

## **Program1**

### **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"
    android:background="#FFFFFF"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView4"
        android:layout_width="371dp"
        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="28dp"
        android:layout_marginLeft="28dp"
        android:layout_marginEnd="12dp"
        android:layout_marginRight="12dp"
        android:layout_marginBottom="219dp"
        android:text="Address:ASKB Campus, Anandnagar, | Bangalore - 560 024"
        android:textAlignment="center"
        android:textSize="24sp" />
    <TextView
        android:id="@+id/textView5"
        android:layout_width="250dp"
        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="87dp"
        android:layout_marginLeft="87dp"
        android:layout_marginEnd="73dp"
        android:layout_marginRight="73dp"
```

```
android:layout_marginBottom="157dp"
android:text="Ph No: 9108380566"
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="25dp"
android:layout_marginLeft="25dp"
android:layout_marginEnd="19dp"
android:layout_marginRight="19dp"
android:layout_marginBottom="64dp"
android:text="Email Id: uzma.sulthana@atria.edu"
android:textAlignment="center"
android:textSize="24sp" />
<TextView
android:id="@+id/textView3"
android:layout_width="367dp"
android:layout_height="66dp"
android:layout_alignParentStart="true"
android:layout_alignParentLeft="true"
android:layout_alignParentEnd="true"
android:layout_alignParentRight="true"
android:layout_alignParentBottom="true"
android:layout_marginStart="32dp"
android:layout_marginLeft="32dp"
android:layout_marginEnd="12dp"
android:layout_marginRight="12dp"
android:layout_marginBottom="287dp"
android:text="Assistant Professor-ISE"
android:textAlignment="center"
android:textSize="24sp" />
<ImageView
android:id="@+id/imageView3"
android:layout_width="155dp"
android:layout_height="98dp"
android:layout_alignParentEnd="true"
```

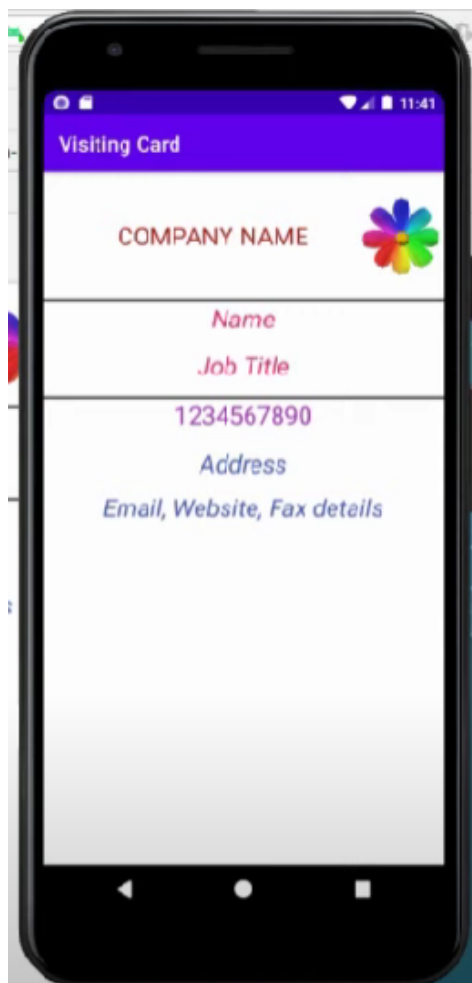
```
android:layout_alignParentRight="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="12dp"
android:layout_marginRight="12dp"
android:layout_marginBottom="495dp"
app:srcCompat="@drawable/aitlogo" />
<View
android:id="@+id/view"
android:layout_width="wrap_content"
android:layout_height="4dp"
android:layout_alignParentBottom="true"
android:layout_marginBottom="487dp"
android:background="#4444" />
<TextView
android:id="@+id/textView2"
android:layout_width="176dp"
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="95dp"
android:layout_marginLeft="95dp"
android:layout_marginEnd="140dp"
android:layout_marginRight="140dp"
android:layout_marginBottom="401dp"
android:text="Uzma Sulthana"
android:textAlignment="center"
android:textSize="24sp"
android:textStyle="bold" />
<TextView
android:id="@+id/textView7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentBottom="true"
android:layout_marginEnd="99dp"
android:layout_marginRight="99dp"
android:layout_marginBottom="495dp"
android:layout_toStartOf="@+id/imageView3"
android:layout_toLeftOf="@+id/imageView3"
android:text="AIT"
android:textColor="#E91E63"
```

```
android:textSize="36sp" android:textStyle="bold" />
```

## JAVA-CODE

```
package com.example.visitingcardapplication;  
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:**

### **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">
    <TextView
        android:layout_width="209dp"
        android:layout_height="60dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="108dp"
        android:layout_marginRight="108dp"
        android:layout_marginBottom="530dp"
        android:text="Simple Calci"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/editText2"
        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="115dp"
        android:layout_marginRight="115dp"
        android:layout_marginBottom="364dp"
        android:ems="10"
        android:hint="Enter the Number 2"
        android:inputType="textPersonName"
        android:text=""
        android:textColorHighlight="#FFFFFF" />
    <EditText
```

```
android:id="@+id/editText1"
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="110dp"
android:layout_marginRight="110dp"
android:layout_marginBottom="439dp"
android:ems="10"
android:hint="Enter the Number 1"
android:inputType="textPersonName"
android:text=""
android:textColorHighlight="#FFFFFF" />
<Button
android:id="@+id/button"
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="260dp"
android:layout_marginRight="260dp"
android:layout_marginBottom="175dp"
android:text="ADD"
android:textStyle="bold"
android:onClick="add"
app:backgroundTint="#E8F381" />
<Button
android:id="@+id/button3"
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="266dp"
android:layout_marginRight="266dp"
android:layout_marginBottom="61dp"
android:text="MUL"
android:onClick="mul"
app:backgroundTint="#A1FAA4" />
<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="108dp"
        android:layout_marginRight="108dp"
        android:layout_marginBottom="63dp"
        android:text="DIV"
        android:onClick="div"
        app:backgroundTint="#E6C28C" />
<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="105dp"
    android:layout_marginRight="105dp"
    android:layout_marginBottom="182dp"
    android:text="SUB"
    android:onClick="sub"
    app:backgroundTint="#ECA9A9" />

<TextView
    android:id="@+id/tv1"
    android:layout_width="86dp"
    android:layout_height="61dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="202dp"
    android:layout_marginRight="202dp"
    android:layout_marginBottom="274dp"
    android:text="0"
    android:textSize="36sp" />
</RelativeLayout>

```

## JAVA-CODE

### JAVA-Code

```

package com.example.simplecalculator;
import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle;
import android.view.View;

```

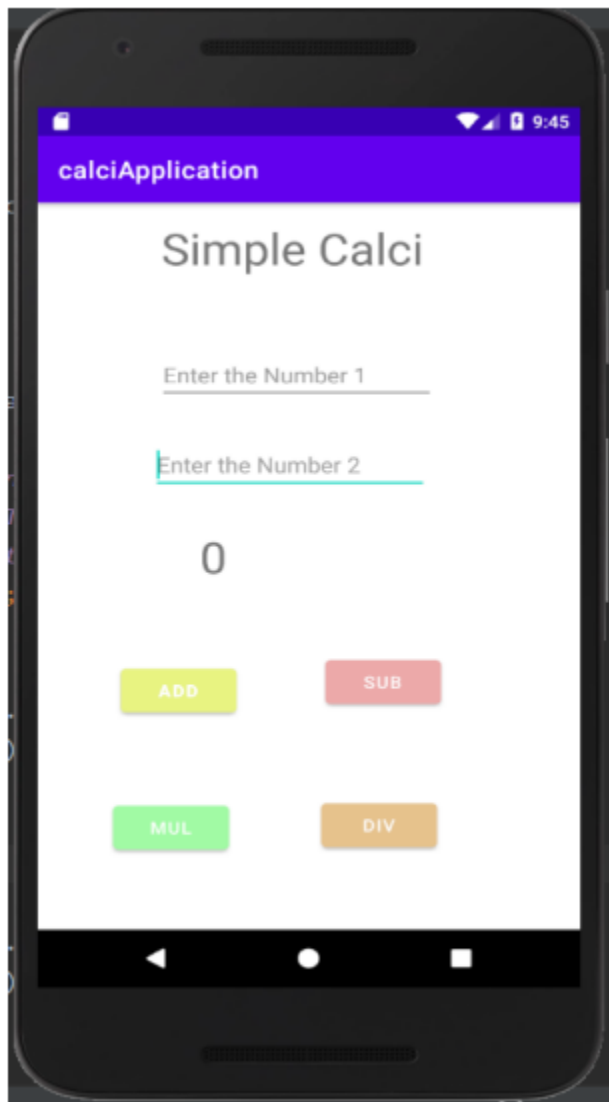
```

import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity { EditText e1,e2;
TextView Total;
@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); Total=(TextView)findViewById(R.id.result); }
public void add(View V)
{ int a1=Integer.parseInt(e1.getText().toString()); int a2=Integer.parseInt(e2.getText().toString());
// Converting String from EditText to Integer int Total =a1+a2;
tv.setText(""+Total);
}
public void sub(View V)
{ int a1=Integer.parseInt(e1.getText().toString()); int a2=Integer.parseInt(e2.getText().toString());
int Total =a1-a2;
tv.setText(""+Total);
}
public void mul(View V)
{ int a1=Integer.parseInt(e1.getText().toString()); int a2=Integer.parseInt(e2.getText().toString());
int Total =a1*a2;
tv.setText(""+Total); }
public void div(View V)
{
int a1=Integer.parseInt(e1.getText().toString());
int a2=Integer.parseInt(e2.getText().toString());
double Total =(double)(a1/a2);
tv.setText(""+Total);
}
}

```



## Output



### Program 3:

#### 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">
    <TextView
        android:layout_width="129dp"
        android:layout_height="45dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="168dp"
        android:layout_marginRight="168dp"
        android:layout_marginBottom="596dp"
        android:text="Sign Up"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/SignUp_email"
        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="114dp"
        android:layout_marginRight="114dp"
        android:layout_marginBottom="464dp"
        android:ems="10"
        android:hint="EmailId"
        android:inputType="textPersonName" />
    <Button
        android:id="@+id/signUpBtn"
```

```

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="168dp"
android:layout_marginRight="168dp"
android:layout_marginBottom="245dp"
android:text="Sign Up" />
<EditText
android:id="@+id/SignUp_Password"
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="101dp"
android:layout_marginRight="101dp"
android:layout_marginBottom="385dp"
android:ems="10"
android:hint="Password"
android:inputType="textPassword" />
</RelativeLayout>

```

### Java part of Main activity(Signup) program SIGNUP and LOGIN

```

package com.example.signupandloginin;
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.Matcher;
import java.util.regex.Pattern;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
    EditText Signup_Username, Signup_Password;
    Button btnSignup;
    String regularExpression="^(?=.*[A-Z])(?=.*[a-z])(?=.*\\d)(?=.*[@$!])[A-Za-z\\d@$!]{8,}$";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}

```

```

Signup_Username=(EditText)findViewById(R.id.txt_username);
Signup_Password=(EditText)findViewById(R.id.txt_password);
btnSignup=(Button)findViewById(R.id.btn_signup);
btnSignup.setOnClickListener(this);
}
@Override
public void onClick(View v) {
String username=Signup_Username.getText().toString();
String password=Signup_Password.getText().toString();
if(validatePassword(password)){
Toast.makeText(getBaseContext(),"Valid Password", Toast.LENGTH_LONG).show();
Bundle bundle=new Bundle();
bundle.putString("User",username);
bundle.putString("Pwd",password);
Intent it=new Intent(this,Login.class);
it.putExtra("data",bundle);
startActivity(it);
} else
{
Toast.makeText(getBaseContext(),"Invalid Password",Toast.LENGTH_LONG).show();
}
}
private boolean validatePassword(String password) {
Pattern pattern=Pattern.compile(regularExpression);
Matcher matcher=pattern.matcher(password);
return matcher.matches();
}
}

```

### **Java part of Login activity (SIGNUP and LOGIN)**

```

package com.example.signupandloginin;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class Login extends AppCompatActivity implements View.OnClickListener {
    EditText LoginUsername, LoginPassword;
    Button btnLogin;
    String user, pass;
    int count=0;
    @Override

```

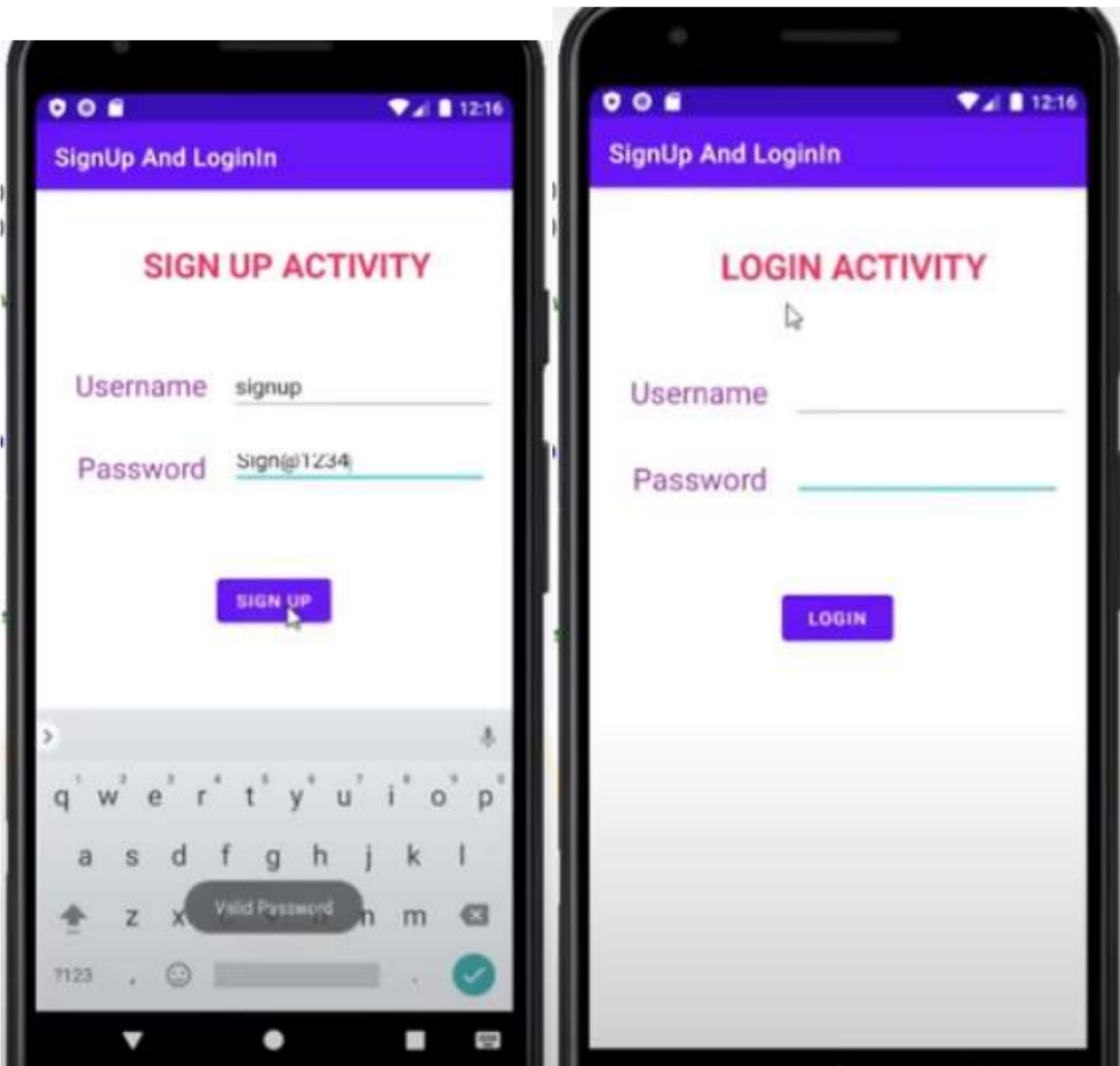
```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_login);
    LoginUsername=(EditText)findViewById(R.id.login_username);
    LoginPassword=(EditText)findViewById(R.id.login_password);
    btnLogin=(Button)findViewById(R.id.btn_login);
    btnLogin.setOnClickListener(this);
    Bundle bundle=getIntent().getBundleExtra("data");
    user=bundle.getString("User");
    pass=bundle.getString("Pwd");
}

@Override
public void onClick(View v) {
    String user1=LoginUsername.getText().toString();
    String pass1=LoginPassword.getText().toString();
    if(user.equals(user1)&& pass.equals(pass1))
    {
        Toast.makeText(this,"Login Successful",Toast.LENGTH_LONG).show();
    }
    else
    {
        count++;
        if(count==3){
            btnLogin.setEnabled(false);
            Toast.makeText(this,"Failed Login Attempts",Toast.LENGTH_LONG).show();
        }
        else
        {
            Toast.makeText(this,"Login Failed" +count,Toast.LENGTH_LONG).show();
        }
    }
}
}

```

Output



## Program 4

### XML PART

```
<?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">
<Button
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Click Here"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<TextView
android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="WALL PAPER"
android:textColor="#7E0E0E"
android:textSize="24sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.45"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.144" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

### JAVA PART

```
package com.example.prog4;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.app.WallpaperManager;
```

```

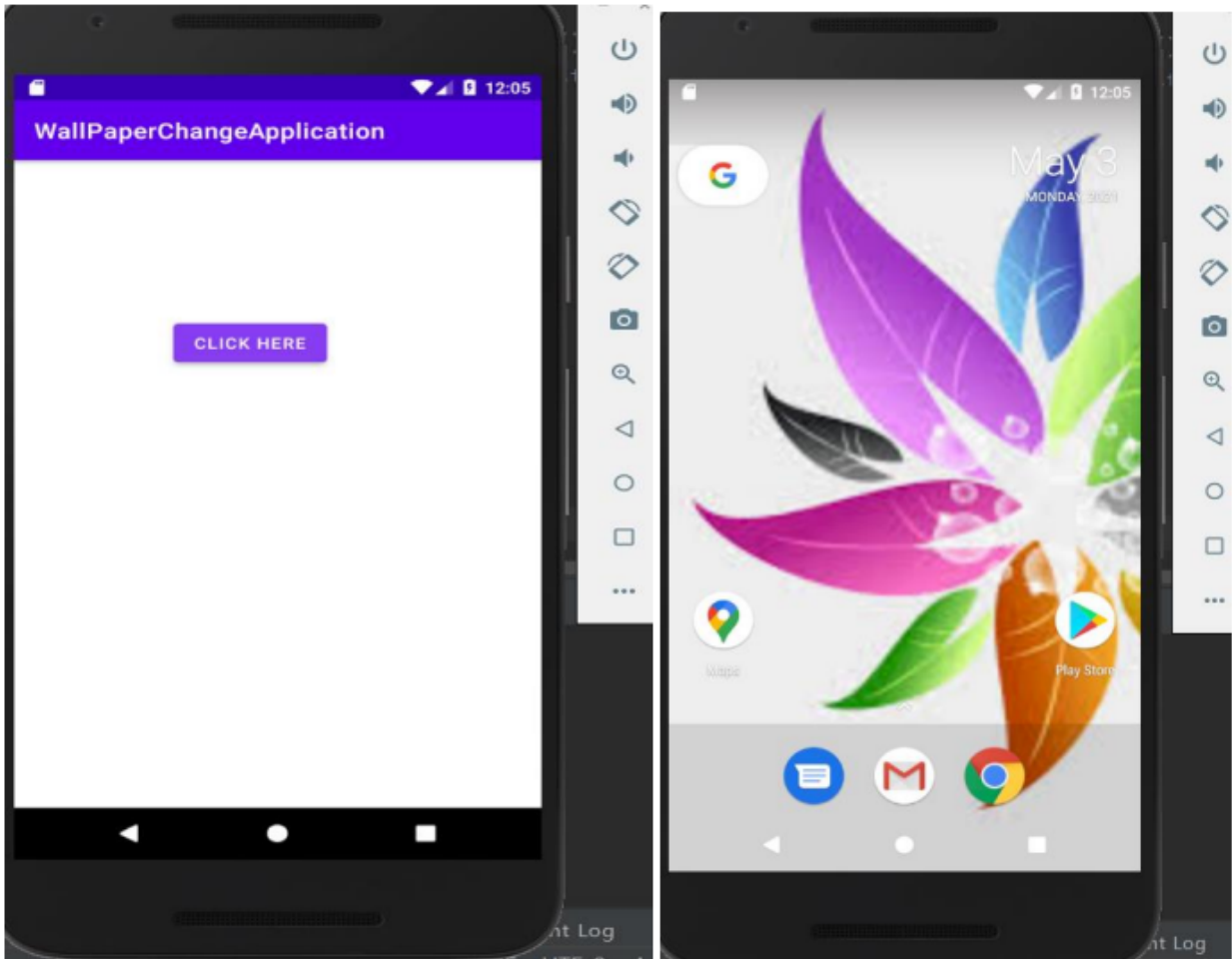
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.graphics.drawable.DrawableContainer;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import java.io.IOException;
import java.util.Timer;
import java.util.TimerTask;
public class MainActivity extends AppCompatActivity
{ Button dynwall;
  Timer mytimer;
  Drawable drawable;
  WallpaperManager wpr;
  int prev=1;
  @Override
  protected void onCreate(Bundle savedInstanceState)
  { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mytimer=new Timer();
    wpr=WallpaperManager.getInstance(this);
    dynwall=findViewById(R.id.button);
    dynwall.setOnClickListener(new View.OnClickListener()
    { @Override
      public void onClick(View view)
      { setWallpaper();
        }
    });
  }
  private void setWallpaper() {
    mytimer.schedule(new TimerTask() {
      @SuppressWarnings("MissingPermission")
      @Override
      public void run() {
        if(prev==1) {
          drawable = getResources().getDrawable(R.drawable.w1);
          prev=2;
        }
        else if(prev==2) {
          drawable = getResources().getDrawable(R.drawable.w1);
          prev=3;
        }
      }
    });
  }
}

```



```
else if(prev==3) {
drawable = getResources().getDrawable((R.drawable.w2));
prev = 4;
}
else if(prev==4) {
drawable = getResources().getDrawable((R.drawable.w3));
prev = 1;
}
Bitmap
wallpaper = ((BitmapDrawable) drawable).getBitmap();
try {
wpr.setBitmap(wallpaper);
}
catch (IOException e)
{
e.printStackTrace();
}
},0,3000);
}
```

Output



**Program 5**

## 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">
<TextView
android:layout_width="wrap_content"
android:layout_height="59dp"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="51dp"
android:layout_marginBottom="642dp"
android:text="Counter Application"
android:textAlignment="center"
android:textColor="#2196F3"
android:textSize="36sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<TextView
android:id="@+id/tv1"
android:layout_width="175dp"
android:layout_height="43dp"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="117dp"
android:layout_marginBottom="502dp"
android:text="Counter Value"
android:textAlignment="center" />
<Button
android:id="@+id/bt1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="282dp"
android:layout_marginBottom="401dp"
```

```

android:shadowColor="#E91E63"
android:text="START"
android:textSize="18sp" />
<Button
android:id="@+id/bt2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="41dp"
android:layout_marginBottom="400dp"
android:shadowColor="@color/purple_200"
android:text="STOP"
android:textColor="@color/white"
android:textSize="18sp" />
</RelativeLayout>

```

### **JAVA Code:**

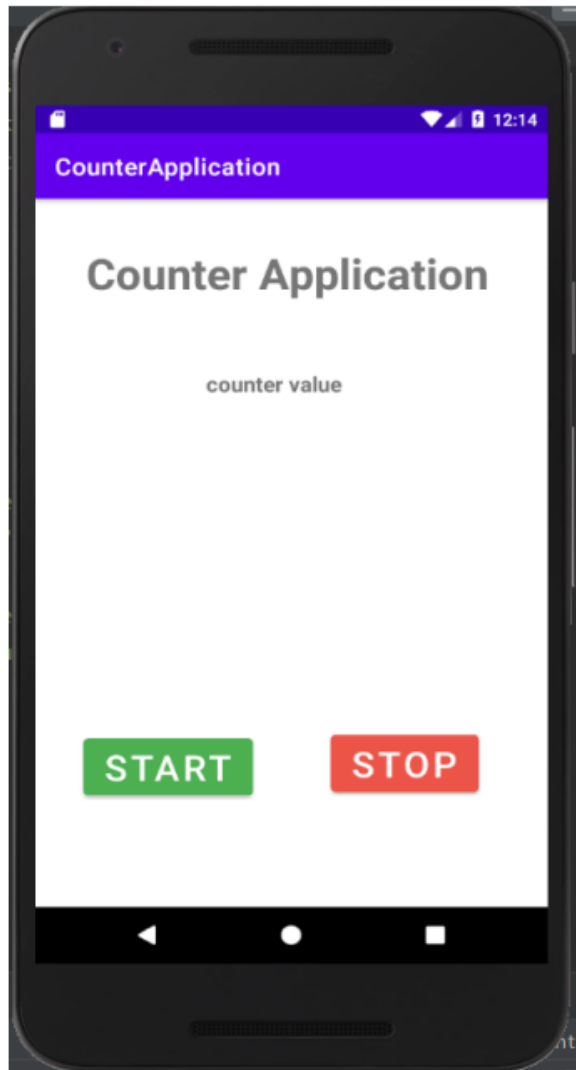
```

package com.example.lbp5;
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 b1,b2;
    TextView tc1;
    int i=1;
    Handler h1=new Handler();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=findViewById(R.id.bt1);
        b2=findViewById(R.id.bt2);
        tc1=findViewById(R.id.tv1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v)
            {
                h1.postDelayed(updateTimerThread,0);
            }
        }
    }
}

```

```
});  
b2.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        h1.removeCallbacks(updateTimerThread);  
    }  
});  
}  
private final Runnable updateTimerThread=new Runnable() {  
    @Override  
    public void run() {  
        tc1.setText(""+i);  
        h1.postDelayed(this,1000);  
        i++;  
    }  
};  
}
```

Output



**Program 6**

## 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">
    <TextView
        android:layout_width="380dp"
        android:layout_height="72dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="16dp"
        android:layout_marginBottom="621dp"
        android:text="Parser Application"
        android:textAlignment="center"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.128"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="281dp"
        android:layout_marginBottom="464dp"
        android:onClick="parseXml"
        android:text="XML" />

    <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="69dp"
        android:layout_marginBottom="465dp"
        android:onClick="parseJson"
        android:text="JSON" />
        <TextView
        android:id="@+id/display"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="37dp"
        android:layout_marginBottom="264dp" android:text=""
        android:textSize="18sp" />
    </RelativeLayout>

```

## JAVA Code

```

package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;
import org.json.JSONArray;
import org.json.JSONObject;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;
import java.io.InputStream;
import java.nio.charset.StandardCharsets;
import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
public class MainActivity extends AppCompatActivity
{ TextView display;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    display=findViewById(R.id.display);
  }
  public void parseXml(View V)
  {
    try {

```



```

InputStream is=getAssets().open("city.xml");
DocumentBuilderFactory documentBuilderFactory=DocumentBuilderFactory.newInstance();
DocumentBuilder documentBuilder = documentBuilderFactory.newDocumentBuilder();
Document document=documentBuilder.parse(is);
StringBuilder stringBuilder=new StringBuilder();
stringBuilder.append("XML DATA");
stringBuilder.append("\n-----");
NodeList nodeList=document.getElementsByTagName("place"); for (int
i=0;i<nodeList.getLength();i++)
{
Node node=nodeList.item(i);
if(node.getNodeType()==Node.ELEMENT_NODE) {
Element element=(Element)node;
stringBuilder.append("\n Name").append(getValue("name",element));
stringBuilder.append("\n Latitude").append(getValue("latitude",element));
stringBuilder.append("\n Longitude").append(getValue("longitude",element));
stringBuilder.append("\n Temperature").append(getValue("temperature",element));
stringBuilder.append("\n Humidity").append(getValue("humidity",element));
stringBuilder.append("\n-----");
}
}
display.setText(stringBuilder.toString()); }
catch (Exception e)
{
e.printStackTrace();
Toast.makeText(MainActivity.this,"Error in reading xml
file",Toast.LENGTH_SHORT).show();
}
}
public void parseJson(View V)
{ String json;
StringBuilder stringBuilder=new StringBuilder(); try
{
InputStream is=getAssets().open("city.json"); int size=is.available();
byte[] buffer=new byte[size];
is.read(buffer);
json=new String(buffer, StandardCharsets.UTF_8);
JSONArray jsonArray=new JSONArray(json); stringBuilder.append("JSON
DATA");
stringBuilder.append("\n-----");
for (int i=0;i<jsonArray.length();i++)
{
JSONObject jsonObject=jsonArray.getJSONObject(i); stringBuilder.append("\n
Name").append(jsonObject.getString("name"));

```

```

        stringBuilder.append("\n
Latitude").append(jsonObject.getString("latitude"));
        stringBuilder.append("\n
Longitude").append(jsonObject.getString("longitude"));
        stringBuilder.append("\n
Temperature").append(jsonObject.getString("temperature"));
        stringBuilder.append("\n
Humidity").append(jsonObject.getString("humidity"));
        stringBuilder.append("\n-----");
    }
    display.setText(stringBuilder.toString());
    is.close();
}
catch (Exception e)
{
    e.printStackTrace();
    Toast.makeText(MainActivity.this,"Error in reading json
file",Toast.LENGTH_SHORT).show();
}
}
private String getValue(String tag,Element element) {
    return
    element.getElementsByTagName(tag).item(0).getChildNodes().item(0). getNodeValue();
}
}

```

Output



**Program 7**

## XML Code:

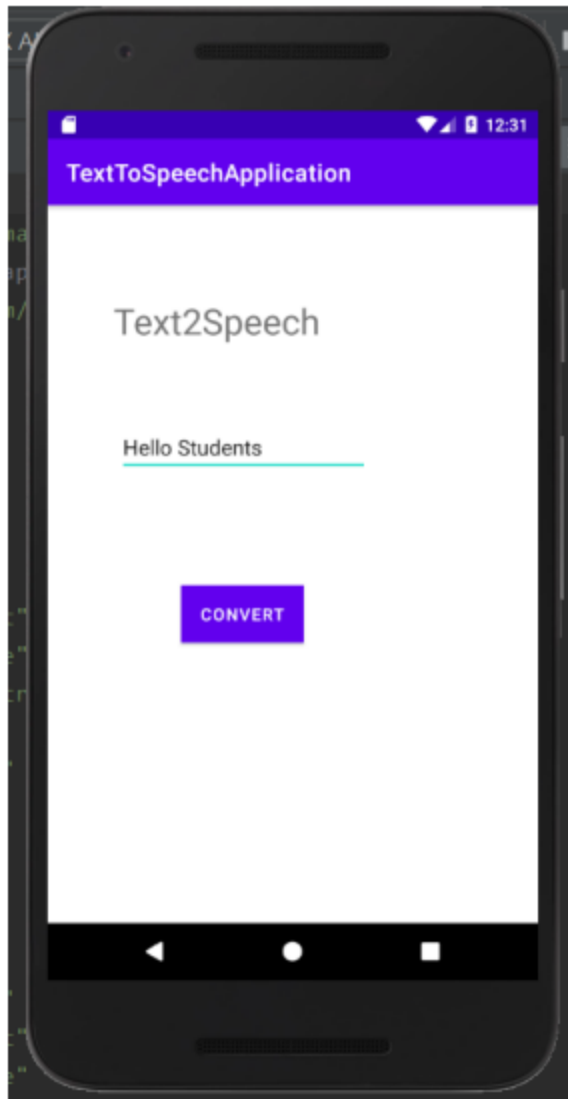
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:textAlignment="center"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="291dp"
        android:layout_height="58dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="67dp"
        android:layout_marginBottom="617dp"
        android:text="Text to Speech"
        android:textAlignment="center"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="113dp"
        android:layout_marginBottom="484dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="enter text here"
        android:text="" />
    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:onClick="convert"
```

```
android:layout_marginEnd="185dp"
android:layout_marginBottom="359dp"
android:text="convert" />
</RelativeLayout>
```

## **JAVA Code**

```
package com.example.lb7;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.Button;
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);
    }
}
```

Output



**Program 8**

## 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">
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="161dp"
android:layout_marginBottom="651dp"
android:text="Call App"
android:textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<EditText
android:id="@+id/editText"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="191dp"
android:layout_marginBottom="541dp"
android:ems="10"
android:hint="Enter phone number"
android:inputType="" />
<Button
android:id="@+id/clearBtn"
android:layout_width="82dp"
android:layout_height="37dp"
android:layout_alignParentEnd="true"
android:layout_alignParentBottom="true"
android:layout_marginEnd="68dp"
android:layout_marginBottom="546dp"
android:text="Clear" />
```

```
<Button
android:id="@+id/btn1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="301dp"
android:layout_marginBottom="471dp"
android:onClick="inputNumber"
android:background="#D0173F49"
android:text="1" />
<Button
android:id="@+id/btn2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="193dp"
android:layout_marginBottom="472dp"
android:onClick="inputNumber"
android:background="#D0173F49"
android:text="2" />
<Button
android:id="@+id/btn3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:onClick="inputNumber"
android:layout_marginEnd="80dp"
android:layout_marginBottom="471dp"
android:background="#D0173F49"
android:text="3" />
<Button
android:id="@+id/btn4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="302dp"
android:layout_marginBottom="403dp"
android:background="#D0173F49"
android:onClick="inputNumber"
android:text="4" />
```



```
<Button
android:id="@+id/btn5"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="193dp"
android:layout_marginBottom="402dp"
android:background="@color/purple_200"
android:onClick="inputNumber"
android:text="5" />
```

```
<Button
android:id="@+id/btn6"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="77dp"
android:layout_marginBottom="403dp"
android:background="#D0173F49"
android:onClick="inputNumber"
android:text="6" />
```

```
<Button
android:id="@+id/btn7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="302dp"
android:layout_marginBottom="336dp"
android:background="#D0173F49"
android:onClick="inputNumber"
android:text="7" />
```

```
<Button
android:id="@+id/btn8"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
android:layout_marginEnd="193dp"
android:layout_marginBottom="338dp"
android:onClick="inputNumber"
android:text="8" />
```

```
<Button
```

```
    android:id="@+id/btn9"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="69dp"
    android:layout_marginBottom="336dp"
    android:background="#D0173F49"
    android:onClick="inputNumber"
    android:text="9" />
```

```
<Button
```

```
    android:id="@+id/btn10"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="302dp"
    android:layout_marginBottom="283dp"
    android:background="#D0173F49"
    android:onClick="inputNumber"
    android:text="" />
```

```
<Button
```

```
    android:id="@+id/btn11"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="190dp"
    android:layout_marginBottom="283dp"
    android:background="#D0173F49"
    android:onClick="inputNumber"
    android:text="0" />
```

```
<Button
```

```
    android:id="@+id/btn12"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_alignParentBottom="true"
    android:layout_marginEnd="78dp"
    android:layout_marginBottom="282dp"
    android:background="#D0173F49"
    android:onClick="inputNumber"
    android:text="#" />
```

```
<Button
```

```

        android:id="@+id/callBtn"
        android:layout_width="127dp"
        android:layout_height="63dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="232dp"
        android:layout_marginBottom="194dp"
        android:text="Call" />
    <Button
        android:id="@+id/saveBtn"
        android:layout_width="107dp"
        android:layout_height="60dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="59dp"
        android:layout_marginBottom="193dp"
        android:text="Save" />
</RelativeLayout>

```

## JAVA Code

```

package com.example.myapplication;
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;
public class MainActivity extends AppCompatActivity
{ EditText editText;
  Button clearBtn,callBtn,saveBtn;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
  setContentView(R.layout.activity_main);
  editText=findViewById(R.id.editText);
  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) {
    editText.setText("");
}
});
callBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String phnum=editText.getText().toString();
        Intent intent=new Intent(Intent.ACTION_DIAL);
        intent.setData(Uri.parse("tel:"+phnum));
        startActivity(intent);
    }
});
saveBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String phnum=editText.getText().toString();
        Intent intent=new Intent(Intent.ACTION_INSERT);
        intent.setType(ContactsContract.Contacts.CONTENT_TYPE);
        intent.putExtra(ContactsContract.Intents.Insert.PHONE,phnum);
        startActivity(intent);
    }
});
}
public void inputNumber(View V)
{
    Button btn=(Button)V;
    String digit=btn.getText().toString();
    String phnum=editText.getText().toString();
    editText.setText(phnum + digit);
}
}

```

Output



