1.Aim:

Create an application to design a Visiting Card. The Visiting card should have a company logoat the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address is to be displayed. Insert a horizontal line between the job title and The phone number.

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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">
<TextView
    android:id="@+id/textView4"
    android:layout_width="371dp"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView5"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="21dp"
    android:layout_marginLeft="21dp"
    android:layout_marginEnd="19dp"
    android:layout_marginRight="19dp"
    android:layout_marginBottom="22dp"
    android:text="Address:Chowdavaram, Guntur, Andhra Pradesh -522019"
    android:textAlignment="center"
    android:textSize="24sp" />
<TextView
    android:id="@+id/textView5"
    android:layout_width="250dp"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView6"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="82dp"
    android:layout_marginLeft="82dp"
    android:layout_marginEnd="78dp"
    android:layout_marginRight="78dp"
    android:layout_marginBottom="35dp"
    android:text="Ph No: 9573153476"
    android:textAlignment="center"
    android:textSize="24sp" />
<TextView
    android:id="@+id/textView6"
    android:layout_width="367dp"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="23dp"
    android:layout_marginLeft="23dp"
    android:layout_marginEnd="21dp"
    android:layout_marginRight="21dp"
    android:layout_marginBottom="170dp"
    android:text="Email Id: reguvel07@gmail.com"
    android:textAlignment="center"
    android:textSize="24sp" />
```

```xml
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView4"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="23dp"
    android:layout_marginLeft="23dp"
    android:layout_marginEnd="21dp"
    android:layout_marginRight="21dp"
    android:layout_marginBottom="30dp"
    android:text="II B.Tech Stuent - CSE"
    android:textAlignment="center"
    android:textSize="24sp" />
<ImageView
    android:id="@+id/imageView3"
    android:layout_width="103dp"
    android:layout_height="117dp"
    android:layout_above="@+id/view"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="9dp"
    android:layout_marginRight="9dp"
    android:layout_marginBottom="35dp"
    app:srcCompat="@drawable/rvrlogo" />
<View
    android:id="@+id/view"
    android:layout_width="wrap_content"
    android:layout_height="4dp"
    android:layout_above="@+id/textView2"
    android:layout_marginBottom="30dp"
    android:background="#4444" />
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView3"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="76dp"
    android:layout_marginLeft="76dp"
    android:layout_marginEnd="73dp"
    android:layout_marginRight="73dp"
    android:layout_marginBottom="24dp"
    android:text="Gnanavelu Reguvel"
    android:textAlignment="center"
    android:textSize="24sp"
    android:textStyle="bold" />
<TextView
    android:id="@+id/textView7"
    android:layout_width="222dp"
    android:layout_height="64dp"
    android:layout_above="@+id/view"
    android:layout_marginEnd="0dp"
    android:layout_marginRight="0dp"
    android:layout_marginBottom="65dp"
    android:layout_toStartOf="@+id/imageView3"
    android:layout_toLeftOf="@+id/imageView3"
    android:text="RVRJCCE"
    android:textColor="#E91E63"
```

```
      android:textSize="50sp"
      android:textStyle="bold" />
</RelativeLayout>
```

JAVA Code:

```java
package com.example.visitingcardapp;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
@Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);}
}
```

2.Aim:

Create an Application that takes the Student data (Name ,Regdno, Number, Email and MobileNumber) from the user and display the same when user clicks the OK Button.

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".MainActivity"
    android:orientation="vertical">
<TextView
        android:id="@+id/textView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Name:"
        android:textSize="24sp" />
<EditText
        android:id="@+id/editText1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="24sp" />
<TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Age:"
        android:textSize="24sp" />
<EditText
        android:id="@+id/editText2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        android:textSize="24sp" />
<TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Department:"
        android:textSize="24sp" />
<EditText
        android:id="@+id/editText3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="24sp" />
    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="submit"
        android:onClick="submit"/>
<TextView
        android:id="@+id/textView4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24sp" />
<TextView
        android:id="@+id/textView5"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24sp" />

    <TextView
        android:id="@+id/textView6"
        android:layout_width="match_parent"
```

```
      android:layout_height="wrap_content"
      android:textSize="24sp" />
</LinearLayout>
```

JAVA Code:
```java
package com.example.studentapp;
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 {
    private EditText t1;
    private EditText t2;
    private EditText t3;
    private TextView o1;
    private TextView o2;
    private TextView o3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t1=findViewById(R.id.editText1);
        t2=findViewById(R.id.editText2);
        t3=findViewById(R.id.editText3);
        o1=findViewById(R.id.textView4);
        o2=findViewById(R.id.textView5);
        o3=findViewById(R.id.textView6);}
    public void submit(View view) {
        String name=t1.getText().toString();
        String age=t2.getText().toString();
        String dept=t3.getText().toString();
        o1.setText(name);
        o2.setText(age);
        o3.setText(dept);}
}
```

Regd. No.: Y21CS043

3.Aim:

Develop an Android application using controls like Button, TextView, Edit Text for designing a calculator having basic functionality like Addition, Subtraction, Multiplication, and Division.
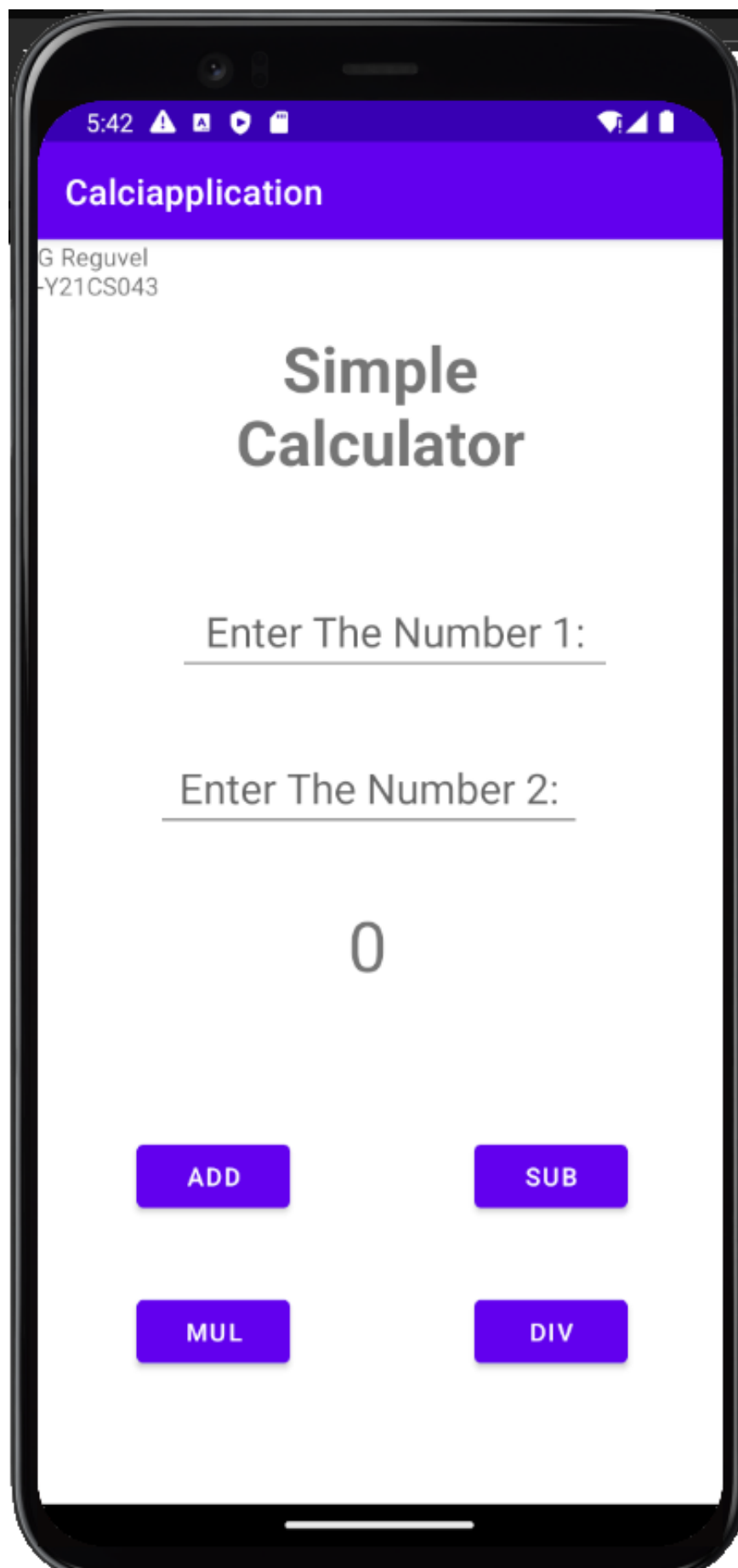
XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context=".MainActivity" >
<TextView
        android:id="@+id/textView"
        android:layout_width="294dp"
        android:layout_height="wrap_content"
        android:layout_above="@+id/editText1"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginStart="59dp"
        android:layout_marginLeft="59dp"
        android:layout_marginEnd="58dp"
        android:layout_marginRight="58dp"
        android:layout_marginBottom="59dp"
        android:text="Simple Calculator"
        android:textAlignment="center"
        android:textSize="36sp"
        android:textStyle="bold" />
<EditText
        android:id="@+id/editText1"
        android:layout_width="250dp"
        android:layout_height="wrap_content"
        android:layout_above="@+id/editText2"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_marginStart="80dp"
        android:layout_marginLeft="80dp"
        android:layout_marginBottom="37dp"
        android:ems="10"
        android:hint="Enter The Number 1:"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textSize="24sp" />
<EditText
        android:id="@+id/editText2"
        android:layout_width="245dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="80dp"
        android:layout_marginRight="80dp"
        android:layout_marginBottom="384dp"
        android:ems="10"
        android:hint="Enter The Number 2:"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textSize="24sp" />
<TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="192dp"
        android:layout_marginRight="192dp"
        android:layout_marginBottom="294dp"
```

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```
        android:text="0"
        android:textAlignment="center"
        android:textSize="40dp" />
<Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="57dp"
        android:layout_marginLeft="57dp"
        android:layout_marginBottom="164dp"
        android:onClick="doAdd"
        android:text="ADD" />
<Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="54dp"
        android:layout_marginRight="54dp"
        android:layout_marginBottom="164dp"
        android:onClick="doSub"
        android:text="SUB" />
<Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="57dp"
        android:layout_marginLeft="57dp"
        android:layout_marginBottom="75dp"
        android:onClick="doMul"
        android:text="MUL" />
<Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="54dp"
        android:layout_marginRight="54dp"
        android:layout_marginBottom="75dp"
        android:onClick="doDiv"
        android:text="DIV" />
<TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_above="@+id/textView"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginEnd="262dp"
        android:layout_marginRight="262dp"
        android:layout_marginBottom="16dp"
        android:text="G Reguvel -Y21CS043"
        android:textSize="14sp" />
</RelativeLayout>
```

JAVA Code:

```java
package com.example.calciapplication;
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 {
    EditText e1,e2;
    TextView tv;
@Override protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1 =(EditText)findViewById(R.id.editText1);
        e2 = (EditText)findViewById(R.id.editText2);
        tv= (TextView)findViewById(R.id.textView1);}
    public void doAdd(View v) {
        int a1=Integer.parseInt(e1.getText().toString());
        int a2= Integer.parseInt(e2.getText().toString());
        int result=a1+a2;
        tv.setText(""+result);}
    public void doSub(View v) {
        int a1=Integer.parseInt(e1.getText().toString());
        int a2= Integer.parseInt(e2.getText().toString());
        int result=a1-a2;
        tv.setText(""+result);}
    public void doMul(View v) {
        int a1=Integer.parseInt(e1.getText().toString());
        int a2= Integer.parseInt(e2.getText().toString());
        int result=a1*a2;
        tv.setText(""+result); }
    public void doDiv(View v) {
        float a1=Integer.parseInt(e1.getText().toString());
        float a2= Integer.parseInt(e2.getText().toString());
        float result=a1/a2;
        tv.setText(""+result); }
}
```

Regd. No.: Y21CS043
4. Aim:
Create a SIGN-Up activity with Username and Password. Validation of password should happen based on the following rules:
Password should contain uppercase and lowercase letters.
Password should contain letters and numbers.
Password should contain special characters.
Minimum length of the password (the default value is 8).
On successful SIGN UP proceed to the next Login activity. Here the user should SIGN IN using the Username and Password created during the signup activity. If the Username and Password are matched then navigate to the next activity which displays a message saying "Successful Login" or else display a toast message saying "Login Failed". The user is given only two attempts and after that displays a toast message saying "Failed Login Attempts" and disable the SIGN IN button. Use Bundle to transfer information from one activity to another.

XML Code1:
activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context=".MainActivity">
<TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="143dp"
        android:layout_marginEnd="146dp"
        android:layout_marginRight="146dp"
        android:text="Sign Up"
        android:textSize="34sp"
        android:textStyle="bold" />
<EditText
        android:id="@+id/emailEditText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="57dp"
        android:layout_marginEnd="67dp"
        android:layout_marginRight="67dp"
        android:ems="10"
        android:hint="Email-ID"
        android:inputType="textPersonName"
        android:textSize="24sp" />
<EditText
        android:id="@+id/passwordEditText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/emailEditText"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="61dp"
        android:layout_marginEnd="66dp"
        android:layout_marginRight="66dp"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPersonName"
        android:textSize="24sp" />
<Button
        android:id="@+id/signBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/passwordEditText"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginTop="73dp"
```

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```
    android:layout_marginEnd="158dp"
    android:layout_marginRight="158dp"
    android:text="Sign Up" />
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/signBtn"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="50dp"
    android:layout_marginEnd="128dp"
    android:layout_marginRight="128dp"
    android:text="G Reguvel - Y21CS043"
    android:textSize="16sp" />
</RelativeLayout>
```

JAVA Code1:
MainActivity.java

```
package com.example.signupapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import java.util.regex.Pattern;
public class MainActivity extends AppCompatActivity {
    EditText email_Sign, password_Sign;
    Button signUp_btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        email_Sign=(EditText)findViewById(R.id.emailEditText);
        password_Sign=(EditText)findViewById(R.id.passwordEditText);
        signUp_btn =(Button)findViewById(R.id.signBtn);
        signUp_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String email = email_Sign.getText().toString();
                String password = password_Sign.getText().toString();
                if(!isValidPassword(password)) {
                    Toast.makeText(MainActivity.this,"Password doesn't match rules",Toast.LENGTH_SHORT).show();
                    return; }
                Intent intent = new Intent(MainActivity.this,LoginActivity.class);
                intent.putExtra("email",email);
                intent.putExtra("password",password);
                startActivity(intent);
            }});
    }
    Pattern lowerCase= Pattern.compile("^.*[a-z].*$");
    Pattern upperCase=Pattern.compile("^.*[A-Z].*$");
    Pattern number = Pattern.compile("^.*[0-9].*$");
    Pattern special_Chara = Pattern.compile("^.*[^a-zA-Z0-9].*$");
    private Boolean isValidPassword(String password){
        if(password.length()<8) {
            return false; }
        if(!lowerCase.matcher(password).matches()) {
            return false; }
        if(!upperCase.matcher(password).matches()) {
            return false; }
        if(!number.matcher(password).matches()) {
            return false; }
        if(!special_Chara.matcher(password).matches()) {
            return false; }
        return true; }
}
```

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XML Code2:

activity_login.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context=".LoginActivity">
<TextView
    android:id="@+id/loginTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="64dp"
    android:layout_marginEnd="146dp"
    android:layout_marginRight="146dp"
    android:text="Login"
    android:textSize="48sp"
    android:textStyle="bold" />
<EditText
    android:id="@+id/EmaileditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/loginTextView"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="72dp"
    android:layout_marginEnd="66dp"
    android:layout_marginRight="66dp"
    android:ems="10"
    android:hint="Email ID:"
    android:inputType="textPersonName"
    android:textSize="24sp" />
<EditText
    android:id="@+id/passEditText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/EmaileditText"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="68dp"
    android:layout_marginEnd="65dp"
    android:layout_marginRight="65dp"
    android:ems="10"
    android:hint="Password:"
    android:inputType="textPersonName"
    android:textSize="24sp" />
<Button
    android:id="@+id/loginBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/passEditText"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginTop="83dp"
    android:layout_marginEnd="153dp"
    android:layout_marginRight="153dp"
    android:text="Login" />
</RelativeLayout>
```

JAVA Code2:

```java
package com.example.signupapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class LoginActivity extends AppCompatActivity {
    EditText emailEditText,passwordEditText;
    Button login_btn;int counter=2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);setContentView(R.layout.activity_login);
        emailEditText=(EditText)findViewById(R.id.EmaileditText);
        passwordEditText=(EditText)findViewById(R.id.passEditText);
        login_btn=(Button)findViewById(R.id.loginBtn);
        String registeredEmail = getIntent().getStringExtra("email");
        String registeredPassword= getIntent().getStringExtra("password");
        login_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {String email = emailEditText.getText().toString();
                String password = passwordEditText.getText().toString();
                if(registeredEmail.equals(email) && registeredPassword.equals(password)){
                    Intent intent= new Intent(LoginActivity.this,LoginSuccessful.class);
                    startActivity(intent); }
                else{
                    Toast.makeText(LoginActivity.this,"Invalid Credentials",Toast.LENGTH_SHORT).show();}
                counter--;
                if(counter==0){
                    Toast.makeText(getBaseContext(),"failed to login attempts",Toast.LENGTH_SHORT).show();
                        login_btn.setEnabled(false);}}});}}
}
```

XML Code3:
activity_login_succesful.xml:
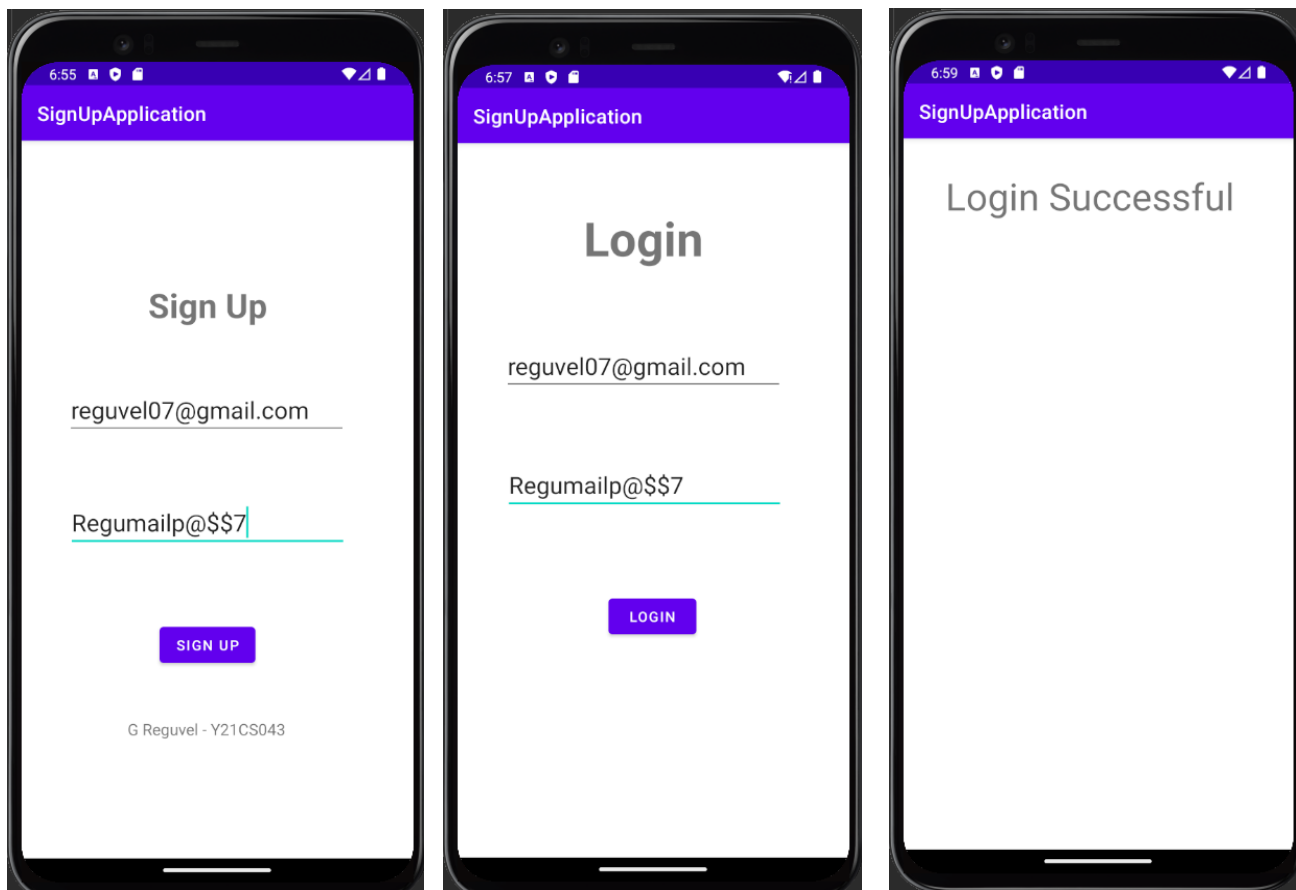
```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".LoginSuccessful">
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="59dp"
    android:layout_marginRight="59dp"
    android:layout_marginBottom="641dp"android:text="Login Successful"
    android:textSize="38dp" />
</RelativeLayout>
```

JAVA Code3:
LoginSuccessful.java:

```java
package com.example.signupapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class LoginSuccessful extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login_successful);}}
```

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5.Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.
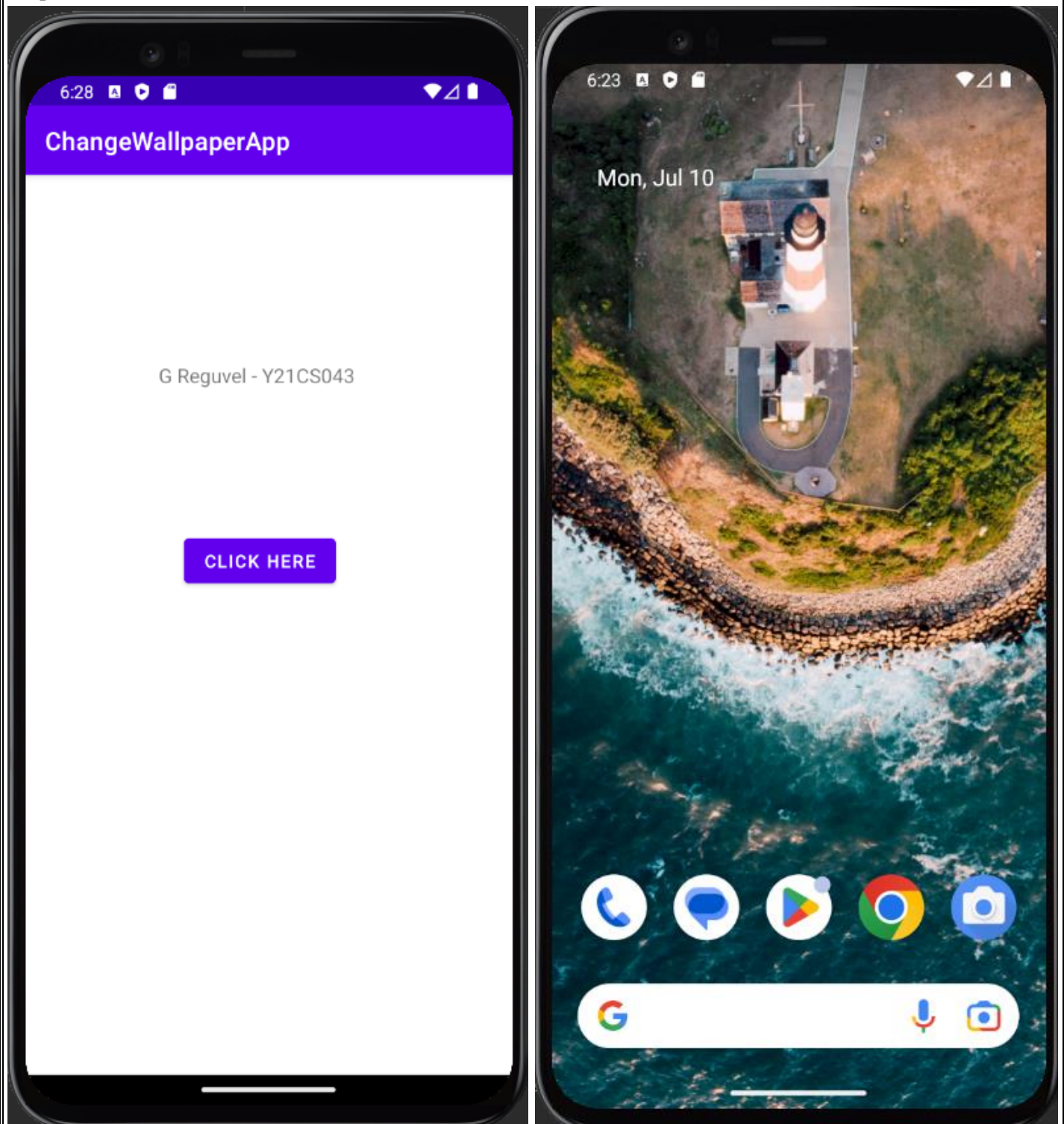
XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context=".MainActivity">
<Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="142dp"
        android:layout_marginRight="142dp"
        android:layout_marginBottom="390dp"
        android:text="CLICK HERE" />
<TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="127dp"
        android:layout_marginRight="127dp"
        android:layout_marginBottom="553dp"
        android:text="G Reguvel - Y21CS043"
        android:textSize="16sp" />
</RelativeLayout>
```

JAVA Code:

```java
package com.example.changewallpaperapp;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.app.AppCompatActivity;
import android.app.WallpaperManager;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import java.io.IOException;
import java.util.Timer;
import java.util.TimerTask;
public class MainActivity extends AppCompatActivity {
    Button wallpaperChange;
    Timer mytimer;
    Drawable drawable;
    WallpaperManager wpm;
    int prev=1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mytimer=new Timer();
        wpm = WallpaperManager.getInstance(this);
```

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```
    wallpaperChange=(Button)findViewById(R.id.button1);
    wallpaperChange.setOnClickListener(new View.OnClickListener() {
      @Override public void onClick(View view) {
        setwallpaper();}});
}
private void setwallpaper() {
    Toast.makeText(this,"setting Wallpaper please wait.",Toast.LENGTH_LONG).show();
    mytimer.schedule(new TimerTask() {
      @Override
      public void run()
      {
        if(prev==1) {
          drawable = getResources().getDrawable(R.drawable.i1); prev = 2; }
        else if(prev==2) {
          drawable = getResources().getDrawable(R.drawable.i2); prev=3; }
        else if(prev==3) {
          drawable = getResources().getDrawable(R.drawable.i3); prev=4; }
        else if(prev==4) {
          drawable = getResources().getDrawable(R.drawable.i4); prev=5; }
        else if(prev==5) {
          drawable = getResources().getDrawable(R.drawable.i5); prev=1; }
        Bitmap wallpaper = ((BitmapDrawable)drawable).getBitmap(); try {
        wpm.setBitmap(wallpaper); }
      catch (IOException e)
      { e.printStackTrace();}
      }},0,30000);
}
```

6. Write a program to create an activity with two buttons START and STOP. On pressing of the START button, the activity must start the counter by displaying the numbers from One and the counter must keep on counting until the STOP button is pressed. Display the counter value in a TextView control.
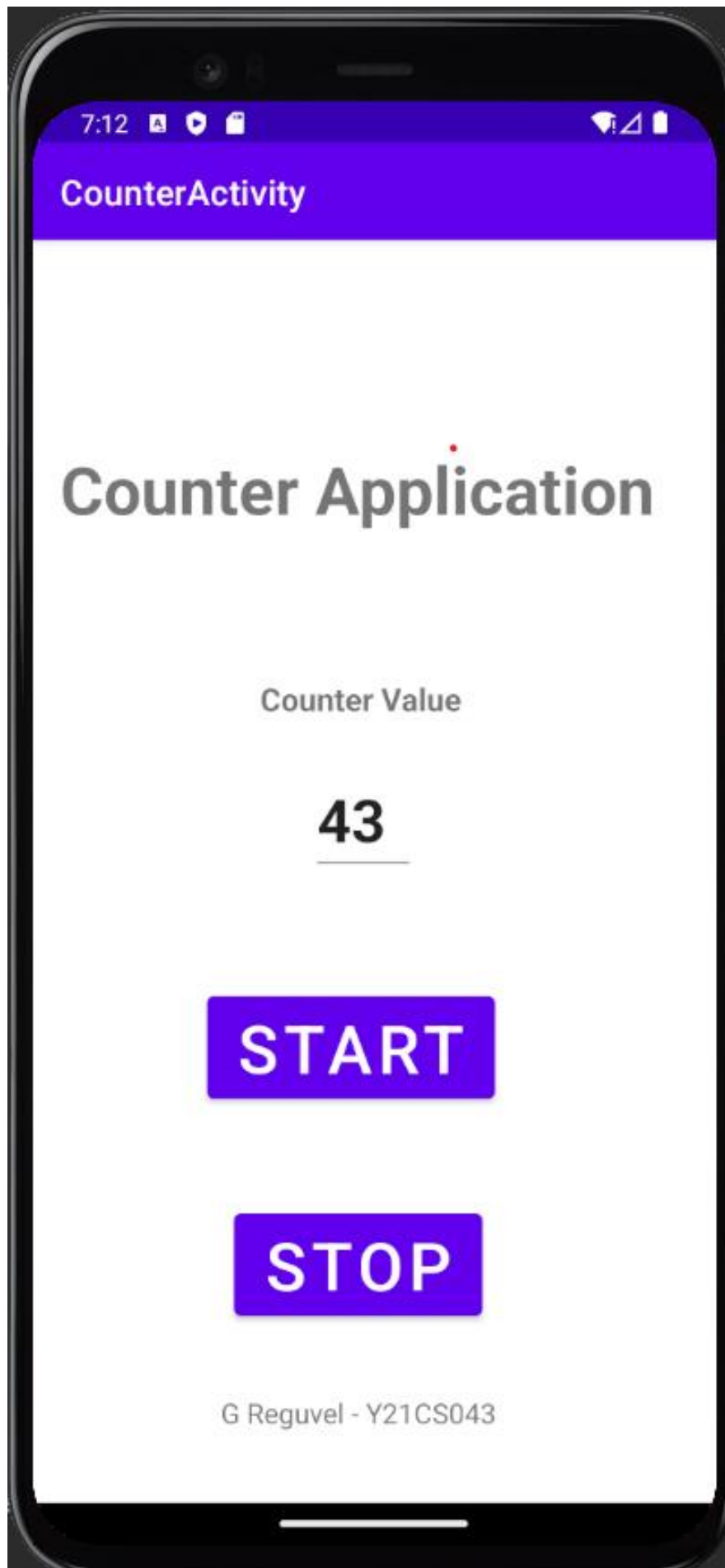
XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    tools:context=".MainActivity">
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="126dp"
    android:layout_marginRight="126dp"
    android:layout_marginBottom="41dp"
    android:text="G Reguvel - Y21CS043"
    android:textSize="16sp" />
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView2"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="35dp"
    android:layout_marginRight="35dp"
    android:layout_marginBottom="83dp"
    android:text="Counter Application"
    android:textSize="38dp"
    android:textStyle="bold" />
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/editText1"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="146dp"
    android:layout_marginRight="146dp"
    android:layout_marginBottom="24dp"
    android:text="Counter Value"
    android:textSize="18sp"
    android:textStyle="bold" />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView3"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="134dp"
    android:layout_marginRight="134dp"
    android:layout_marginBottom="39dp"
    android:text="Stop"
    android:textSize="38dp" />
<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/button2"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="127dp"
```

```xml
        android:layout_marginRight="127dp"
        android:layout_marginBottom="54dp"
        android:text="Start"
        android:textSize="38dp" />
<EditText
        android:id="@+id/editText1"
        android:layout_width="61dp"
        android:layout_height="wrap_content"
        android:layout_above="@+id/button1"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginEnd="172dp"
        android:layout_marginRight="172dp"
        android:layout_marginBottom="62dp"
        android:ems="10"
        android:hint="Counter Value"
        android:inputType="textPersonName"
        android:text="43"
        android:textSize="34sp"
        android:textStyle="bold" />
</RelativeLayout>
```

JAVA Code:

```java
package com.example.counteractivity;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Handler;
import android.text.Editable;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    TextView txtCounter;
    EditText value;
    Button btn_start,btn_stop;
    int count=0;
    Handler customHandler=new Handler();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txtCounter= (TextView)findViewById(R.id.textView2);
        value= (EditText)findViewById(R.id.editText1);
        btn_start =(Button)findViewById(R.id.button1);
        btn_stop=(Button)findViewById(R.id.button1);
        btn_start.setOnClickListener(new View.OnClickListener() { @Override public void onClick(View v) {
            customHandler.postDelayed(updateTimerThread,0); } });
        btn_stop.setOnClickListener(new View.OnClickListener() {
            @Override public void onClick(View v) {
                customHandler.removeCallbacks(updateTimerThread); } });}
    private final Runnable updateTimerThread =new Runnable() {
        @Override
        public void run() {
            txtCounter.setText(""+count);
            value.setText(""+count);
            customHandler.postDelayed(this,1000);
            count++;}};
}
```

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7.Aim:

Develop a simple application with one EditText so that the user can write some text in it.Create a button called "Convert Text to Speech" that converts the user input text into voice.
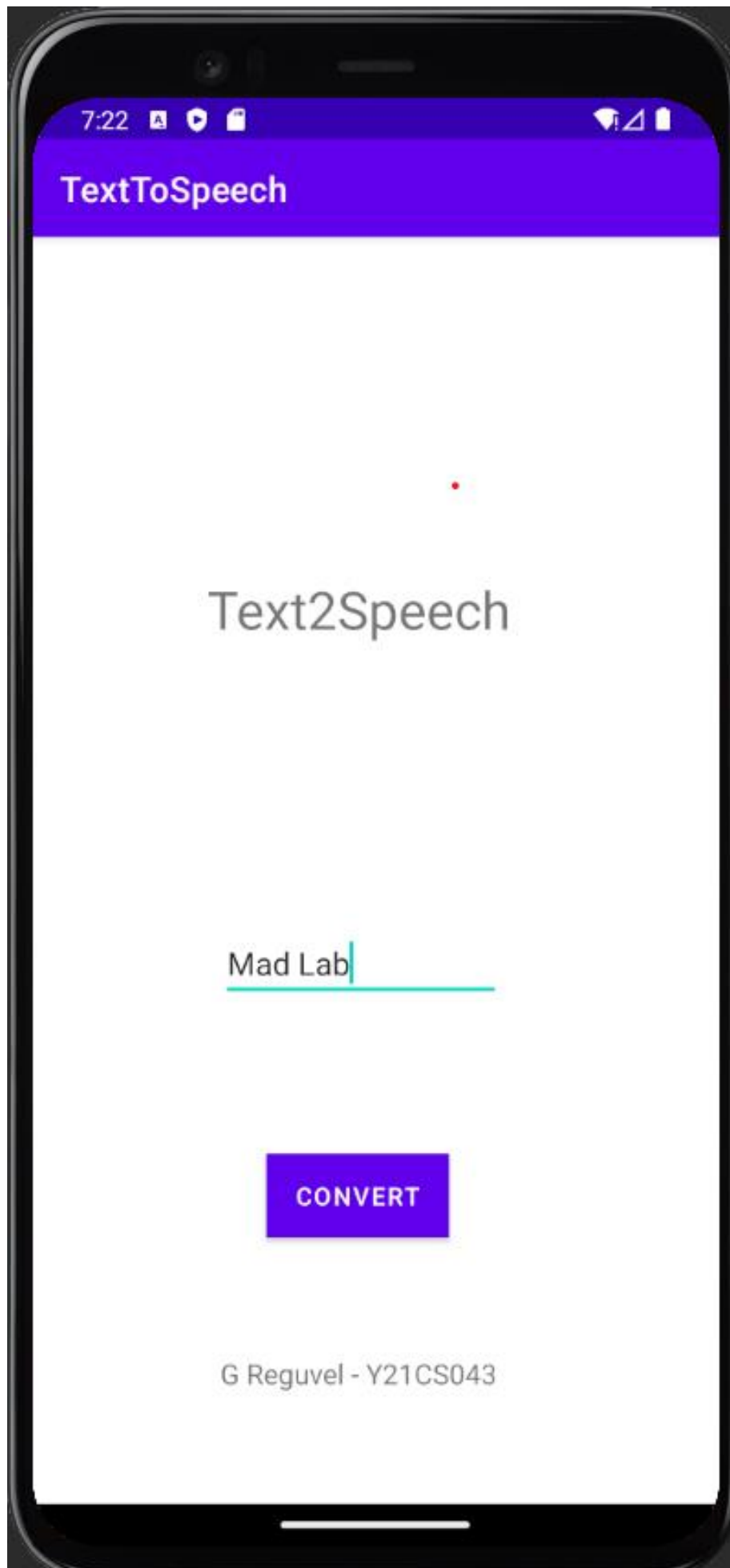
XML Code:
```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
            tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="335dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="21dp"
        android:layout_marginBottom="486dp"
        android:text="Text2Speech"
        android:textSize="30sp" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:hint="Enter text here"
        android:inputType="textPersonName" />
    <Button
        android:id="@+id/convert"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="196dp"
        android:layout_marginBottom="236dp"
        android:onClick="convert"
        android:background="#6CEC71"
        android:text="CONVERT" />
</RelativeLayout>
```

JAVA Code:
```java
package com.example.texttospeech;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.EditText;
import java.util.Locale;
public class MainActivity extends AppCompatActivity {
    EditText e1;
    TextToSpeech t1;
@Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1 = findViewById(R.id.editText);
        t1 = new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener() {
            @Override
            public void onInit(int status) {
if (status != TextToSpeech.ERROR) {
                t1.setLanguage(Locale.UK);
            }}});
    }

    public void convert(View V) {
        String tospeak = e1.getText().toString();
        t1.speak(tospeak, TextToSpeech.QUEUE_FLUSH, null);
    }}
```

8. Create an activity like a phone dialer with CALL and SAVE buttons. On pressing the CALL button, it must call the phone number and on pressing the SAVE button it must save the number to the phone contacts.

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/Button11"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:backgroundTint="#4CAF50"
    tools:context=".MainActivity">
<Button
    android:id="@+id/button8"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="173dp"
    android:layout_marginBottom="374dp"
    android:backgroundTint="#4CAF50"
    android:onClick="inputNumber"
    android:text="8" />
<Button
    android:id="@+id/Button10"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="299dp"
    android:layout_marginBottom="309dp"
    android:backgroundTint="#4CAF50"
    android:onClick="inputNumber"
    android:text="*" />
<Button
    android:id="@+id/saveBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="98dp"
    android:layout_marginBottom="198dp"
    android:backgroundTint="#CDDC39"
    android:text="Save" />
<Button
    android:id="@+id/callBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="230dp"
    android:layout_marginBottom="200dp"
    android:backgroundTint="#F44336"
    android:text="Call" />
<Button
    android:id="@+id/clearBtn12"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="174dp"
    android:layout_marginBottom="310dp"
    android:backgroundTint="#4CAF50"
    android:onClick="inputNumber"
    android:text="0" />
<Button
    android:id="@+id/Button7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
```

```
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="299dp"
        android:layout_marginBottom="378dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="7" />
<Button
        android:id="@+id/Button9"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="53dp"
        android:layout_marginBottom="375dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="9" />
<EditText
        android:id="@+id/phoneNumberEditText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="170dp"
        android:layout_marginBottom="618dp"
        android:ems="10"
        android:hint="Phone Number"
        android:inputType="phone"
        android:onClick="inputNumber" />
<Button
        android:id="@+id/clearBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="43dp"
        android:layout_marginBottom="616dp"
        android:backgroundTint="#E91E63"
        android:text="Clear" />
<Button
        android:id="@+id/Button12"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="54dp"
        android:layout_marginBottom="307dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="#" />
<Button
        android:id="@+id/Button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="299dp"
        android:layout_marginBottom="515dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="1" />
<Button
        android:id="@+id/Button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="299dp"
        android:layout_marginBottom="446dp"
        android:backgroundTint="#4CAF50"
```

```
        android:onClick="inputNumber"
        android:text="4" />

     <Button
        android:id="@+id/Button5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="173dp"
        android:layout_marginBottom="445dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="5" />
<Button
        android:id="@+id/Button6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="54dp"
        android:layout_marginBottom="442dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="6" />
<Button
        android:id="@+id/Button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="173dp"
        android:layout_marginBottom="512dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="2" />
<Button
        android:id="@+id/Button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="54dp"
        android:layout_marginBottom="510dp"
        android:backgroundTint="#4CAF50"
        android:onClick="inputNumber"
        android:text="3" />
<TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="138dp"
        android:layout_marginRight="138dp"
        android:layout_marginBottom="100dp"
        android:text="G Reguvel - Y21CS043"
        android:textSize="16sp" />
</RelativeLayout>
```

JAVA Code:

```java
package com.example.callapp;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import java.net.URI;
public class MainActivity extends AppCompatActivity {
    EditText phoneNumberEditText;
    Button clearBtn,saveBtn,callBtn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        phoneNumberEditText=findViewById(R.id.phoneNumberEditText);
        clearBtn=findViewById(R.id.clearBtn);
        callBtn=findViewById(R.id.callBtn);
        saveBtn=findViewById(R.id.saveBtn);
        clearBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                phoneNumberEditText.setText("");
            }
        });
        callBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String phoneNumber=phoneNumberEditText.getText().toString();
                Intent intent= new Intent(Intent.ACTION_DIAL);
                intent.setData(Uri.parse("tel:"+phoneNumber));
                startActivity(intent);
            }
        });
        saveBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String phoneNumber=phoneNumberEditText.getText().toString();
                Intent intent=new Intent(Intent.ACTION_INSERT);
                intent.setType(ContactsContract.Contacts.CONTENT_TYPE);
                intent.putExtra(ContactsContract.Intents.Insert.PHONE,phoneNumber);
                startActivity(intent);
            }
        });
    }
    public void inputNumber(View v){
        Button btn=(Button)v;
        String digit=btn.getText().toString();
        String phoneNumber=phoneNumberEditText.getText().toString();
        phoneNumberEditText.setText(phoneNumber+digit);
    }
}
```