***1.xml***

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView7"  
 android:layout\_width="215dp"  
 android:layout\_height="47dp"  
 android:layout\_marginStart="98dp"  
 android:layout\_marginTop="320dp"  
 android:text="JOB TITLE: Student"  
 android:textColor="#673AB7"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
  
 <TextView  
 android:id="@+id/textView10"  
 android:layout\_width="258dp"  
 android:layout\_height="72dp"  
 android:layout\_marginStart="98dp"  
 android:text="EMAIL-ID: johnsmith@gmail.com"  
 android:textColor="#673AB7"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.647" />  
  
 <TextView  
 android:id="@+id/textView11"  
 android:layout\_width="266dp"  
 android:layout\_height="41dp"  
 android:layout\_marginStart="98dp"  
 android:text="FAX NO: 555-123-4567"  
 android:textColor="#673AB7"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.734" />  
  
 <TextView  
 android:id="@+id/textView8"  
 android:layout\_width="233dp"  
 android:layout\_height="38dp"  
 android:layout\_marginStart="98dp"  
 android:text="PH NO:9756412312"  
 android:textColor="#673AB7"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.536" />  
  
  
  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="144dp"  
 android:layout\_height="185dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="1.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.0"  
 app:srcCompat="@drawable/kleit" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="252dp"  
 android:layout\_height="139dp"  
 android:text="K.L.E INSTITUTE OF TECHNOLOGY"  
 android:textAlignment="center"  
 android:textColor="#8A1111"  
 android:textSize="34sp"  
 android:textStyle="bold"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 tools:layout\_editor\_absoluteY="16dp" />  
  
 <View  
 android:id="@+id/divider"  
 android:layout\_width="409dp"  
 android:layout\_height="1dp"  
 android:layout\_marginTop="200dp"  
 android:layout\_marginEnd="4dp"  
 android:background="?android:attr/listDivider"  
 android:foregroundTint="#121111"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="215dp"  
 android:layout\_height="47dp"  
 android:layout\_marginStart="98dp"  
 android:text="NAME: John Smith"  
 android:textColor="#673AB7"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.368" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

1.java

package com.example.viscard;  
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.**

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/editTextNumberDecimal"  
 android:layout\_width="173dp"  
 android:layout\_height="69dp"  
 android:layout\_marginEnd="24dp"  
 android:ems="10"  
 android:inputType="numberDecimal"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.163" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="Add"  
 android:text="ADD"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.176"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.522" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="Subtract"  
 android:text="SUBTRACT"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.679"  
 app:layout\_constraintStart\_toEndOf="@+id/button"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.522" />  
  
 <Button  
 android:id="@+id/button3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="Multiply"  
 android:text="MULTIPLY"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.164"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/button"  
 app:layout\_constraintVertical\_bias="0.187" />  
  
 <Button  
 android:id="@+id/button4"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="Divide"  
 android:text="DIVIDE"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.652"  
 app:layout\_constraintStart\_toEndOf="@+id/button3"  
 app:layout\_constraintTop\_toBottomOf="@+id/button2"  
 app:layout\_constraintVertical\_bias="0.187" />  
  
 <EditText  
 android:id="@+id/editTextTextPersonName2"  
 android:layout\_width="172dp"  
 android:layout\_height="61dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Number 1"  
 android:textStyle="bold"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toStartOf="@+id/editTextNumberDecimal"  
 app:layout\_constraintHorizontal\_bias="0.38"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.161" />  
  
 <EditText  
 android:id="@+id/editTextTextPersonName3"  
 android:layout\_width="169dp"  
 android:layout\_height="69dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Number 2"  
 android:textStyle="bold"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.078"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextTextPersonName2"  
 app:layout\_constraintVertical\_bias="0.085" />  
  
 <EditText  
 android:id="@+id/editTextTextPersonName4"  
 android:layout\_width="159dp"  
 android:layout\_height="65dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Result"  
 android:textStyle="bold"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.099"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/button3"  
 app:layout\_constraintVertical\_bias="0.397" />  
  
 <EditText  
 android:id="@+id/editTextNumberDecimal3"  
 android:layout\_width="172dp"  
 android:layout\_height="63dp"  
 android:ems="10"  
 android:inputType="numberDecimal"  
 android:textAlignment="center"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.709"  
 app:layout\_constraintStart\_toEndOf="@+id/editTextTextPersonName4"  
 app:layout\_constraintTop\_toBottomOf="@+id/button4"  
 app:layout\_constraintVertical\_bias="0.392" />  
  
 <EditText  
 android:id="@+id/editTextNumberDecimal2"  
 android:layout\_width="174dp"  
 android:layout\_height="64dp"  
 android:ems="10"  
 android:inputType="numberDecimal"  
 android:textAlignment="center"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.53"  
 app:layout\_constraintStart\_toEndOf="@+id/editTextTextPersonName3"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextNumberDecimal"  
 app:layout\_constraintVertical\_bias="0.079" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.simplecalculator;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
 public void Add(View v){  
 EditText et1 = (EditText) findViewById(R.id.*editTextNumberDecimal*);  
 EditText et2 = (EditText) findViewById(R.id.*editTextNumberDecimal2*);  
 EditText et3 = (EditText) findViewById(R.id.*editTextNumberDecimal3*);  
  
 int n1 = Integer.*parseInt*(et1.getText().toString());  
 int n2 = Integer.*parseInt*(et2.getText().toString());  
 int result = n1+n2;  
  
 et3.setText("Sum = "+result);  
 }  
  
 public void Subtract(View v){  
 EditText et1 = (EditText) findViewById(R.id.*editTextNumberDecimal*);  
 EditText et2 = (EditText) findViewById(R.id.*editTextNumberDecimal2*);  
 EditText et3 = (EditText) findViewById(R.id.*editTextNumberDecimal3*);  
  
 int n1 = Integer.*parseInt*(et1.getText().toString());  
 int n2 = Integer.*parseInt*(et2.getText().toString());  
 int result = n1-n2;  
  
 et3.setText("Difference = "+result);  
 }  
  
 public void Multiply(View v){  
 EditText et1 = (EditText) findViewById(R.id.*editTextNumberDecimal*);  
 EditText et2 = (EditText) findViewById(R.id.*editTextNumberDecimal2*);  
 EditText et3 = (EditText) findViewById(R.id.*editTextNumberDecimal3*);  
  
 int n1 = Integer.*parseInt*(et1.getText().toString());  
 int n2 = Integer.*parseInt*(et2.getText().toString());  
 int result = n1\*n2;  
  
 et3.setText("Product = "+result);  
 }  
  
 public void Divide(View v){  
 EditText et1 = (EditText) findViewById(R.id.*editTextNumberDecimal*);  
 EditText et2 = (EditText) findViewById(R.id.*editTextNumberDecimal2*);  
 EditText et3 = (EditText) findViewById(R.id.*editTextNumberDecimal3*);  
  
 int n1 = Integer.*parseInt*(et1.getText().toString());  
 int n2 = Integer.*parseInt*(et2.getText().toString());  
 int result = n1/n2;  
  
 et3.setText("Quotient = "+result);  
 }  
}

**3.**

**Activity\_main.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/txt\_password"  
 android:layout\_width="235dp"  
 android:layout\_height="55dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.89"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.325"  
 tools:ignore="SpeakableTextPresentCheck" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Sign Up Activity"  
 android:textAlignment="center"  
 android:textAllCaps="true"  
 android:textColor="#E91E63"  
 android:textSize="28sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.569"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.067" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Username"  
 android:textAlignment="center"  
 android:textColor="#9C27B0"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.115"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.224" />  
  
 <TextView  
 android:id="@+id/textView3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Password"  
 android:textAlignment="center"  
 android:textColor="#9C27B0"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.121"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.33" />  
  
 <EditText  
 android:id="@+id/txt\_username"  
 android:layout\_width="218dp"  
 android:layout\_height="48dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.92"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.228"  
 tools:ignore="SpeakableTextPresentCheck" />  
  
 <Button  
 android:id="@+id/btn\_signup"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Sign Up"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**Activity\_login.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/login\_password"  
 android:layout\_width="211dp"  
 android:layout\_height="48dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.89"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.325"  
 tools:ignore="SpeakableTextPresentCheck" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login Activity"  
 android:textAlignment="center"  
 android:textAllCaps="true"  
 android:textColor="#E91E63"  
 android:textSize="28sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.569"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.067" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Username"  
 android:textAlignment="center"  
 android:textColor="#9C27B0"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.115"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.224" />  
  
 <TextView  
 android:id="@+id/textView3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Password"  
 android:textAlignment="center"  
 android:textColor="#9C27B0"  
 android:textSize="24sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.121"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.33" />  
  
 <EditText  
 android:id="@+id/login\_username"  
 android:layout\_width="218dp"  
 android:layout\_height="48dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.92"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.228"  
 tools:ignore="SpeakableTextPresentCheck" />  
  
 <Button  
 android:id="@+id/btn\_login"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java**

package com.example.signupandlogin;  
  
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();  
 }  
}

**login.java**

package com.example.signupandlogin;  
  
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();  
 }  
 }  
  
 }  
}

**Program 4:**

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 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="342dp"  
 android:layout\_height="163dp"  
 android:text="WALLPAPER CHANGING APP"  
 android:textAppearance="@style/TextAppearance.AppCompat.Display2"  
 android:textColor="#673AB7"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.495"  
 app:layout\_constraintStart\_toStartOf="parent"  
 tools:layout\_editor\_absoluteY="16dp" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="293dp"  
 android:layout\_height="77dp"  
 android:text="CLICK HERE TO CHANGE"  
 app:iconTint="#4CAF50"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/textView" />  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.changingwallpaper;  
import androidx.appcompat.app.AppCompatActivity;  
import android.app.WallpaperManager;  
import android.graphics.BitmapFactory;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import java.io.IOException;  
import java.util.Random;  
import java.util.Timer;  
import java.util.TimerTask;  
  
public class MainActivity extends AppCompatActivity implements View.OnClickListener {  
 Button btn;  
 boolean running;  
 int[] ia = new int[]{R.drawable.img1, R.drawable.img2, R.drawable.img3, R.drawable.img4, R.drawable.img5};  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 btn = (Button)findViewById(R.id.*button*);  
 btn.setOnClickListener(this);  
 }  
 @Override  
 public void onClick(View v) {  
 if (!running) {  
 new Timer().schedule(new MyTimer(), 0, 3000);  
 running = true;  
 }  
 }  
 private class MyTimer extends TimerTask {  
 @Override  
 public void run() {  
 try {  
 WallpaperManager wallpaperManager = WallpaperManager.*getInstance*(getBaseContext());  
 Random random = new Random();  
 wallpaperManager.setBitmap(BitmapFactory.*decodeResource*(getResources(), ia[random.nextInt(5)]));  
 } catch (IOException e) {  
 }  
 }  
 }  
}

**5.**

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 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="423dp"  
 android:layout\_height="74dp"  
 android:text="Counter Application"  
 android:textAppearance="@style/TextAppearance.AppCompat.Display2"  
 android:textColor="#673AB7"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent"  
 tools:layout\_editor\_absoluteY="72dp" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Counter Value"  
 android:textAppearance="@style/TextAppearance.AppCompat.Display1"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/textView"  
 app:layout\_constraintVertical\_bias="0.161"  
 tools:layout\_editor\_absoluteX="99dp" />  
  
 <Button  
 android:id="@+id/btn\_start"  
 android:layout\_width="214dp"  
 android:layout\_height="49dp"  
 android:layout\_marginStart="98dp"  
 android:layout\_marginTop="358dp"  
 android:layout\_marginBottom="324dp"  
 android:text="START"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/btn\_stop"  
 android:layout\_width="211dp"  
 android:layout\_height="54dp"  
 android:layout\_marginStart="99dp"  
 android:layout\_marginTop="467dp"  
 android:layout\_marginBottom="210dp"  
 android:text="STOP"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

Mainactivity.java

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*);  
 btnstart=findViewById(R.id.*btn\_start*);  
 btnstop=findViewById(R.id.*btn\_stop*);  
 txtcounter=findViewById(R.id.*textView2*);  
 btnstart.setOnClickListener(new View.OnClickListener(){  
 @Override  
 public void onClick(View v) {  
 customHandler.postDelayed(UpdateTimerThread,0);  
 }  
 });  
 btnstop.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(""+i);  
 customHandler.postDelayed(this,1000);  
 i++;  
 }  
 };  
}

**6**

xml

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="#BEC393"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="300dp"  
 android:layout\_height="91dp"  
 android:text="XML AND JSON PARSER"  
 android:textAlignment="center"  
 android:textColor="#E91E63"  
 android:textSize="34sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent"  
 tools:layout\_editor\_absoluteY="42dp" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="146dp"  
 android:layout\_height="56dp"  
 android:layout\_marginTop="171dp"  
 android:layout\_marginBottom="504dp"  
 android:onClick="parsexml"  
 android:text="Parse-XML"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.501"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="143dp"  
 android:layout\_height="47dp"  
 android:layout\_marginBottom="400dp"  
 android:onClick="parsejson"  
 android:text="PARSE-JSON"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
 <TextView  
 android:id="@+id/display"  
 android:layout\_width="283dp"  
 android:layout\_height="335dp"  
 android:layout\_marginBottom="64dp"  
 android:textAlignment="center"  
 android:textColor="#E91E63"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.656"  
 app:layout\_constraintStart\_toStartOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

city.xml

<?xml version="1.0" ?>  
<records>  
 <place>  
 <name>Hubballi</name>  
 <lat>12.295</lat>  
 <long>76.679</long>  
 <temperature>25</temperature>  
 <humidity>90%</humidity>  
 </place>  
 <place>  
 <name>Bangalore</name>  
 <lat>12.295</lat>  
 <long>76.679</long>  
 <temperature>25</temperature>  
 <humidity>74%</humidity>  
 </place>  
</records>

city.json

[  
 {  
 "name":"Dharwad",  
 "lat": "12.95",  
 "long": "76.639",  
 "temperature":"29",  
 "humidity": "74%"  
 },  
 {  
 "name":"Mysore",  
 "lat": "12.95",  
 "long": "76.639",  
 "temperature":"29",  
 "humidity": "74%"  
 }  
]

java file

package com.example.mad\_lab6;  
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=(TextView) 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("\nName:").append(getValue("name",element));  
 stringBuilder.append("\nLatitude:").append(getValue("lat",element));  
 stringBuilder.append("\nLongitude:").append(getValue("long",element));  
 stringBuilder.append("\nTemprature:").append(getValue("temperature",element));  
 stringBuilder.append("\nHumidity:").append(getValue("humidity",element));  
 stringBuilder.append("\n-----");  
 }  
 }  
 display.setText(stringBuilder.toString());  
 }catch (Exception e){  
 e.printStackTrace();  
 Toast.*makeText*(MainActivity.this,"Error parsing XML", Toast.*LENGTH\_LONG*).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("\nName:").append(jsonObject.getString("name"));  
 stringBuilder.append("\nLatitude:").append(jsonObject.getString("lat"));  
 stringBuilder.append("\nLongitude:").append(jsonObject.getString("long"));  
 stringBuilder.append("\nTemperature:").append(jsonObject.getString("temperature"));  
 stringBuilder.append("\nHumidity:").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",Toast.*LENGTH\_LONG*).show();  
 }  
 }  
 private String getValue(String tag,Element element)  
 {  
 return element.getElementsByTagName(tag).item(0).getChildNodes().item(0).getNodeValue();  
 }  
}

7.

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"   
 xmlns:app="http://schemas.android.com/apk/res-auto"   
 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:text="Text to Speech Application"   
 android:textAlignment="center"   
 android:textColor="#E91E63"   
 android:textSize="28sp"   
 app:layout\_constraintBottom\_toBottomOf="parent"   
 app:layout\_constraintHorizontal\_bias="0.493"   
 app:layout\_constraintLeft\_toLeftOf="parent"   
 app:layout\_constraintRight\_toRightOf="parent"   
 app:layout\_constraintTop\_toTopOf="parent"   
 app:layout\_constraintVertical\_bias="0.176" />  
   
 <EditText  
 android:id="@+id/edt\_txt"   
 android:layout\_width="wrap\_content"   
 android:layout\_height="wrap\_content"  
 android:ems="10"   
 android:inputType="textPersonName"   
 app:layout\_constraintBottom\_toBottomOf="parent"   
 app:layout\_constraintEnd\_toEndOf="parent"   
 app:layout\_constraintHorizontal\_bias="0.497"   
 app:layout\_constraintStart\_toStartOf="parent"   
 app:layout\_constraintTop\_toTopOf="parent"   
 app:layout\_constraintVertical\_bias="0.338" />  
   
 <Button  
 android:id="@+id/btn\_speech"   
 android:layout\_width="wrap\_content"   
 android:layout\_height="wrap\_content"   
 android:text="Speech"   
 app:layout\_constraintBottom\_toBottomOf="parent"   
 app:layout\_constraintEnd\_toEndOf="parent"   
 app:layout\_constraintStart\_toStartOf="parent"   
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.texttospeechconvertor;  
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 android.widget.Toast;  
import java.util.Locale;  
public class MainActivity extends AppCompatActivity implements  
 View.OnClickListener, TextToSpeech.OnInitListener {  
 Button btnSpeak;  
 EditText txtSpeak;  
 TextToSpeech textToSpeech;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 txtSpeak = (EditText) findViewById(R.id.*edt\_txt*);  
 btnSpeak = (Button) findViewById(R.id.*btn\_speech*);  
 btnSpeak.setOnClickListener(this);  
 textToSpeech = new TextToSpeech(getBaseContext(), this);  
 textToSpeech.setLanguage(Locale.*ENGLISH*);  
 }  
  
 @Override  
 public void onClick(View v) {  
 String text = txtSpeak.getText().toString();  
 textToSpeech.speak(text, TextToSpeech.*QUEUE\_FLUSH*, null);  
 }  
  
 @Override  
 public void onInit(int status) {  
 if (status != TextToSpeech.*ERROR*) {  
 Toast.*makeText*(getBaseContext(), "Success", Toast.*LENGTH\_LONG*).show();  
 }  
 }  
}

8.

Activity\_main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="#E8DBDB"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="272dp"  
 android:layout\_height="81dp"  
 android:text="CALL AND SAVE APPLICATION"  
 android:textAlignment="center"  
 android:textAllCaps="true"  
 android:textColor="#F44336"  
 android:textSize="34sp"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <EditText  
 android:id="@+id/phoneNumberEditText"  
 android:layout\_width="233dp"  
 android:layout\_height="51dp"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginTop="220dp"  
 android:layout\_marginEnd="125dp"  
 android:layout\_marginBottom="458dp"  
 android:ems="10"  
 android:hint="Enter phone Number"  
 android:inputType="phone"  
 android:text=""  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="1.0" />  
  
 <Button  
 android:id="@+id/clearBtn"  
 android:layout\_width="114dp"  
 android:layout\_height="53dp"  
 android:layout\_marginStart="300dp"  
 android:layout\_marginTop="223dp"  
 android:layout\_marginEnd="17dp"  
 android:layout\_marginBottom="460dp"  
 android:text="DEL"  
 android:textColor="#F44336"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.95"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.2" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="31dp"  
 android:layout\_marginTop="333dp"  
 android:layout\_marginEnd="292dp"  
 android:layout\_marginBottom="350dp"  
 android:onClick="inputNumber"  
 android:text="1"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="153dp"  
 android:layout\_marginTop="331dp"  
 android:layout\_marginEnd="170dp"  
 android:layout\_marginBottom="352dp"  
 android:onClick="inputNumber"  
 android:text="2"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button4"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="268dp"  
 android:layout\_marginTop="329dp"  
 android:layout\_marginEnd="55dp"  
 android:layout\_marginBottom="354dp"  
 android:onClick="inputNumber"  
 android:text="3"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button5"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginTop="402dp"  
 android:layout\_marginEnd="293dp"  
 android:layout\_marginBottom="281dp"  
 android:onClick="inputNumber"  
 android:text="4"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button6"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="153dp"  
 android:layout\_marginTop="400dp"  
 android:layout\_marginEnd="170dp"  
 android:layout\_marginBottom="283dp"  
 android:onClick="inputNumber"  
 android:text="5"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button7"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="265dp"  
 android:layout\_marginTop="400dp"  
 android:layout\_marginEnd="58dp"  
 android:layout\_marginBottom="283dp"  
 android:onClick="inputNumber"  
 android:text="6"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button8"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="31dp"  
 android:layout\_marginTop="469dp"  
 android:layout\_marginEnd="292dp"  
 android:layout\_marginBottom="214dp"  
 android:onClick="inputNumber"  
 android:text="7"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button9"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="153dp"  
 android:layout\_marginTop="470dp"  
 android:layout\_marginEnd="170dp"  
 android:layout\_marginBottom="213dp"  
 android:onClick="inputNumber"  
 android:text="8"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button10"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="267dp"  
 android:layout\_marginTop="469dp"  
 android:layout\_marginEnd="56dp"  
 android:layout\_marginBottom="214dp"  
 android:onClick="inputNumber"  
 android:text="9"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button11"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="31dp"  
 android:layout\_marginTop="541dp"  
 android:layout\_marginEnd="292dp"  
 android:layout\_marginBottom="142dp"  
 android:onClick="inputNumber"  
 android:text="\*"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button12"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="153dp"  
 android:layout\_marginTop="541dp"  
 android:layout\_marginEnd="170dp"  
 android:layout\_marginBottom="142dp"  
 android:onClick="inputNumber"  
 android:text="0"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button13"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="268dp"  
 android:layout\_marginTop="541dp"  
 android:layout\_marginEnd="55dp"  
 android:layout\_marginBottom="142dp"  
 android:onClick="inputNumber"  
 android:text="#"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/callBtn"  
 android:layout\_width="114dp"  
 android:layout\_height="52dp"  
 android:layout\_marginStart="58dp"  
 android:layout\_marginTop="629dp"  
 android:layout\_marginEnd="239dp"  
 android:onClick="inputNumber"  
 android:text="CALL"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/saveBtn"  
 android:layout\_width="111dp"  
 android:layout\_height="50dp"  
 android:layout\_marginStart="204dp"  
 android:layout\_marginTop="629dp"  
 android:layout\_marginEnd="96dp"  
 android:layout\_marginBottom="52dp"  
 android:onClick="inputNumber"  
 android:text="SAVE"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.dialer;  
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 phoneNumberEditText;  
 Button ClearBtn, callBtn,saveBtn;  
 @Override  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 phoneNumberEditText=findViewById(R.id.*phoneNumberEditText*);  
 callBtn=findViewById(R.id.*callBtn*);  
 saveBtn=findViewById(R.id.*saveBtn*);  
 ClearBtn=findViewById(R.id.*clearBtn*);  
 ClearBtn.setOnClickListener(new View.OnClickListener(){  
 @Override  
 public void onClick(View view) {  
  
 phoneNumberEditText.setText("");  
 }  
 });  
 callBtn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 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 view) {  
 String phoneNumber = phoneNumberEditText.getText().toString();  
 Intent intent= new Intent(Intent.*ACTION\_DIAL*);  
 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);  
 }  
}