:
                break;

            default:
                break;
        }
        return true;
    }
}
```

OUTPUT:



PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="16dp">
    <TextView
        android:id="@+id/txtSname"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Now Playing:"
        android:textAppearance="?android:attr/textAppearanceMedium"
        android:layout_marginBottom="16dp" />
    <ImageView
        android:id="@+id/imgLogo"
        android:layout_width="300dp"
        android:layout_height="300dp"
        android:src="@drawable/img"
        android:scaleType="centerCrop"
        android:layout_marginBottom="16dp" />
    <SeekBar
        android:id="@+id/seek_Bar"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <TextView
            android:id="@+id/StartTimebtn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="0 min 0 sec" />
        <TextView
            android:id="@+id/Song_t_txtview"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="210dp"
            android:text="0 min 0 sec" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginTop="20dp"
        android:gravity="center">
```

```
        <ImageButton
            android:id="@+id/Backwardbtn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@android:drawable/ic_media_rew"
            android:background="@null"
            android:layout_margin="8dp" />
        <ImageButton
            android:id="@+id/Playbtn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@android:drawable/ic_media_play"
            android:background="@null"
            android:layout_margin="8dp" />
        <ImageButton
            android:id="@+id/Pausebtn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@android:drawable/ic_media_pause"
            android:background="@null"
            android:layout_margin="8dp" />
        <ImageButton
            android:id="@+id/Forwardbtn"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:src="@android:drawable/ic_media_ff"
            android:background="@null"
            android:layout_margin="8dp" />
    </LinearLayout>
</LinearLayout>
```

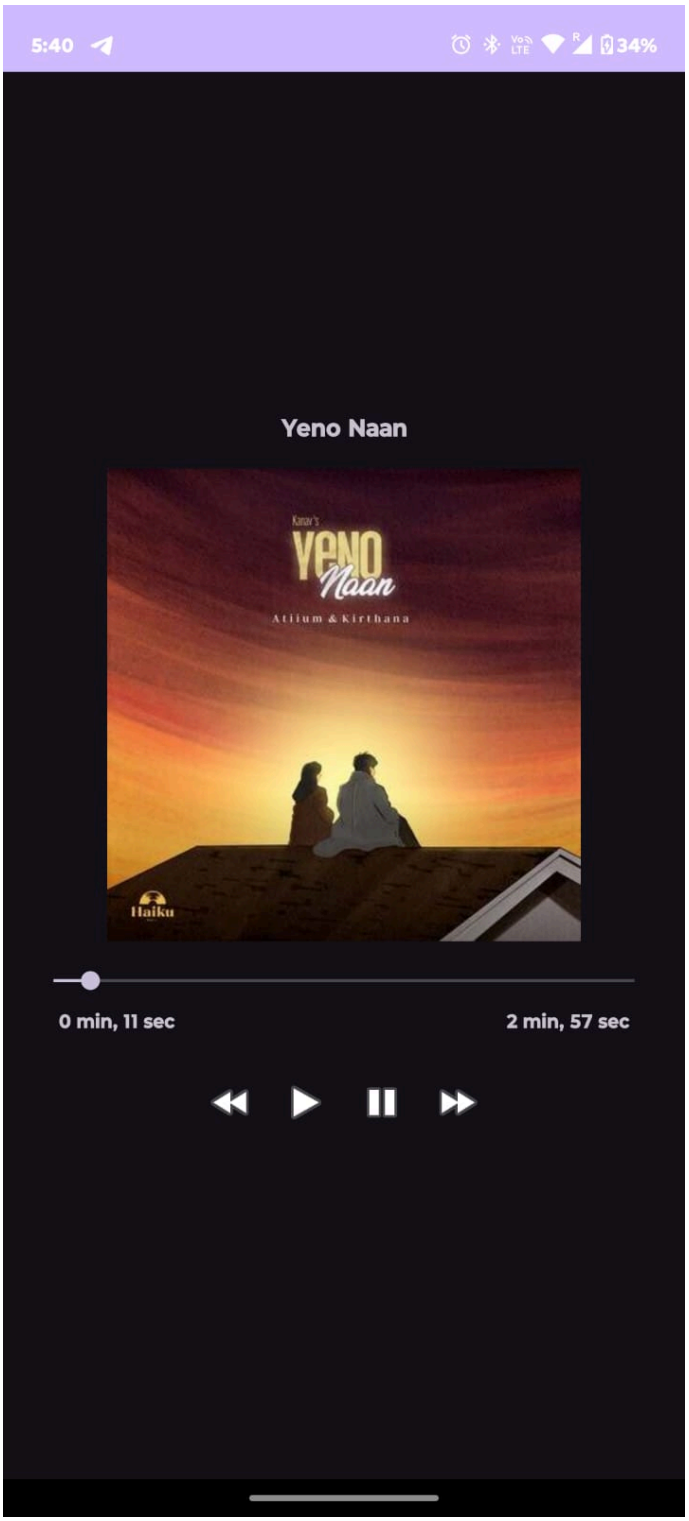
Main_Activity.java

```
package com.example.mediaplayer;
import android.media.MediaPlayer;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.ImageButton;
import android.widget.SeekBar;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.util.concurrent.TimeUnit;
public class MainActivity extends AppCompatActivity {
    private ImageButton forward, backward, pause, play;
    private TextView songName, startTimeText, endTimeText;
    private SeekBar seekBar;
    private MediaPlayer mediaPlayer;
    private Handler handler = new Handler();
```

```
private static int startTime = 0;
private static int endTime = 0;
private static final int forwardTime = 5000;
private static final int backwardTime = 5000;

private Runnable updateSongTime = new Runnable() {
    @Override
    public void run() {
        startTime = mediaPlayer.getCurrentPosition();
        startTimeText.setText(String.format("%d min, %d sec",
                TimeUnit.MILLISECONDS.toMinutes(startTime),
                TimeUnit.MILLISECONDS.toSeconds(startTime) -
                        TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(startTime))
        ));
        seekBar.setProgress(startTime);
        handler.postDelayed(this, 100);
    }
};

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

    backward = findViewById(R.id.Backwardbtn);
    forward = findViewById(R.id.Forwardbtn);
    play = findViewById(R.id.Playbtn);
    pause = findViewById(R.id.Pausebtn);
    songName = findViewById(R.id.txtSname);
    startTimeText = findViewById(R.id.StartTimebtn);
    endTimeText = findViewById(R.id.Song_t_txtview);
    seekBar = findViewById(R.id.seek_Bar);
    songName.setText("Yeno Naan");
    mediaPlayer = MediaPlayer.create(this, R.raw.yeno_naan);
    seekBar.setClickable(false);
    pause.setEnabled(false);
    play.setOnClickListener(v -> {
        Toast.makeText(MainActivity.this, "Song Started...", Toast.LENGTH_SHORT).show();
        mediaPlayer.start();
        endTime = mediaPlayer.getDuration();
        startTime = mediaPlayer.getCurrentPosition();
        seekBar.setMax(endTime);
        endTimeText.setText(String.format("%d min, %d sec",
                TimeUnit.MILLISECONDS.toMinutes(endTime),
                TimeUnit.MILLISECONDS.toSeconds(endTime) -
                        TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(endTime))
        ));
        startTimeText.setText(String.format("%d min, %d sec",
                TimeUnit.MILLISECONDS.toMinutes(startTime),
                TimeUnit.MILLISECONDS.toSeconds(startTime) -
                        TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(startTime))
        ));
```

```
            seekBar.setProgress(startTime);
            handler.postDelayed(updateSongTime, 100);
            pause.setEnabled(true);
            play.setEnabled(false);
        });
        pause.setOnClickListener(v -> {
            mediaPlayer.pause();
            pause.setEnabled(false);
            play.setEnabled(true);
            Toast.makeText(MainActivity.this, "Song Paused...", Toast.LENGTH_SHORT).show();
        });
        forward.setOnClickListener(v -> {
            if ((startTime + forwardTime) <= endTime) {
                startTime += forwardTime;
                mediaPlayer.seekTo(startTime);
                Toast.makeText(MainActivity.this, "Forwarded 5 seconds", Toast.LENGTH_SHORT).show();
            } else {
                Toast.makeText(MainActivity.this, "Cannot forward further", Toast.LENGTH_SHORT).show();
            }
        });
        backward.setOnClickListener(v -> {
            if ((startTime - backwardTime) > 0) {
                startTime -= backwardTime;
                mediaPlayer.seekTo(startTime);
                Toast.makeText(MainActivity.this, "Rewinded 5 seconds", Toast.LENGTH_SHORT).show();
            } else {
                Toast.makeText(MainActivity.this, "Cannot rewind further", Toast.LENGTH_SHORT).show();
            }
        });
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        if (mediaPlayer != null) {
            if (mediaPlayer.isPlaying()) {
                mediaPlayer.stop();
            }
            mediaPlayer.release();
            mediaPlayer = null;
        }
        handler.removeCallbacks(updateSongTime);
    }
}
```

OUTPUT:


5:40
34%
Yeno Naan
Kanav's
YeNO
Naan
Atiium & Kirthana
Haiku
0 min, 11 sec
2 min, 57 sec

PROGRAM:

Activity_main.xml

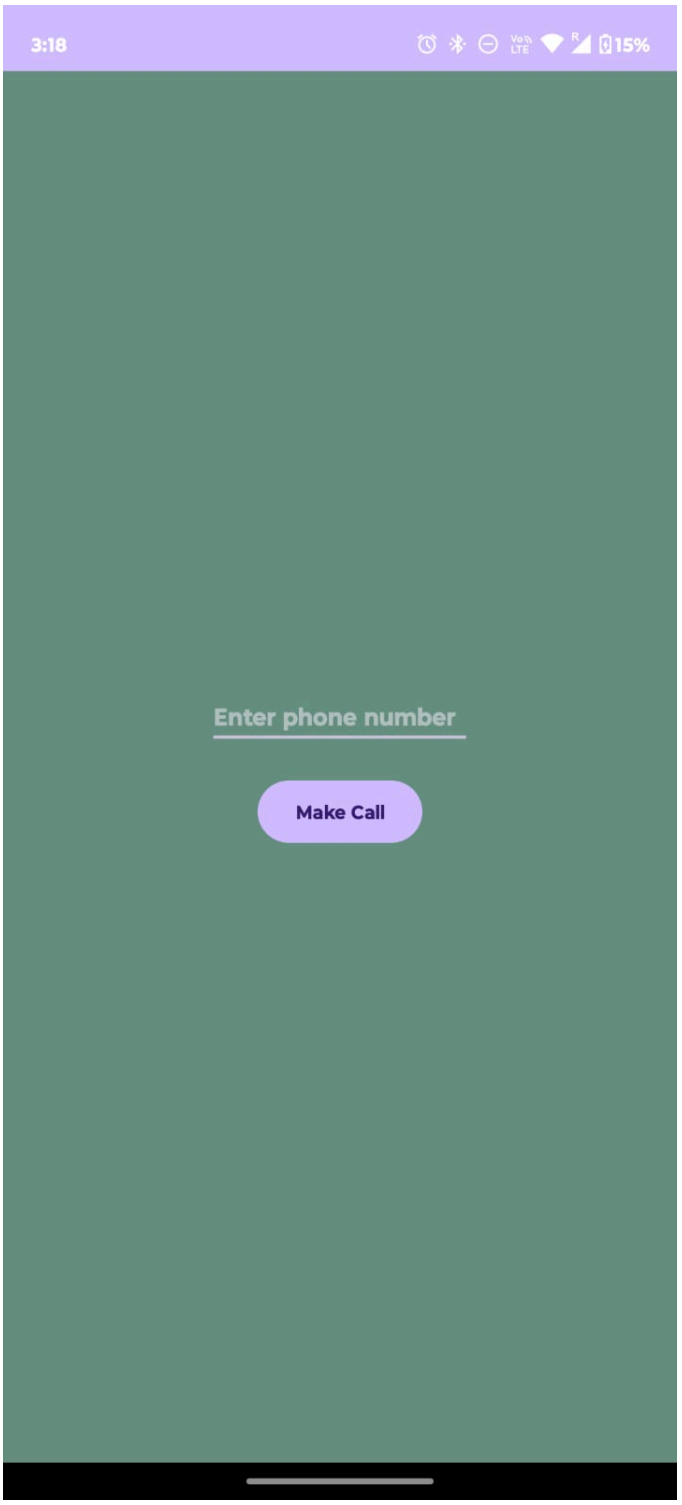
```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:background="#659080"
    android:gravity="center">

    <EditText
        android:id="@+id/phone_number"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter phone number"
        android:inputType="phone"
        android:layout_gravity="center_horizontal"
        android:minWidth="170dp" />

    <Button
        android:id="@+id/call_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Make Call"
        android:layout_gravity="center_horizontal" />
</LinearLayout>
```

Main_Activity.java

```
package com.example.phonecallapp;
import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
public class MainActivity extends AppCompatActivity {
    private static final int REQUEST_CALL_PERMISSION = 1;
    private EditText phoneNumberEditText;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
        phoneNumberEditText = findViewById(R.id.phone_number);
        Button callButton = findViewById(R.id.call_button);
        callButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                makePhoneCall();
            }
        });
    }
    private void makePhoneCall() {
        String phoneNumber = phoneNumberEditText.getText().toString().trim();
        if (phoneNumber.isEmpty()) {
            Toast.makeText(this, "Please enter a phone number", Toast.LENGTH_SHORT).show();
            return;
        }
        if (ActivityCompat.checkSelfPermission(this, Manifest.permission.CALL_PHONE) !=
PackageManager.PERMISSION_GRANTED) {
            // Request the CALL_PHONE permission
            ActivityCompat.requestPermissions(this, new String[]{Manifest.permission.CALL_PHONE},
REQUEST_CALL_PERMISSION);
        } else {
            // Permission is granted, make the call
            Intent callIntent = new Intent(Intent.ACTION_CALL);
            callIntent.setData(Uri.parse("tel:" + phoneNumber));
            startActivity(callIntent);
        }
    }
    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull int[]
grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);
        if (requestCode == REQUEST_CALL_PERMISSION) {
            if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED) {
                makePhoneCall();
            } else {
                Toast.makeText(this, "Permission Denied", Toast.LENGTH_SHORT).show();
            }
        }
    }
}
```

OUTPUT:



PROGRAM:

Activity_main.xml

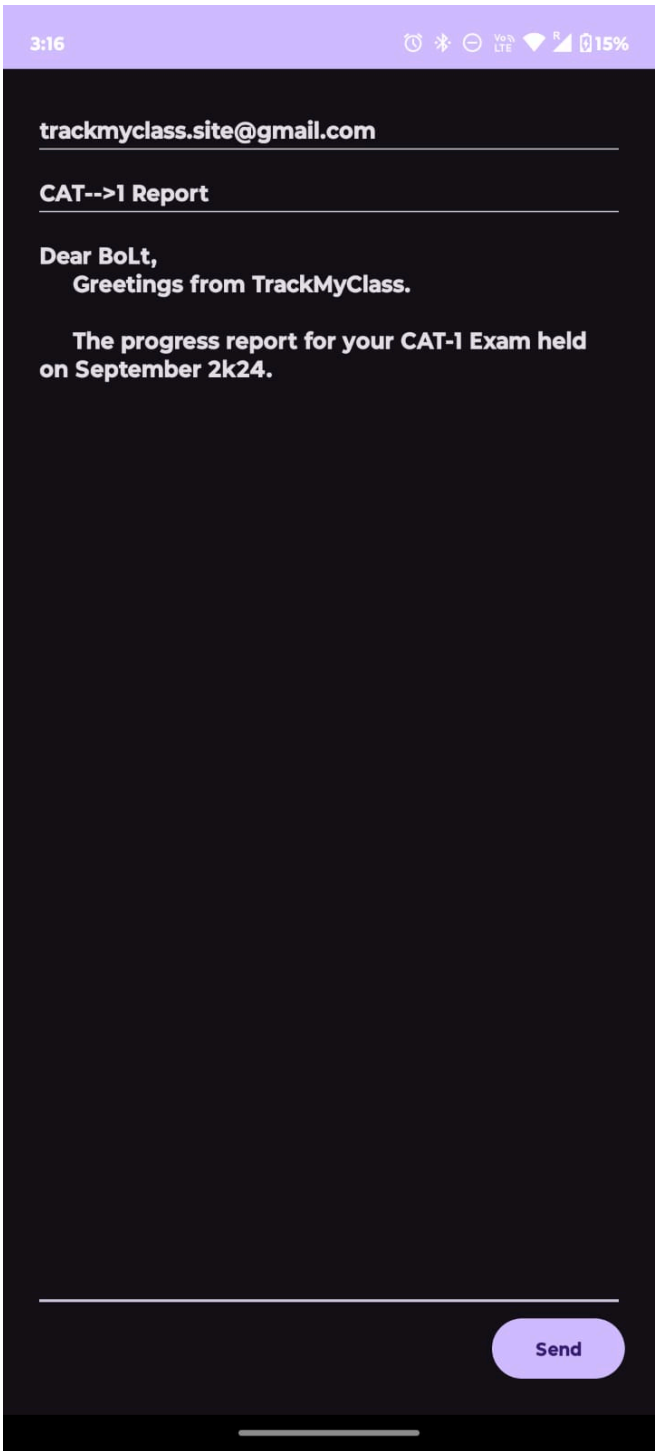
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="20dp"
    android:paddingRight="20dp"
    android:orientation="vertical"
    android:paddingTop="20dp"
    android:paddingBottom="20dp">
    <EditText
        android:id="@+id/txtTo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="To" />
    <EditText
        android:id="@+id/txtSub"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Subject" />
    <EditText
        android:id="@+id/txtMsg"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:hint="Message"
        android:inputType="textMultiLine"
        android:gravity="start|top"
        android:minLines="5"/>
    <Button
        android:id="@+id/btnSend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="end"
        android:text="Send" />
</LinearLayout>
```

Main_Activity.java

```
package com.example.sendmailexample;
import android.content.Intent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    private EditText eTo;
    private EditText eSubject;
```

```
    private EditText eMsg;
    private Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        eTo = findViewById(R.id.txtTo);
        eSubject = findViewById(R.id.txtSub);
        eMsg = findViewById(R.id.txtMsg);
        btn = findViewById(R.id.btnSend);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent emailIntent = new Intent(Intent.ACTION_SEND);
                emailIntent.putExtra(Intent.EXTRA_EMAIL, new String[]{eTo.getText().toString()});
                emailIntent.putExtra(Intent.EXTRA_SUBJECT, eSubject.getText().toString());
                emailIntent.putExtra(Intent.EXTRA_TEXT, eMsg.getText().toString());
                emailIntent.setType("message/rfc822");
                startActivity(Intent.createChooser(emailIntent, "Choose Mail App"));
            }
        });
    }
}
```

OUTPUT:


3:16
15%
trackmyclass.site@gmail.com
CAT-->1 Report
Dear BoLt,
Greetings from TrackMyClass.
The progress report for your CAT-1 Exam held on September 2k24.
Send

PROGRAM:

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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <TextView
        android:id="@+id/fstTxt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mobile No"
        android:textSize="18sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="50dp"/>

    <EditText
        android:id="@+id/mblTxt"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Mobile Number"
        android:inputType="phone"
        android:ems="10"
        app:layout_constraintTop_toBottomOf="@id/fstTxt"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <TextView
        android:id="@+id/secTxt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:textSize="18sp"
        app:layout_constraintTop_toBottomOf="@id/mblTxt"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="32dp"/>

    <EditText
        android:id="@+id/msgTxt"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Message"
        android:ems="10"
        app:layout_constraintTop_toBottomOf="@id/secTxt"
```

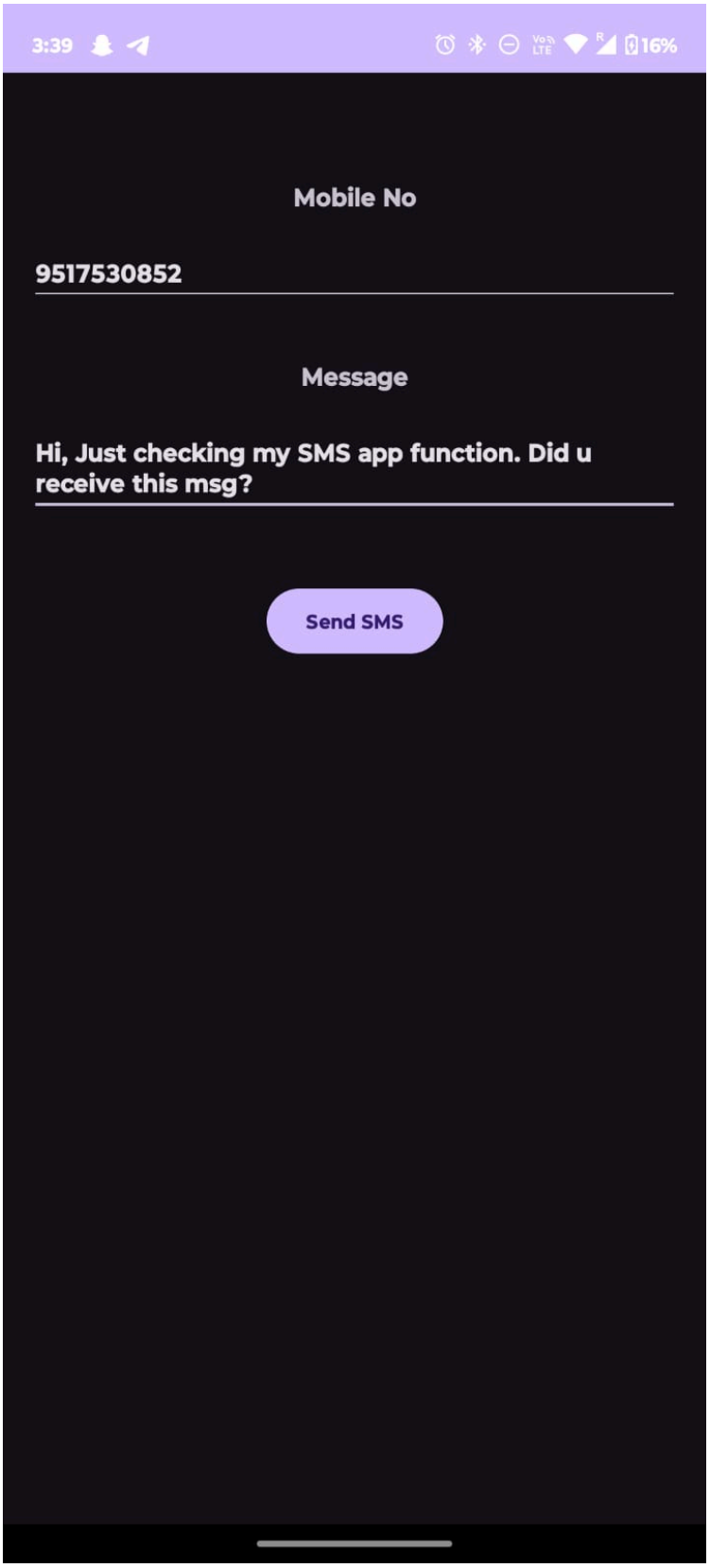
```
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/btnSend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send SMS"
        app:layout_constraintTop_toBottomOf="@id/msgTxt"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="40dp"/>

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

Main_Activity.java

```
package com.example.sendsmsexample;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    private EditText txtMobile;
    private EditText txtMessage;
    private Button btnSms;
    private static final int PERMISSION_REQUEST_SEND_SMS = 123;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txtMobile = findViewById(R.id.mblTxt);
        txtMessage = findViewById(R.id.msgTxt);
        btnSms = findViewById(R.id.btnSend);
        btnSms.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (ContextCompat.checkSelfPermission(MainActivity.this, Manifest.permission.SEND_SMS)
                        != PackageManager.PERMISSION_GRANTED) {
                    ActivityCompat.requestPermissions(MainActivity.this,
                            new String[]{Manifest.permission.SEND_SMS},
                            PERMISSION_REQUEST_SEND_SMS);
                } else {
                    sendSMS();
```

```
            }
        }
    });
}
private void sendSMS() {
    try {
        String phone = txtMobile.getText().toString();
        String message = txtMessage.getText().toString();
        SmsManager smgr = SmsManager.getDefault();
        smgr.sendTextMessage(phone, null, message, null, null);
        Toast.makeText(this, "SMS Sent Successfully", Toast.LENGTH_SHORT).show();
    } catch (Exception e) {
        Toast.makeText(this, "SMS Failed to Send, Please try again", Toast.LENGTH_SHORT).show();
        e.printStackTrace();
    }
}

@Override
public void onRequestPermissionsResult(int requestCode, String[] permissions, int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);
    if (requestCode == PERMISSION_REQUEST_SEND_SMS) {
        if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED) {
            sendSMS();
        } else {
            Toast.makeText(this, "Permission Denied", Toast.LENGTH_SHORT).show();
        }
    }
}
}
```

OUTPUT:


3:39
16%
Mobile No
9517530852
Message
Hi, Just checking my SMS app function. Did u receive this msg?
Send SMS

PROGRAM:

Activity_main.xml

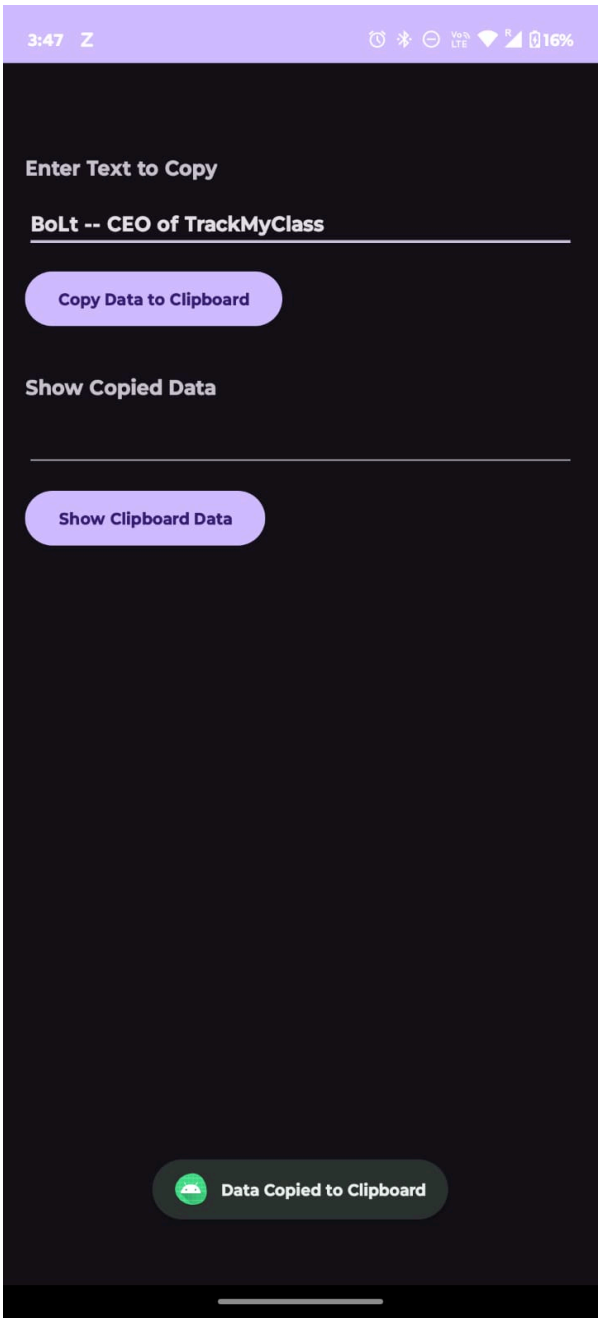
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:orientation="vertical"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">
   <TextView
      android:id="@+id/fstTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="50dp"
      android:text="Enter Text to Copy"
      android:textSize="18sp" />
   <EditText
      android:id="@+id/txtCopy"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to Android Clipboard"
      android:ems="10"
      android:layout_marginTop="10dp"/>
   <Button
      android:id="@+id/btnCopy"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="10dp"
      android:text="Copy Data to Clipboard" />
   <TextView
      android:id="@+id/secTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Show Copied Data"
      android:textSize="18sp"
      android:layout_marginTop="30dp"/>
   <EditText
      android:id="@+id/txtShow"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:layout_marginTop="10dp"/>
   <Button
      android:id="@+id/btnShow"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Show Clipboard Data"
      android:layout_marginTop="10dp"/>
</LinearLayout>
```

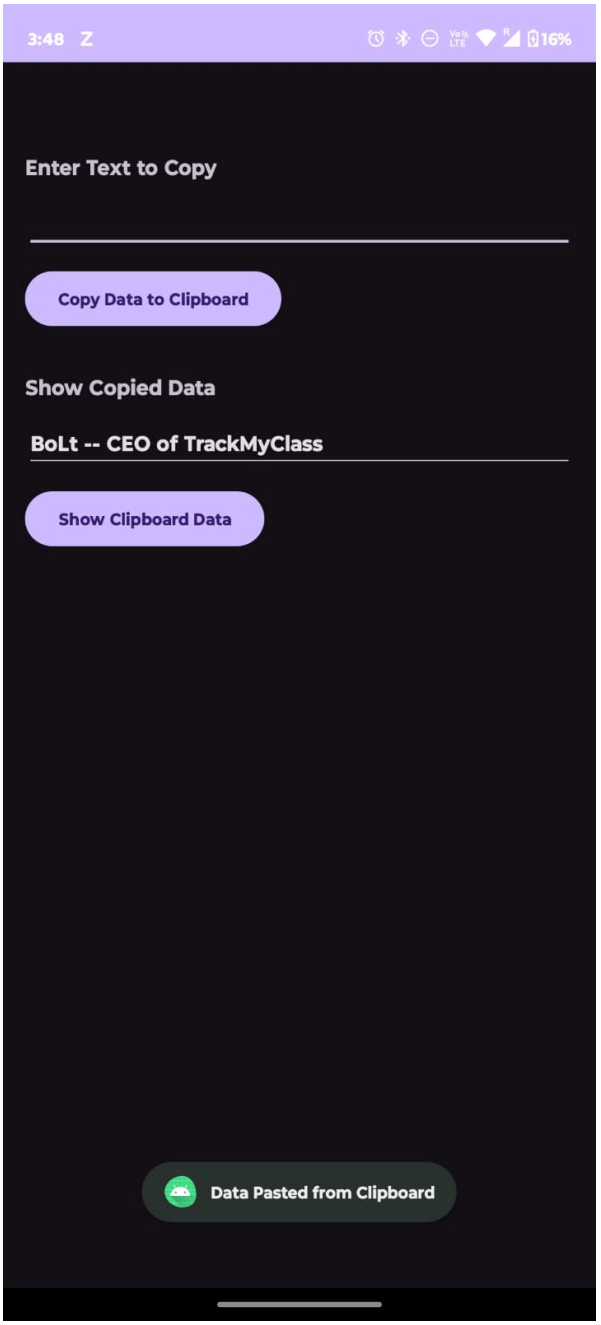
Main_Activity.java

```
package com.example.clipboardexample;

import android.content.ClipData;
import android.content.ClipboardManager;
import android.content.Context;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private EditText ctxt;
    private EditText ptxt;
    private Button btncpy;
    private Button btnpst;
    private ClipboardManager clipboardManager;
    private ClipData clipData;

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

        ctxt = findViewById(R.id.txtCopy);
        ptxt = findViewById(R.id.txtShow);
        btncpy = findViewById(R.id.btnCopy);
        btnpst = findViewById(R.id.btnShow);

        clipboardManager = (ClipboardManager) getSystemService(Context.CLIPBOARD_SERVICE);

        btncpy.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String txtcopy = ctxt.getText().toString();
                clipData = ClipData.newPlainText("text", txtcopy);
                clipboardManager.setPrimaryClip(clipData);
                Toast.makeText(getApplicationContext(), "Data Copied to Clipboard",
Toast.LENGTH_SHORT).show();
            }
        });

        btnpst.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (clipboardManager.hasPrimaryClip()) {
                    ClipData pData = clipboardManager.getPrimaryClip();
                    if (pData != null && pData.getItemCount() > 0) {
```

```
                ClipData.Item item = pData.getItemAt(0);
                String txtpaste = item.getText().toString();
                ptxt.setText(txtpaste);
                Toast.makeText(getApplicationContext(), "Data Pasted from Clipboard",
Toast.LENGTH_SHORT).show();
            }
        } else {
            Toast.makeText(getApplicationContext(), "Clipboard is empty", Toast.LENGTH_SHORT).show();
        }
    }
  });
 }
}
```

OUTPUT:


3:47
16%
Enter Text to Copy
BoLt -- CEO of TrackMyClass
Copy Data to Clipboard
Show Copied Data
Show Clipboard Data
Data Copied to Clipboard


3:48
16%
Enter Text to Copy
Copy Data to Clipboard
Show Copied Data
BoLt -- CEO of TrackMyClass
Show Clipboard Data
Data Pasted from Clipboard