PRACTISE MANUAL

AIM: Design a Registration Form that includes:

- Name (Text Input)
- Date of Birth (Date Picker)
- Email Address (Text Input)
- Gender (RadioButton)
- Phone Number (Text Input)
- Password (Password Input)
- Submit Button

CODE:

"activity_main.xml" file

```
<?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="#F5F5F5"
    android:padding="20dp">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_marginBottom="20dp"
            android:text="Register"
            android:textSize="24sp"
            android:textStyle="bold" />

        <EditText
            android:id="@+id/etName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"

android:background="@android:drawable/editbox_background"
```

```
            android:hint="Full Name"
            android:padding="10dp"
            android:textSize="16sp" />

        <EditText
            android:id="@+id/etEmail"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"

android:background="@android:drawable/editbox_background"
            android:hint="Email"
            android:inputType="textEmailAddress"
            android:padding="10dp"
            android:textSize="16sp" />

        <EditText
            android:id="@+id/etPhone"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"

android:background="@android:drawable/editbox_background"
            android:hint="Phone Number"
            android:inputType="phone"
            android:padding="10dp"
            android:textSize="16sp" />

        <EditText
            android:id="@+id/etDOB"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"

android:background="@android:drawable/editbox_background"
            android:focusable="false"
            android:hint="Date of Birth (DD/MM/YYYY)"
            android:padding="10dp"
            android:textSize="16sp" />

        <Button
            android:id="@+id/btnDOB"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
```

```
            android:layout_marginTop="5dp"
            android:text="Select Date of Birth" />

        <!-- Gender Selection -->
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:text="Select Gender:"
            android:textSize="16sp" />

        <RadioGroup
            android:id="@+id/radioGroupGender"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal">

            <RadioButton
                android:id="@+id/rbMale"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Male" />

            <RadioButton
                android:id="@+id/rbFemale"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Female" />
        </RadioGroup>

        <EditText
            android:id="@+id/etPassword"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"

android:background="@android:drawable/editbox_background"
            android:hint="Password"
            android:inputType="textPassword"
            android:padding="10dp"
            android:textSize="16sp" />

        <EditText
            android:id="@+id/etConfirmPassword"
```

```
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"

android:background="@android:drawable/editbox_background"
            android:hint="Confirm Password"
            android:inputType="textPassword"
            android:padding="10dp"
            android:textSize="16sp" />

        <Button
            android:id="@+id/btnRegister"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="20dp"
            android:backgroundTint="#6200EE"
            android:padding="12dp"
            android:text="Register"
            android:textColor="#FFFFFF"
            android:textSize="16sp" />

        <TextView
            android:id="@+id/tvError"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="10dp"
            android:textColor="#FF0000"
            android:visibility="gone" />
    </LinearLayout>
</ScrollView>
```

“MainActivity.java” file

```
package com.example.registrationform;

import androidx.appcompat.app.AppCompatActivity;

import android.app.DatePickerDialog;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
```

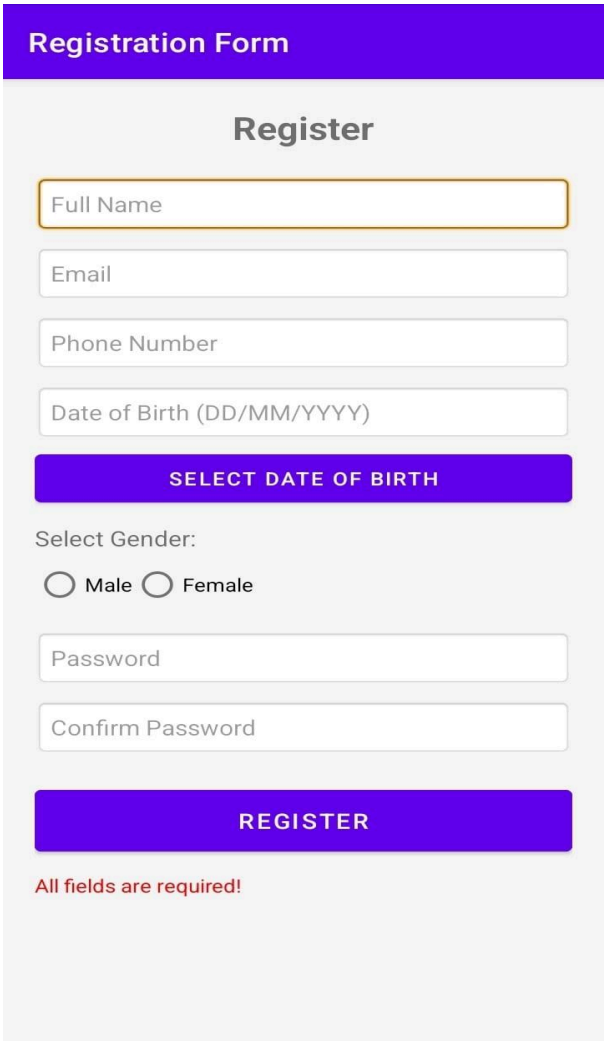
```
import android.widget.TextView;
import android.widget.Toast;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {
    private EditText etName, etEmail, etPhone, etDOB,
etPassword, etConfirmPassword;
    private TextView tvError;
    private RadioGroup radioGroupGender;
    private RadioButton rbMale, rbFemale;
    private Button btnDOB, btnRegister;
    private String selectedGender = "";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etName = findViewById(R.id.etName);
        etEmail = findViewById(R.id.etEmail);
        etPhone = findViewById(R.id.etPhone);
        etDOB = findViewById(R.id.etDOB);
        etPassword = findViewById(R.id.etPassword);
        etConfirmPassword =
findViewById(R.id.etConfirmPassword);
        radioGroupGender = findViewById(R.id.radioGroupGender);
        rbMale = findViewById(R.id.rbMale);
        rbFemale = findViewById(R.id.rbFemale);
        btnDOB = findViewById(R.id.btnDOB);
        btnRegister = findViewById(R.id.btnRegister);
        tvError = findViewById(R.id.tvError);

        // Date Picker for DOB
        btnDOB.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Calendar calendar = Calendar.getInstance();
                int year = calendar.get(Calendar.YEAR);
                int month = calendar.get(Calendar.MONTH);
                int day = calendar.get(Calendar.DAY_OF_MONTH);

                DatePickerDialog datePickerDialog = new
DatePickerDialog(MainActivity.this,
                        (view, year1, month1, dayOfMonth) -> {
```

```
                                String dob = dayOfMonth + "/" +
(month1 + 1) + "/" + year1;
                                etDOB.setText(dob);
                            }, year, month, day);
                    datePickerDialog.show();
                }
            });

            // Register Button Click Listener
            btnRegister.setOnClickListener(new
View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    String name =
etName.getText().toString().trim();
                    String email =
etEmail.getText().toString().trim();
                    String phone =
etPhone.getText().toString().trim();
                    String dob = etDOB.getText().toString().trim();
                    String password =
etPassword.getText().toString().trim();
                    String confirmPassword =
etConfirmPassword.getText().toString().trim();

                    int selectedId =
radioGroupGender.getCheckedRadioButtonId();
                    if (selectedId == R.id.rbMale) {
                        selectedGender = "Male";
                    } else if (selectedId == R.id.rbFemale) {
                        selectedGender = "Female";
                    }

                    if (TextUtils.isEmpty(name) ||
TextUtils.isEmpty(email) || TextUtils.isEmpty(phone)
                            || TextUtils.isEmpty(dob) ||
TextUtils.isEmpty(password) ||
TextUtils.isEmpty(confirmPassword)
                            || TextUtils.isEmpty(selectedGender)) {
                        tvError.setText("All fields are
required!");
                        tvError.setVisibility(View.VISIBLE);
                    } else if (!password.equals(confirmPassword)) {
                        tvError.setText("Passwords do not match!");
```

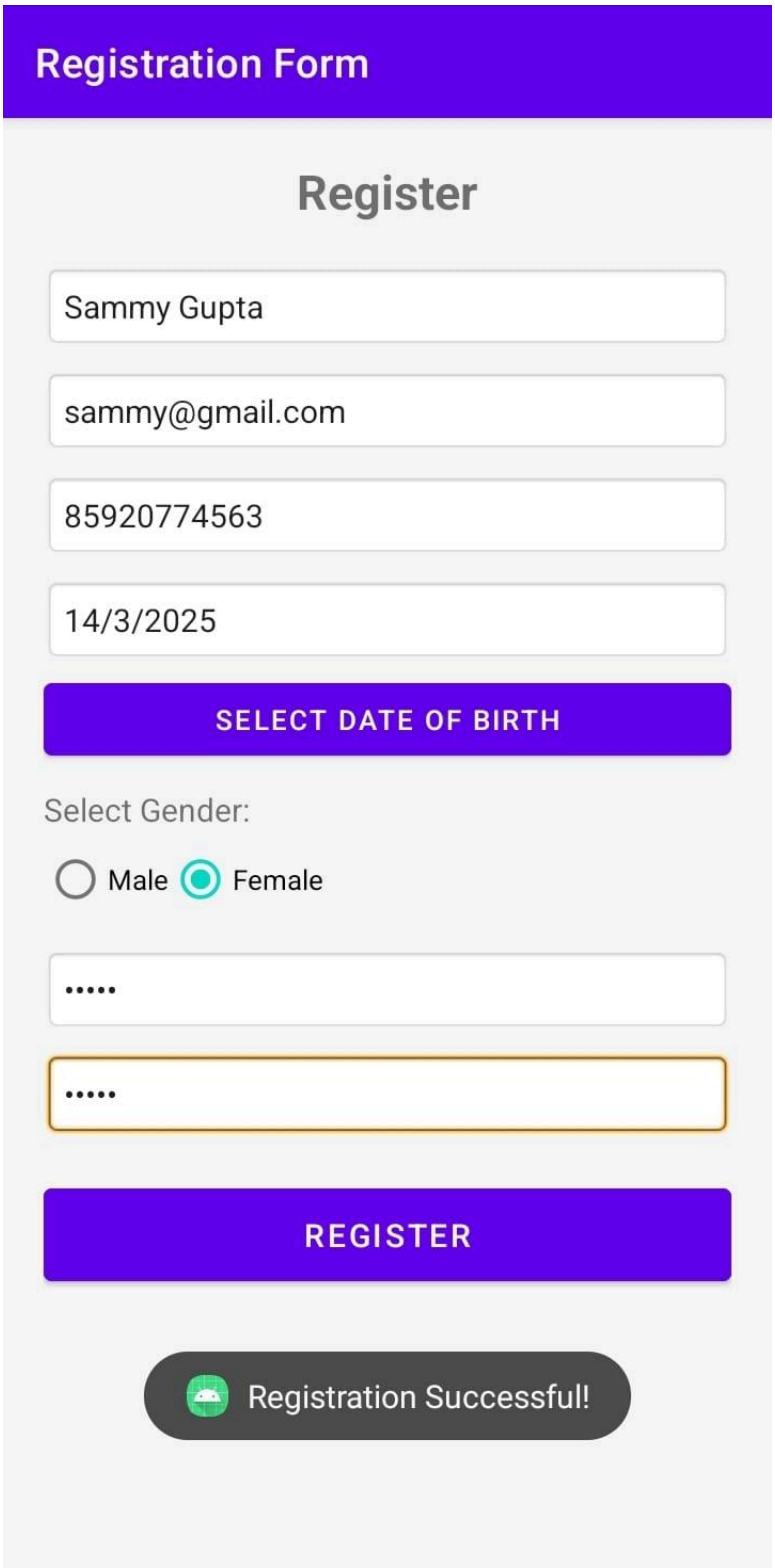
```
                    tvError.setVisibility(View.VISIBLE);
                } else {
                    tvError.setVisibility(View.GONE);
                    Toast.makeText(MainActivity.this,
"Registration Successful!", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

OUTPUT:

With Validation



Registration Successful



AIM: Create the standard calculator application in android

CODE:

“activity_main.xml” file

```
<?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:gravity="center"
    android:orientation="vertical"
    android:padding="20dp">

    <TextView
        android:id="@+id/display"
        android:layout_width="match_parent"
        android:layout_height="80dp"
        android:background="#EEEEEE"
        android:gravity="right"
        android:padding="10dp"
        android:text="0"
        android:textSize="24sp" />

    <GridLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:columnCount="4"
        android:padding="5dp"
        android:rowCount="5">
```

```
        <!-- Row 1 -->
        <Button
            android:id="@+id/btnDel"
            android:text="DEL"
            />

        <Button
            android:id="@+id/btnClear"
            android:text="C" />

        <Button
            android:id="@+id/btnPercent"
            android:text="%" />

        <Button
            android:id="@+id/btnAdd"
            android:text="+" />

        <!-- Row 2 -->
        <Button
            android:id="@+id/btn1"
            android:text="1" />

        <Button
            android:id="@+id/btn2"
            android:text="2" />

        <Button
            android:id="@+id/btn3"
            android:text="3" />

        <Button
            android:id="@+id/btnDivide"
            android:text="/" />

        <!-- Row 3 -->
        <Button
            android:id="@+id/btn4"
            android:text="4" />

        <Button
            android:id="@+id/btn5"
            android:text="5" />

        <Button
            android:id="@+id/btn6"
            android:text="6" />

        <Button
            android:id="@+id/btnSubtract"
            android:text="-" />

        <!-- Row 4 -->
```

```
        <Button
            android:id="@+id/btn7"
            android:text="7" />

        <Button
            android:id="@+id/btn8"
            android:text="8" />

        <Button
            android:id="@+id/btn9"
            android:text="9" />

        <Button
            android:id="@+id/btnMultiply"
            android:text="X" />

        <!-- Row 5 -->
        <Button
            android:id="@+id/btnDot"
            android:text="." />

        <Button
            android:id="@+id/btn0"
            android:text="0" />

        <Button
            android:id="@+id/btnEqual"
            android:text="=" />
    </GridLayout>

</LinearLayout>
```

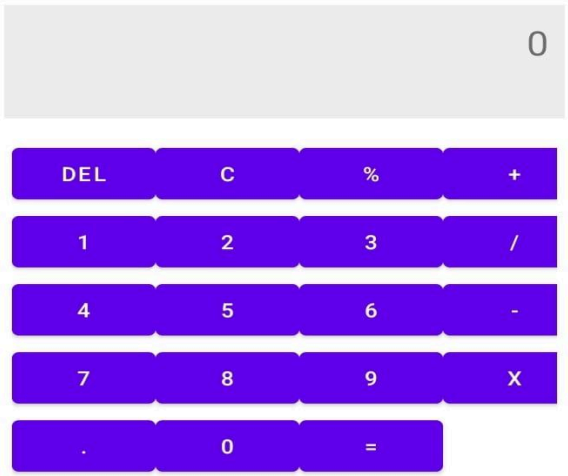
“MainActivity.java” file

```
package com.example.registrationform;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    private TextView display;
    private String input = "";
    private String operator = "";
    private double num1 = 0;
    private boolean isOperatorClicked = false;

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

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


            display = findViewById(R.id.display);

            View.OnClickListener listener = new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    Button button = (Button) v;
                    String value = button.getText().toString();

                    if (value.matches("[0-9]") || value.equals(".")) {
                        if (isOperatorClicked) {
                            input = "";
                            isOperatorClicked = false;
                        }
                        input += value;
                        display.setText(input);
                    } else if (value.matches("[+\\-X/]")) {
                        operator = value;
                        num1 = Double.parseDouble(input);
                        isOperatorClicked = true;
                    } else if (value.equals("=")) {
                        double num2 = Double.parseDouble(input);
                        double result = calculate(num1, num2, operator);
                        display.setText(String.valueOf(result));
                        input = String.valueOf(result);
                    } else if (value.equals("C")) {
                        input = "";
                        num1 = 0;
                        operator = "";
                        display.setText("0");
                    } else if (value.equals("DEL") && input.length() > 0) {
                        input = input.substring(0, input.length() - 1);
                        display.setText(input.isEmpty() ? "0" : input);
                    }
                }
            };

            int[] buttonIds = {R.id.btn0, R.id.btn1, R.id.btn2, R.id.btn3,
R.id.btn4,
                    R.id.btn5, R.id.btn6, R.id.btn7, R.id.btn8, R.id.btn9,
                    R.id.btnDot, R.id.btnAdd, R.id.btnSubtract,
R.id.btnMultiply,
                    R.id.btnDivide, R.id.btnEqual, R.id.btnClear,
R.id.btnDel};

            for (int id : buttonIds) {
                findViewById(id).setOnClickListener(listener);
            }
        }

        private double calculate ( double num1, double num2, String operator){
```

```
            switch (operator) {
                case "+":
                    return num1 + num2;
                case "-":
                    return num1 - num2;
                case "X":
                    return num1 * num2;
                case "/":
                    return num2 != 0 ? num1 / num2 : 0;
                default:
                    return num2;
            }
        }
    }
```

OUTPUT:



AIM: Create a login screen with EditText fields for username and password, and a Button
to submit. Include validation for empty fields.

CODE:

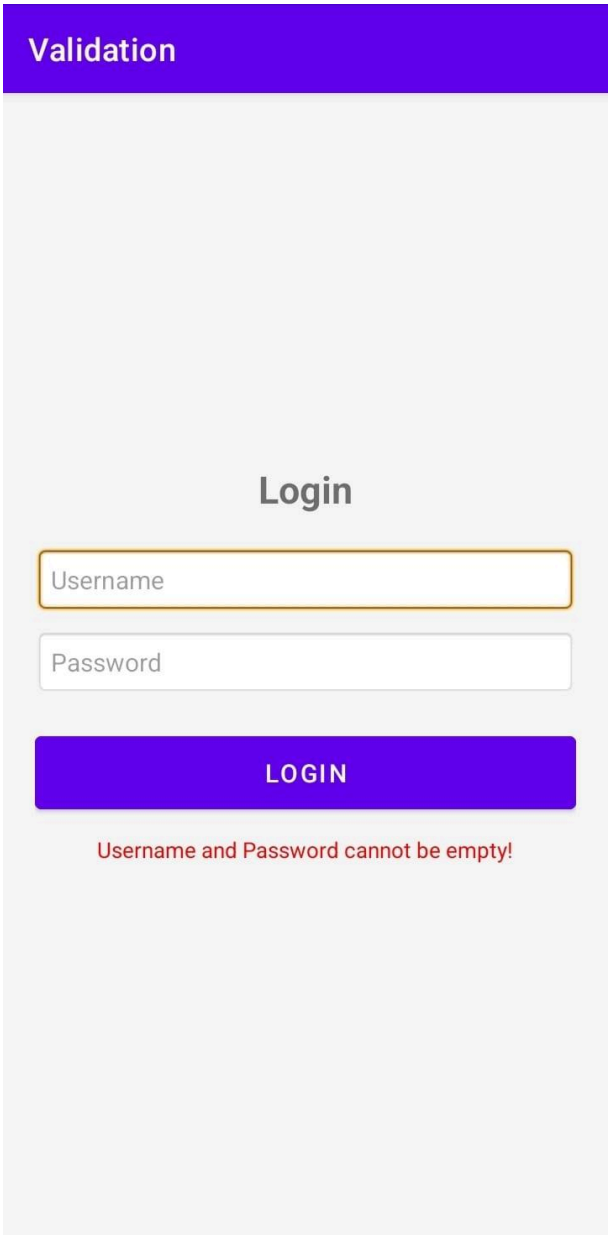
“activity_main.xml” file

```
<?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="20dp"
    android:gravity="center"
    android:background="#F5F5F5">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_marginBottom="20dp"/>

    <EditText
        android:id="@+id/etUsername"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"
        android:padding="10dp"
        android:background="@android:drawable/editbox_background"
        android:textSize="16sp"/>

    <EditText
        android:id="@+id/etPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Password"
        android:padding="10dp"
        android:background="@android:drawable/editbox_background"
        android:textSize="16sp"
        android:inputType="textPassword"
        android:layout_marginTop="10dp"/>

    <Button
        android:id="@+id/btnLogin"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:padding="12dp"
        android:textSize="16sp"
        android:backgroundTint="#6200EE"
```

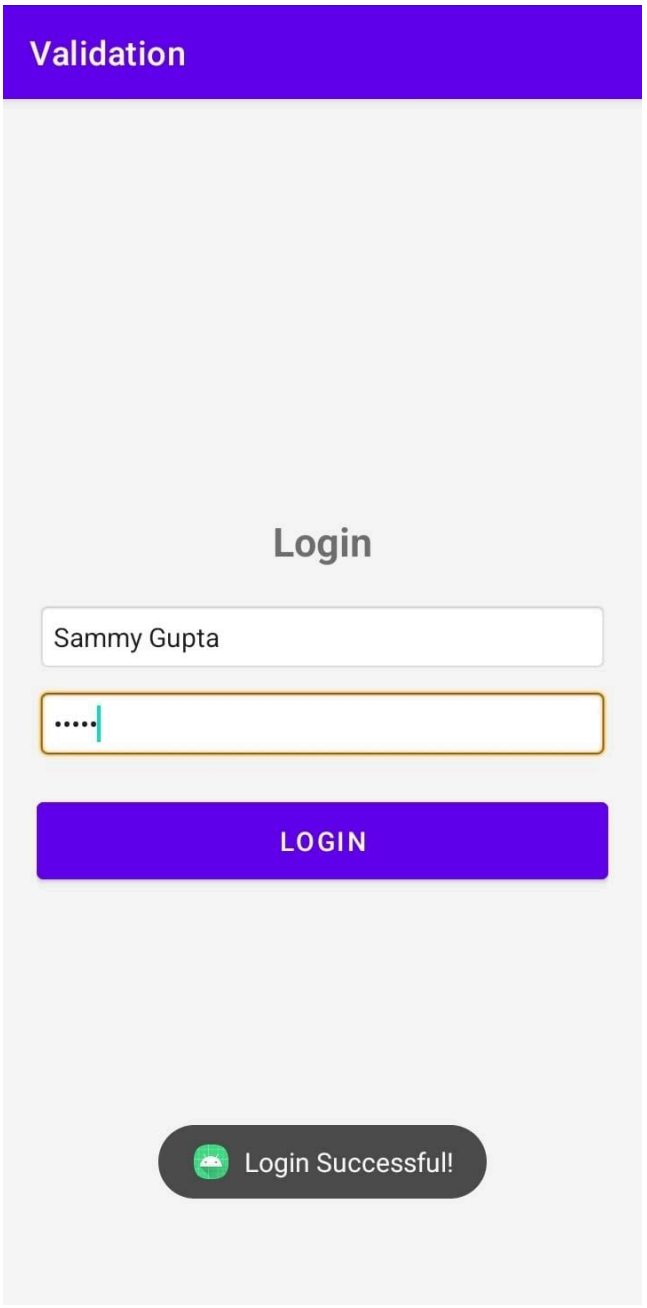
```
        android:textColor="#FFFFFF"
        android:layout_marginTop="20dp"/>

    <TextView
        android:id="@+id/tvError"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="#FF0000"
        android:layout_marginTop="10dp"
        android:visibility="gone"/>
</LinearLayout>
```

OUTPUT:

Validation for Username and Password



Login Successful



AIM: Create the background service android application to play the ringtone/music. **(PRACTICAL 7 from the manual)**

AIM: Create an android application which automatically notify the user when Aeroplane mode is turned on or off using broadcast receiver. **(PRACTICAL 7 from the manual)**

AIM: Explain the Android Activity life cycle in detail. Implement a simple app that
logs the lifecycle methods (onCreate(), onStart(), onResume(), onPause(), onStop(), onDestroy()). **(PRACTICAL 3 from the manual)**

AIM: Insert the new contents in the following resources and demonstrate their uses in the android application
Android Resources: (Color, Theme, String, Drawable, Dimension, Image) **(PRACTICAL 2 from the manual)**

AIM: Create an android application which automatically notify the user when Aeroplane mode is turned on or off using broadcast receiver. **(PRACTICAL 7 from the manual only Broadcast Receiver part)**

AIM: Create an android application to demonstrate the use of sub menu the toast should be appeared by selecting the sub menu item **(PRACTICAL 6 from the manual)**

AIM: Create an android application to display Alert Dialog on pressing the Back button. **(PRACTICAL 6 from the manual only the Alert Dialog Box part)**