

K.N.S INTITUTE OF TECHNOLOGY

Department Of Computer Science and Engineering

Tirumenahalli, Yelahanka, Bengaluru, Karnataka 560064



“MOBILE APPLICATION DEVELOPMENT LAB MANUAL”

(18CSMP68)

As per VTU Revised Syllabus



PREPARED BY :

Prof. Ateeq Ahmed

Asst. Professor, Department of Computer Science & Engineering

Bengaluru, Karnataka 560064

EDIT BY:

Student. Firoj Aktar

Student, Department of Computer Science & Engineering

West Bengal, 733215

PART – A

Program-1:

Create an application to design a Visiting Card. The Visiting card should have a company logo at 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 version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@color/white"
tools:context=".MainActivity">

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="155dp"
    android:layout_marginLeft="155dp"
    android:layout_marginTop="60dp"
    android:layout_marginEnd="198dp"
    android:layout_marginRight="198dp"
    android:text="West Bengal,India"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.294"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView5" />

<TextView
```

```
android:id="@+id/txtName"
android:layout_width="154dp"
android:layout_height="63dp"
android:layout_marginStart="36dp"
android:layout_marginLeft="36dp"
android:layout_marginTop="72dp"
android:text="KNSIT"
android:textColor="#F44336"
android:textSize="48sp"
app:layout_constraintEnd_toStartOf="@+id/imageView4"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

<View

```
android:id="@+id/divider"
android:layout_width="434dp"
android:layout_height="2dp"
android:layout_marginTop="24dp"
android:background="?android:attr/listDivider"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.521"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txtName" />
```

<TextView

```
android:id="@+id/textView8"
android:layout_width="315dp"
android:layout_height="32dp"
android:layout_marginTop="32dp"
android:text="https://www.facebook.com/firojaktar7079/"
android:textColor="@color/black"
android:textSize="16sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.562"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView7"
app:layout_constraintVertical_bias="0.099" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
android:layout_marginStart="152dp"
android:layout_marginLeft="152dp"
android:layout_marginTop="44dp"
android:layout_marginEnd="201dp"
android:layout_marginRight="201dp"
android:text="FIROJ AKTAR"
android:textColor="@color/black"
android:textSize="24sp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.227"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/divider" />
```

<TextView

```
android:id="@+id/textView4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="152dp"
android:layout_marginLeft="152dp"
android:layout_marginTop="20dp"
android:layout_marginEnd="201dp"
android:layout_marginRight="201dp"
android:text="Student- CSE,6th Sem"
android:textColor="@color/black"
android:textSize="20sp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.323"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView3" />
```

<TextView

```
android:id="@+id/textView7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="155dp"
android:layout_marginLeft="155dp"
android:layout_marginTop="76dp"
android:layout_marginEnd="198dp"
android:layout_marginRight="198dp"
android:text="Email: firojaktar@gmail.com"
android:textColor="@color/black"
android:textSize="20sp"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.389"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView6" />
```

```
<ImageView
    android:id="@+id/imageView4"
    android:layout_width="101dp"
    android:layout_height="92dp"
    android:layout_marginTop="44dp"
    android:layout_marginEnd="40dp"
    android:layout_marginRight="40dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/knsit" />
```

```
<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="155dp"
    android:layout_marginLeft="155dp"
    android:layout_marginTop="44dp"
    android:layout_marginEnd="198dp"
    android:layout_marginRight="198dp"
    android:text="Ph No : 6296617079"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.333"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView4" />
```

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

❖ JAVA.CODE :

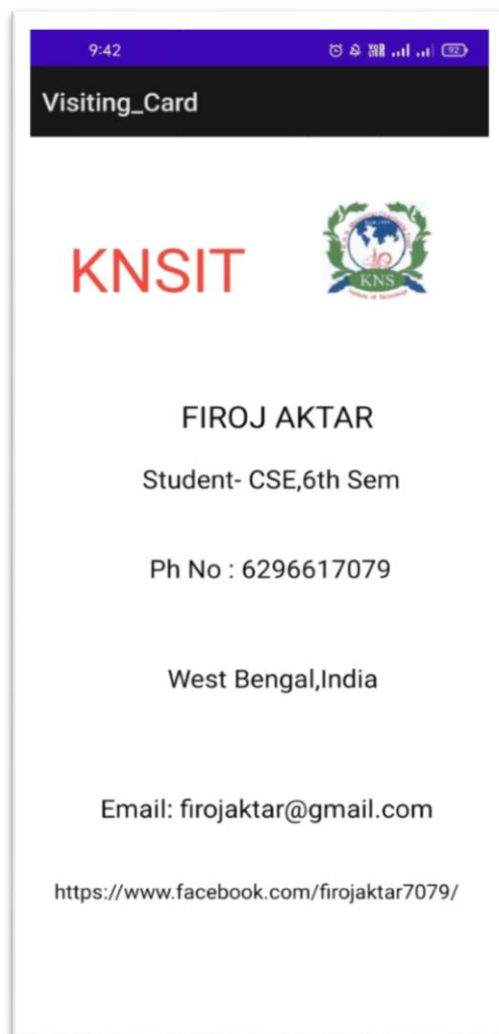
```
package com.example.visiting_card;
```

```
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);  
    }  
}
```

❖ OUTPUT :



Program-2:

Develop an Android application using controls like Button, TextView, EditText for designing a calculator having basic functionality like Addition, Subtraction, Multiplication and Division.

❖ XML –CODE:

```
<?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"
android:background="#4496BC"
android:padding="10dp">

    <TextView
        android:id="@+id/id1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SIMPLE CALCULATOR"
        android:textColor="#FFEB3B"
        android:textSize="30dp" />

    <EditText
        android:id="@+id/id2"
        android:layout_width="250dp"
        android:layout_height="50dp"
        android:layout_below="@id/id1"
        android:layout_marginTop="42dp"
        android:background="@color/white"
        android:cursorVisible="true"
        android:text=""
        android:hint="Result"
        android:textColor="#E91E63"
        android:textSize="24sp" />

    <Button
        android:id="@+id/id3"
        style="@style/Widget.AppCompat.Button.Small"
        android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id2"
android:layout_marginLeft="20dp"
android:layout_marginTop="50dp"
android:background="@color/white"
android:onClick="onClick1"
android:text="1"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id4"
android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id2"
android:layout_marginLeft="90dp"
android:layout_marginTop="50dp"
android:background="@color/white"
android:onClick="onClick2"
android:text="2"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id5"
android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id2"
android:layout_marginLeft="160dp"
android:layout_marginTop="50dp"
android:background="@color/white"
android:onClick="onClick3"
android:text="3"
android:textColor="@color/white"
```

```
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id6"
android:layout_width="50dp"
```



```
android:layout_height="50dp"
android:layout_below="@id/id3"
android:layout_marginLeft="20dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClick4"
android:text="4"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id7"
android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id3"
android:layout_marginLeft="90dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClick5"
android:text="5"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id8"
android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id3"
android:layout_marginLeft="160dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClick6"
android:text="6"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id9"
android:layout_width="50dp"
```

```
android:layout_height="50dp"
```

```
android:layout_below="@id/id6"  
android:layout_marginLeft="20dp"  
android:layout_marginTop="20dp"  
android:background="@color/white"  
android:onClick="onClick7"  
android:text="7"  
android:textAllCaps="false"  
android:textColor="@color/white"  
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id10"  
android:layout_width="50dp"  
  
android:layout_height="50dp"  
android:layout_below="@id/id7"  
android:layout_marginLeft="90dp"  
android:layout_marginTop="20dp"  
android:background="@color/white"  
android:onClick="onClick8"  
android:text="8"  
android:textColor="@color/white"  
  
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id12"  
android:layout_width="50dp"  
  
android:layout_height="50dp"  
android:layout_below="@id/id8"  
android:layout_marginLeft="160dp"  
android:layout_marginTop="20dp"  
android:background="@color/white"  
android:onClick="onClick9"  
android:text="9"  
android:textColor="@color/white"  
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id13"  
android:layout_width="50dp"
```

```
android:layout_height="50dp"
android:layout_below="@id/id9"
android:layout_marginLeft="20dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClickdot"
android:text="."
android:textColor="@color/white"
android:textSize="24sp" />
```

<Button

```
android:id="@+id/id14"
android:layout_width="50dp"

android:layout_height="50dp"
android:layout_below="@id/id10"
android:layout_marginLeft="90dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClick0"
android:text="0"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id15"
android:layout_width="50dp"

android:layout_height="50dp"
android:layout_below="@id/id12"
android:layout_marginLeft="160dp"
android:layout_marginTop="20dp"
android:background="@color/white"
android:onClick="onClickc"
android:text="C"
android:textColor="@color/white"
android:textSize="20sp" />
```

<Button

```
android:id="@+id/id16"
android:layout_width="315dp"

android:layout_height="wrap_content"
```

```
android:layout_below="@id/id14"  
android:layout_marginLeft="20dp"  
android:layout_marginTop="40dp"  
android:background="@color/white"  
android:onClick="onClickEqual"  
android:text=""  
android:textColor="@color/white"  
  
android:textSize="34sp" />
```

<Button

```
android:id="@+id/id17"  
android:layout_width="80dp"  
  
android:layout_height="50dp"  
android:layout_below="@id/id2"  
android:layout_marginLeft="250dp"  
android:layout_marginTop="50dp"  
android:background="@color/white"  
android:onClick="onClickplus"  
android:text="+"  
android:textColor="@color/white"  
android:textSize="24sp" />
```

<Button

```
android:id="@+id/id18"  
android:layout_width="80dp"  
  
android:layout_height="50dp"  
android:layout_below="@id/id3"  
android:layout_marginLeft="250dp"  
android:layout_marginTop="20dp"  
android:background="@color/white"  
android:onClick="onClickminus"  
android:text="-"  
android:textAllCaps="true"  
android:textColor="@color/white"  
android:textSize="24sp" />
```

<Button

```
android:id="@+id/id19"  
android:layout_width="80dp"
```

```

    android:layout_height="50dp"
    android:layout_below="@id/id18"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="20dp"
    android:background="@color/white"
    android:onClick="onClickmulti"
    android:text="*"
    android:textColor="@color/white"
    android:textSize="24sp" />

```

<Button

```

    android:id="@+id/id20"
    android:layout_width="80dp"

```

```

    android:layout_height="50dp"
    android:layout_below="@id/id19"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="20dp"
    android:background="@color/white"
    android:onClick="onClickdiv"
    android:text="/"
    android:textColor="@color/white"
    android:textSize="24sp" />

```

</RelativeLayout>

❖ JAVA-CODE :

```

package com.example.calculator;

```

```

import androidx.appcompat.app.AppCompatActivity;

```

```

import android.os.Bundle;

```

```

import android.view.View;

```

```

import android.widget.EditText;

```

```

public class MainActivity extends AppCompatActivity {
    EditText t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t1=(EditText)findViewById(R.id.id2);
    }
}

```

```
public void onClick1(View view) {  
    t1.setText(t1.getText() + "1");  
}
```

```
public void onClick2(View view) {  
    t1.setText(t1.getText() + "2");  
}
```

```
public void onClick3(View view) {  
    t1.setText(t1.getText() + "3");  
}
```

```
public void onClick4(View view) {  
    t1.setText(t1.getText() + "4");  
}
```

```
public void onClick5(View view) {  
    t1.setText(t1.getText() + "5");  
}
```

```
public void onClick6(View view) {  
    t1.setText(t1.getText() + "6");  
}
```

```
public void onClick7(View view) {  
    t1.setText(t1.getText() + "7");  
}
```

```
public void onClick8(View view) {  
    t1.setText(t1.getText() + "8");  
}
```

```
public void onClick9(View view) {  
    t1.setText(t1.getText() + "9");  
}
```

```
}
```

```
public void onClick0(View view) {  
    t1.setText(t1.getText() + "0");
```

```
}
```

```
public void onClickdot(View view) {  
    int i = 0;  
    boolean dot = false;
```

```
    String str = t1.getText().toString();  
    while (i < str.length()) {  
        if (str.charAt(i) != '.')  
            i++;
```

```
        else {  
            dot = true;  
            break;
```

```
    }
```

```
}
```

```
if (!dot)
```

```
    t1.setText(t1.getText() + ".");
```

```
}
```

```
public void onClickc(View view) {  
    t1.setText("");
```

```
}
```

```
public void onClickplus(View view) {  
    t1.setText(t1.getText() + "+");
```

```
}
```

```
public void onClickminus(View view) {  
    t1.setText(t1.getText() + "-");
```

```
}
```

```
public void onClickmulti(View view) {  
    t1.setText(t1.getText() + "*");  
}
```

```
public void onClickdiv(View view) {  
    t1.setText(t1.getText() + "/");  
}
```

```
public void onClickEqual(View view) {
```

```
    String str = t1.getText().toString();
```

```
    int p1 = 0, p2 = 0, res;  
    String res1, op1 = null, op2 = null;
```

```
    try {  
        if (str.contains("+")) {  
  
            String[] oprands = str.split("\\+");  
            op1 = oprands[0];  
            op2 = oprands[1];  
  
            p1 = Integer.parseInt(op1);  
            p2 = Integer.parseInt(op2);  
  
            res = p1 + p2;  
            res1 = Integer.toString(res);  
            t1.setText( res1+"" );  
        }  
        if (str.contains("-")) {  
  
            String oprands[] = str.split("-");  
            op1 = oprands[0];  
            op2 = oprands[1];  
  
            p1 = Integer.parseInt(op1);  
            p2 = Integer.parseInt(op2);  
            res = p1 - p2;  
            res1 = Integer.toString(res);
```



```

        t1.setText(res1+""");
    }
    if (str.contains("*")) {

        String oprands[] = str.split("\\*");
        op1 = oprands[0];
        op2 = oprands[1];

        p1 = Integer.parseInt(op1);
        p2 = Integer.parseInt(op2);
        res = p1 * p2;
        res1 = Integer.toString(res);
        t1.setText(res1+""");
    }
    if (str.contains("/")) {

        String oprands[] = str.split("/");
        op1 = oprands[0];
        op2 = oprands[1];

        float f1 = Float.parseFloat(op1);
        float f2 = Float.parseFloat(op2);
        float res2 = f1 / f2;
        res1 = Float.toString(res2);
        t1.setText(res1+""");
    }

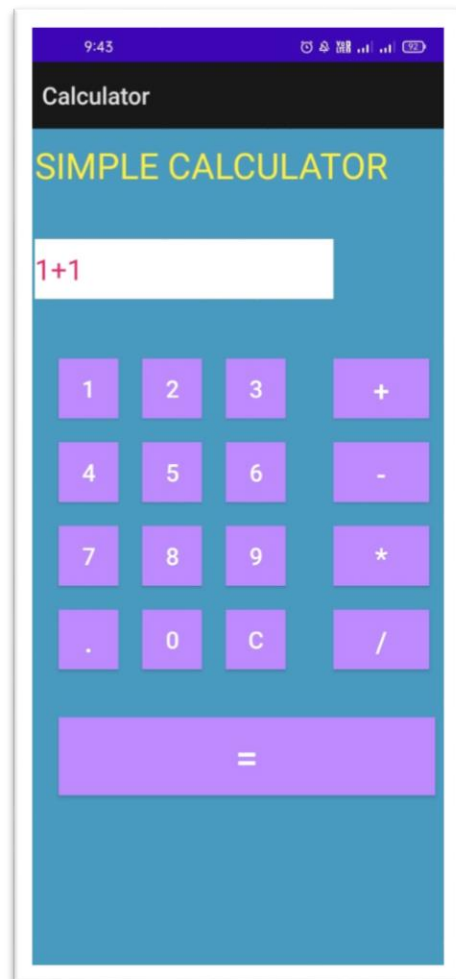
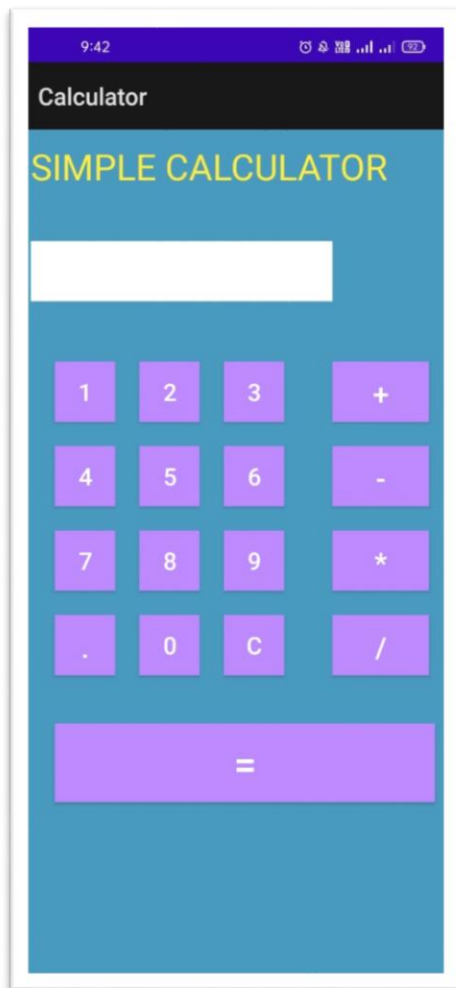
} catch (Exception e){ t1.setText("Error");}

}

}

```

❖ OUTPUT :



Program-3:

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 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 display a toast message saying “Failed Login Attempts” and disable the SIGN IN button. Use Bundle to transfer information from one activity to another.

❖ XML –CODE:

- SignUp.xml.code

```
<?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">

<EditText
    android:id="@+id/txtuser"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Username"
    android:layout_marginLeft="20dp"
    android:inputType="textPersonName"
    android:layout_marginTop="40dp"
    app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.427"  
app:layout_constraintStart_toStartOf="parent"  
tools:layout_editor_absoluteY="178dp" />
```

<EditText

```
android:hint="Enter Password"  
android:id="@+id/txtPass"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginTop="90dp"  
android:layout_marginLeft="20dp"  
android:ems="10"  
android:inputType="textPassword"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintHorizontal_bias="0.427"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/txtuser" />
```

<Button

```
android:id="@+id/bt1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginTop="150dp"  
android:layout_marginLeft="150dp"  
android:text="Sign Up"  
android:onClick="PasswordValidator"  
app:layout_constraintBottom_toBottomOf="parent"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintHorizontal_bias="0.447"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/txtPass"  
app:layout_constraintVertical_bias="0.181" />
```

<TextView

```
android:id="@+id/textView2"  
android:layout_width="117dp"  
android:layout_height="35dp"  
android:text="SIGN UP"  
android:textSize="24sp"  
android:layout_marginLeft="20dp"  
tools:layout_editor_absoluteX="141dp"  
tools:layout_editor_absoluteY="46dp" />
```

</RelativeLayout>

- LogIn.xml.code:

```
<?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=".login">
<EditText
    android:id="@+id/txtuser"
    android:hint="Username"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp"
    android:layout_marginLeft="20dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.427"
    app:layout_constraintStart_toStartOf="parent"
    tools:layout_editor_absoluteY="178dp" />

<EditText
    android:id="@+id/txtPass"
    android:hint="Password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="90dp"
    android:layout_marginLeft="20dp"
    android:ems="10"
    android:inputType="textPassword"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.427"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txtuser" />

<Button
    android:id="@+id/bt1"
    android:layout_width="wrap_content"
```

```

    android:layout_height="wrap_content"
    android:layout_marginTop="150dp"
    android:text="Login"
    android:onClick="next"
    android:layout_marginLeft="150dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.447"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txtPass"
    app:layout_constraintVertical_bias="0.181" />

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="117dp"
    android:layout_height="35dp"
    android:text="Login"
    android:layout_marginLeft="20dp"
    android:textSize="24sp"
    tools:layout_editor_absoluteX="141dp"
    tools:layout_editor_absoluteY="46dp" />
</RelativeLayout>

```

❖ JAVA.CODE :

- MainActivity.Java.Code :

```

package com.example.signup;
import androidx.appcompat.app.AppCompatActivity;

```

```

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

```

```

import java.util.regex.Matcher;
import java.util.regex.Pattern;

```

```

public class MainActivity extends AppCompatActivity {
    EditText t1,t2;

```

@Override

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    t1= findViewById(R.id.txtuser);
    t2= (EditText)findViewById(R.id.txtPass);

}

public void PasswordValidator(View view) {

    //digit + lowercase char + uppercase char + punctuation + symbol
    final String PASSWORD_PATTERN = "^(?=.*[0-9])(?=.*[a-
z])(?=.*[A-Z])(?=.*[!@#&()-[{]};';?/*~$^+=<>]).{8,20}$";
    final Pattern pattern = Pattern.compile(PASSWORD_PATTERN);
    String xuname=t1.getText().toString();
    String xpswd=t2.getText().toString();
    Matcher matcher = pattern.matcher(xpswd);
    if (matcher.matches())
    {

        Intent intent = new Intent(getApplicationContext(),login.class);
        intent.putExtra("uname",xuname);
        intent.putExtra("pswd",xpswd);
        startActivity(intent );

    }
    else
        Toast.makeText(getApplicationContext(),"invalid
password",Toast.LENGTH_SHORT).show();
    }

}

```

- Login.Java.Code :

```

package com.example.signup;
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 login extends AppCompatActivity {

    int count = 2;
    EditText xu, xp;
    Button xb;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        xu = findViewById(R.id.txtuser);
        xp = findViewById(R.id.txtPass);
        xb = findViewById(R.id.bt1);

    }

    public void next(View view) {

        Intent intent = this.getIntent();

        String str = intent.getStringExtra("uname");
        String pass = intent.getStringExtra("pswd");
        if ((xu.getText().toString().equals(str)) &&
            (xp.getText().toString().equals(pass)))
            Toast.makeText(getApplicationContext(), "Login Success",
                Toast.LENGTH_LONG).show();
        else {
            if (count != 0) {
                Toast.makeText(getApplicationContext(), "Login Fail",
                    Toast.LENGTH_SHORT).show();
                count--;
            } else {
                Toast.makeText(getApplicationContext(), "You

```



```

exceededLoginAttempts", Toast.LENGTH_SHORT).show();
        xb.setEnabled(false);
    }

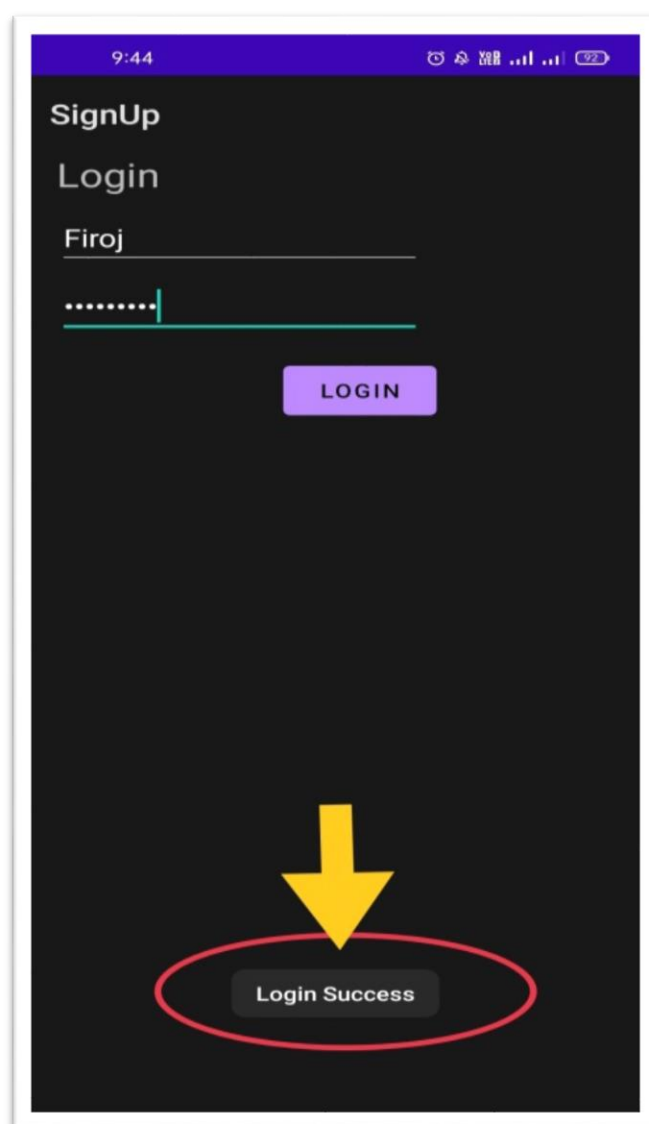
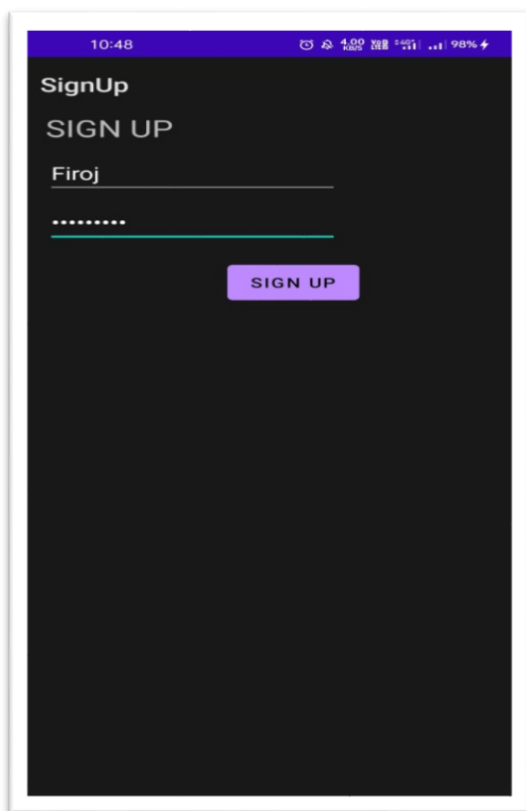
}

}

}

```

❖ OUTPUT :



Program-4:

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 version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/text1"
        android:layout_width="219dp"
        android:layout_height="39dp"
        android:text="@string/wallpaper_changer"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.069" />

    <Button
        android:id="@+id/button"
        android:layout_width="266dp"
        android:layout_height="58dp"
        android:text="@string/click_to_change_wallpaper"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.222" />

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

❖ JAVA.CODE :

```
package com.example.picchange;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import androidx.core.content.res.ResourcesCompat;
```

```
import android.app.WallpaperManager;
```

```
import android.graphics.Bitmap;
```

```
import android.graphics.drawable.BitmapDrawable;
```

```
import android.graphics.drawable.Drawable;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import java.io.IOException;
```

```
import java.util.Timer;
```

```
import java.util.TimerTask;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    Button wall;
```

```
    Timer tim;
```

```
    Drawable drawable;
```

```
    WallpaperManager wlp;
```

```
    int prev=1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

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

```
        tim = new Timer();
```

```
        wlp = WallpaperManager.getInstance(this);
```

```
        wall = findViewById(R.id.button);
```

```
        wall.setOnClickListener(new View.OnClickListener() { @Override public
```

```
void onClick(View view) {
```

```
            setWallpaper();
```

```
        }
```

```
    });
```

```
}
```

```
private void setWallpaper() {
```

```
    tim.schedule(new TimerTask() {
```

```
        @Override
```

```

public void run() {
    if(prev==1) {

        drawable = getResources().getDrawable(R.drawable.one);

        prev = 2;

    }

    else if(prev==2) {

        drawable = getResources().getDrawable(R.drawable.two);

        prev=3;

    }

        else if (prev==3) {

            drawable =
getResources().getDrawable(R.drawable.three);
            prev=4;

        }

        else if (prev==4) {

            drawable =
getResources().getDrawable(R.drawable.four);

            prev=5;

        }

        else if (prev==5) {

            drawable =
getResources().getDrawable(R.drawable.five);

            prev = 6;

        }
        else if (prev==6) {

```

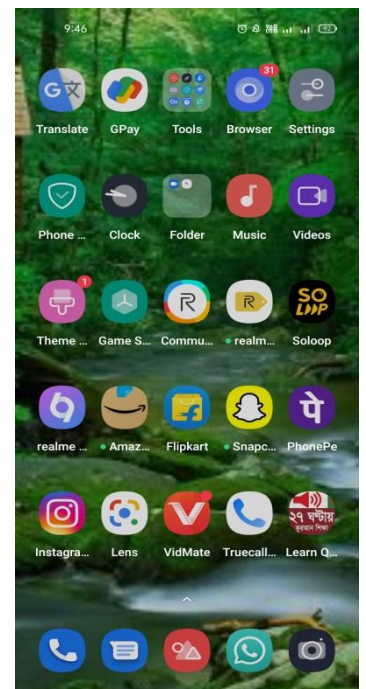
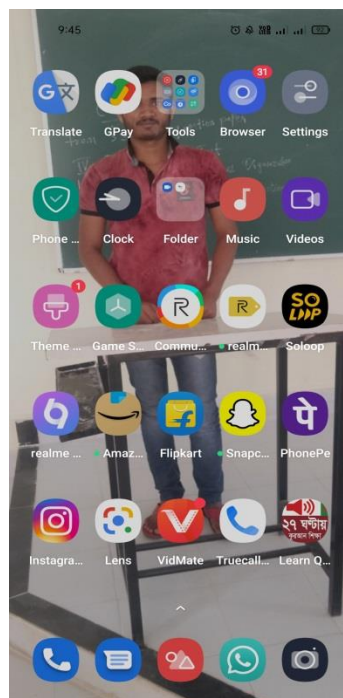
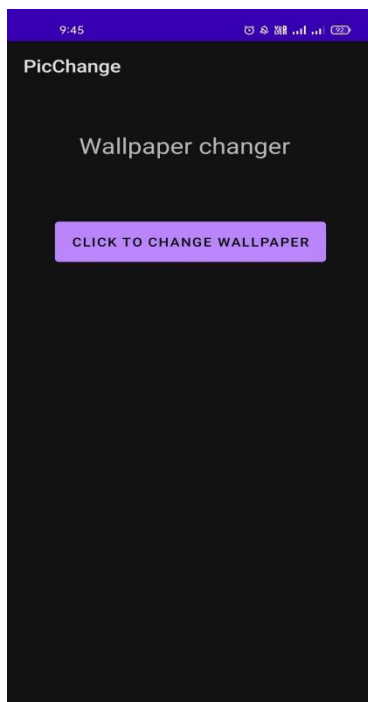
```

        drawable =
getResources().getDrawable(R.drawable.six);
        prev = 1;

    }
    Bitmap wallpaper =
((BitmapDrawable) drawable).getBitmap(); try {
        wlp.setImageBitmap(wallpaper);
    } catch (IOException e) {
        e.printStackTrace();
    }
    }
    }, 0, 30000);
}
}
}

```

❖ OUTPUT :



Program-5:

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 version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```
<TextView
    android:id="@+id/view1"
    android:layout_width="341dp"
    android:layout_height="39dp"
    android:text="COUNTER APPLICATION"
    android:textColor="#1CE124"
    android:textSize="30sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.098" />
```

```
<TextView
    android:id="@+id/out"
    android:layout_width="179dp"
    android:layout_height="64dp"
    android:layout_marginTop="68dp"
    android:background="#786C7A"
    android:textColor="#D33D0D"
    android:textSize="34sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/view1" />
```

<Button

```
    android:id="@+id/startbut"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="12dp"
    android:onClick="start"
    android:text="@string/start"
    android:textColor="#5BDA16"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/stopbut"
    app:layout_constraintHorizontal_bias="1.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="@+id/stopbut"
    app:layout_constraintVertical_bias="0.0" />
```

<Button

```
    android:id="@+id/stopbut"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="12dp"
    android:onClick="stop"
    android:text="@string/stop"
    android:textColor="#F44336"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/btm3"
    app:layout_constraintTop_toTopOf="@+id/btm3"
    app:layout_constraintVertical_bias="0.0" />
```

<Button

```
    android:id="@+id/btm3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="25dp"
    android:onClick="reset"
    android:text="@string/reset"
    android:textColor="#EDD70F"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/out"
```

```
        app:layout_constraintVertical_bias="0.237" />

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

❖ JAVA.CODE :

```
package com.example.counter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.os.Handler;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    Button btnstart, btnstop;

    TextView txtcounter;

    int i = 1;

    Handler customHandler = new Handler();

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        txtcounter = findViewById(R.id.out);

    }
```



```
public void start (View view){
```

```
    customHandler.postDelayed(updateTimerThread, 0);
```

```
}
```

```
public void stop (View view){
```

```
    customHandler.removeCallbacks(updateTimerThread);
```

```
}
```

```
public void reset (View view)
```

```
{
```

```
    i = 0;
```

```
    txtcounter.setText('' + i);
```

```
}
```

```
private final Runnable updateTimerThread = new Runnable() {
```

```
    public void run() {
```

```
        txtcounter.setText('' + i);
```

```
        customHandler.postDelayed(this, 1000);
```

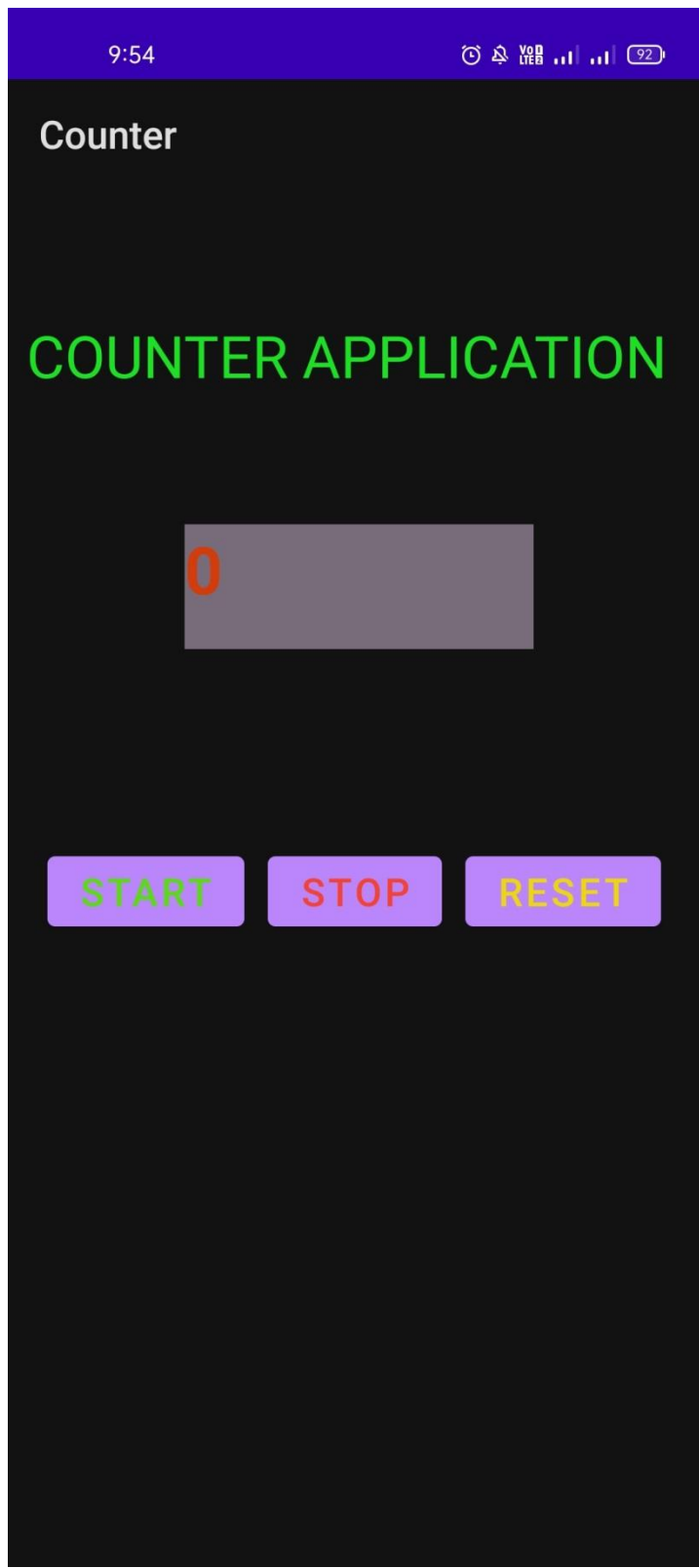
```
        i++;
```

```
    }
```

```
};
```

```
}
```

❖ OUTPUT :



Program-6:

Create two files of XML and JSON type with values for City_Name, Latitude, Longitude, Temperature and Humidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side.

❖ **XML –CODE:**

❖ **JAVA.CODE :**

❖ **OUTPUT :**

Program-7:

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 version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="349dp"
        android:layout_height="32dp"
        android:layout_marginTop="72dp"
        android:text="TEXT TO SPEECH APPLICATION"
        android:textColor="#E91E63"
        android:textSize="24sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="275dp"
        android:layout_height="50dp"
        android:layout_marginTop="96dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.227"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <Button
        android:id="@+id/convert"
```

```

    android:layout_width="290dp"
    android:layout_height="62dp"
    android:layout_marginTop="76dp"
    android:text="Convert Text To Speech"
    android:onClick="convert"
    android:textSize="16sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.472"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editText"
    app:layout_constraintVertical_bias="0.095"
    tools:ignore="OnClick,UsingOnClickInXml" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

❖ JAVA.CODE :

```

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 android.widget.Toast;

import java.util.Locale;

public class MainActivity extends AppCompatActivity {

    TextToSpeech t1;

    EditText e1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

```

```

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

e1 = (EditText)findViewById(R.id.editText);
t1 = new TextToSpeech(getApplicationContext(), new
    TextToSpeech.OnInitListener() {

        public void onInit(int status) {
            if (status!=TextToSpeech.ERROR){

                t1.setLanguage(Locale.UK);

            }

        }

    });
}

public void convert(View view){

    String tospeak = e1.getText().toString();

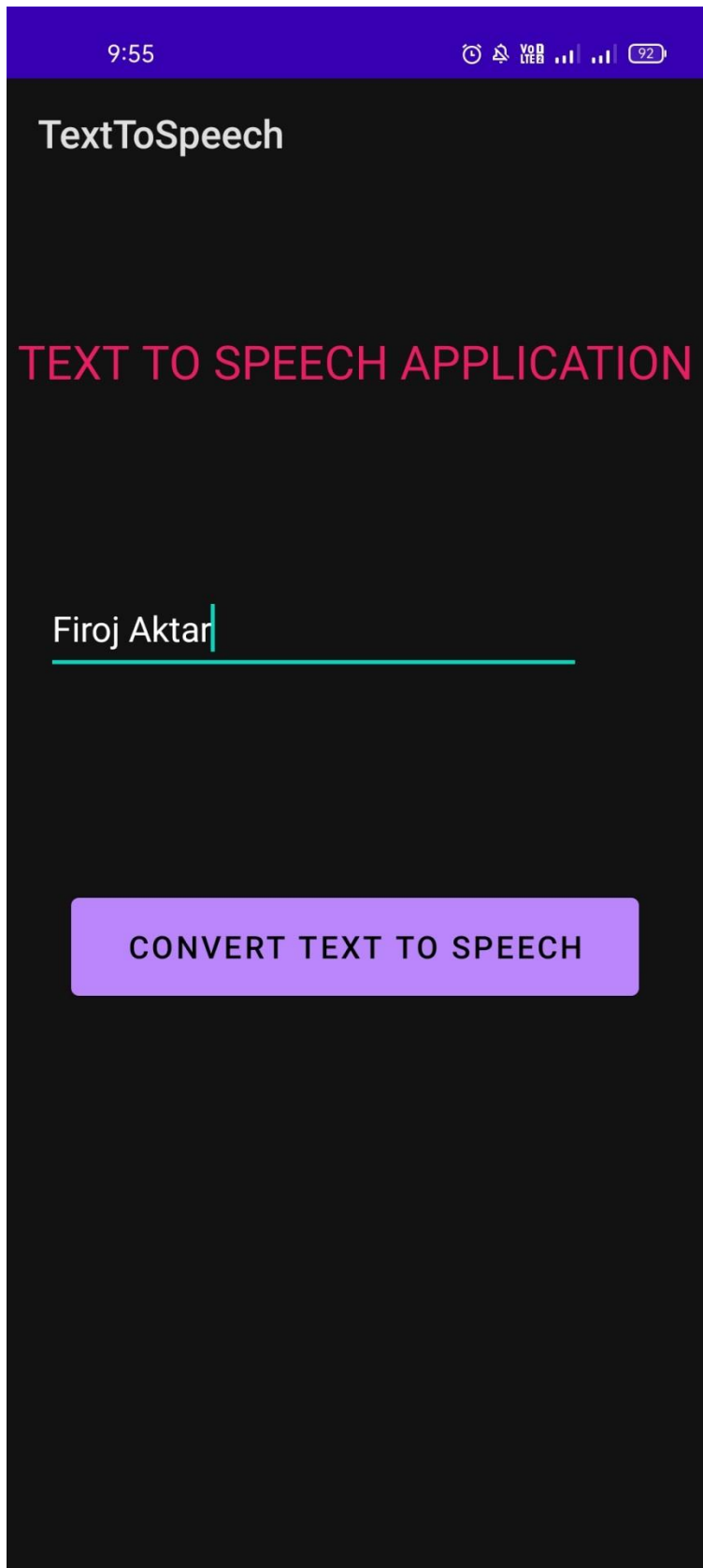
    t1.speak(tospeak,TextToSpeech.QUEUE_FLUSH,null);

}

}

```

❖ OUTPUT :



Program-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:**

❖ **JAVA.CODE :**

❖ **OUTPUT :**