**MOBILE APPLICATION DEVELOPMENT LAB ROUGH RECORD**

**SUBMITTED BY,**

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20MCA338

**COURSE OUTCOME 1**

**PROGRAM NO:1**

**AIM:**Design a Login Form with username and password using LinearLayout and toast valid credentials

**PROGRAM CODE:**

**XML CODE:**

<?xml version="1.0" encoding="utf-8"?>

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:paddingLeft="16dp"

android:paddingRight="16dp">

<EditText

android:id="@+id/usr"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="User Name" />

<EditText

android:id="@+id/pass"

android:layout\_width="match\_parent"

android:layout\_height="59dp"

android:ems="10"

android:hint="password"

android:inputType="textPassword"/>

<Button

android:id="@+id/button"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="LOGIN" />

</LinearLayout>

**JAVA CODE:**

package com.example.login;

import androidx.appcompat.app.AppCompatActivity;

import android.widget.EditText;

import android.widget.Button;

import android.view.View;

import android.widget.Toast;

import android.os.Bundle;

import java.util.Objects;

public class MainActivity extends AppCompatActivity {

EditText username,password;

Button btn;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

username = (EditText) findViewById(R.id.usr);

password = (EditText) findViewById(R.id.pass);

btn = (Button) findViewById(R.id.button);

btn.setOnClickListener(new View.OnClickListener(){

@Override

public void onClick(View v)

{

validate();

}

});

}

public void validate()

{

String name=username.getText().toString();

String pass=password.getText().toString();

int valid=1;

if(name.length()==0)

{

username.getText().clear();

username.requestFocus();

username.setError("Enter name ");

Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH\_SHORT).show();

valid++;

}

if(name.matches(namePattern))

{

username.getText().clear();

username.requestFocus();

username.setError("Name contains illegal characters");

Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH\_SHORT).show();

valid++;

}

if(password.length()==0)

{

password.requestFocus();

password.setError("Enter password");

valid++;

}

if(valid==1)

{

Toast.makeText(getApplicationContext(), "VALIDATION SUCESSFULL", Toast.LENGTH\_SHORT).show();

}

if(Objects.equals(username.getText().toString(), "admin")&&Objects.equals(password.getText().toString(),"admin"))

{

Toast.makeText(MainActivity.this,"You have Authenticated Successfully",Toast.LENGTH\_LONG).show();

}else

{

Toast.makeText(MainActivity.this,"Authentication Failed",Toast.LENGTH\_LONG).show();

}

}

}

## OUTPUT

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**RESULT:** The program is executed successfully and output is obtained

**PROGRAM NO:2**

**AIM:**Write a program that demonstrates Activity Lifecycle

**PROGRAM CODE:**

**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/name"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="HELLOOOO"

android:textColor="#9C27B0"

android:textColorHighlight="#F44336"

android:textColorLink="#F44336"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

**JAVA CODE:**

package com.example.myactivity;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.util.Log;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Log.d("lifecycle","onCreate invoked");

}

@Override

protected void onStart() {

super.onStart();

Log.d("lifecycle","onStart invoked");

}

@Override

protected void onResume() {

super.onResume();

Log.d("lifecycle","onResume invoked");

}

@Override

protected void onPause() {

super.onPause();

Log.d("lifecycle","onPause invoked");

}

@Override

protected void onStop() {

super.onStop();

Log.d("lifecycle","onStop invoked");

}

@Override

protected void onRestart() {

super.onRestart();

Log.d("lifecycle","onRestart invoked");

}

@Override

protected void onDestroy() {

super.onDestroy();

Log.d("lifecycle","onDestroy invoked");

}

}

**OUTPUT**

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**RESULT:** The program is executed successfully and output is obtained

**PROGRAM NO:3**

**AIM:**Implementing basic arithmetic operations of a simple calculator

**PROGRAM CODE:**

**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">

<EditText

android:id="@+id/fn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="99dp"

android:layout\_marginTop="68dp"

android:layout\_marginEnd="102dp"

android:layout\_marginBottom="32dp"

android:ems="10"

android:hint="First number"

android:inputType="textPersonName"

app:layout\_constraintBottom\_toTopOf="@+id/sn"

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" />

<Button

android:id="@+id/mul"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="36dp"

android:layout\_marginTop="44dp"

android:onClick="mul"

android:text="\*"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/add" />

<Button

android:id="@+id/div"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="130dp"

android:layout\_marginTop="48dp"

android:layout\_marginEnd="62dp"

android:onClick="div"

android:text="/"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.285"

app:layout\_constraintStart\_toEndOf="@+id/mul"

app:layout\_constraintTop\_toBottomOf="@+id/sub" />

<Button

android:id="@+id/sub"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="129dp"

android:layout\_marginTop="106dp"

android:layout\_marginEnd="65dp"

android:onClick="sub"

android:text="-"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.0"

app:layout\_constraintStart\_toEndOf="@+id/add"

app:layout\_constraintTop\_toBottomOf="@+id/res" />

<Button

android:id="@+id/add"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="36dp"

android:layout\_marginTop="108dp"

android:onClick="sum"

android:text="+"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/res" />

<EditText

android:id="@+id/sn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="101dp"

android:layout\_marginTop="27dp"

android:layout\_marginEnd="100dp"

android:ems="10"

android:hint="Second number"

android:inputType="textPersonName"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.0"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/fn" />

<EditText

android:id="@+id/res"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="100dp"

android:layout\_marginTop="25dp"

android:layout\_marginEnd="101dp"

android:ems="10"

android:hint="Result"

android:inputType="textPersonName"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="1.0"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/sn" />

</androidx.constraintlayout.widget.ConstraintLayout>

**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 num1,num2,result;

int n1,n2;

String s1,s2,s3;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

}

public void getNum()

{

num1 = (EditText) findViewById(R.id.fn);

num2 = (EditText) findViewById(R.id.sn);

result = (EditText) findViewById(R.id.res);

s1 = num1.getText().toString();

s2 = num2.getText().toString();

}

public void sum(View v)

{

getNum();

n1 = Integer.parseInt(s1);

n2 = Integer.parseInt(s2);

s3 = String.valueOf(n1+n2);

result.setText(s3);

}

public void sub(View v)

{

getNum();

n1 = Integer.parseInt(s1);

n2 = Integer.parseInt(s2);

s3 = String.valueOf(n1-n2);

result.setText(s3);

}

public void mul(View v)

{

getNum();

n1 = Integer.parseInt(s1);

n2 = Integer.parseInt(s2);

s3 = String.valueOf(n1\*n2);

result.setText(s3);

}

public void div(View v)

{

getNum();

n1 = Integer.parseInt(s1);

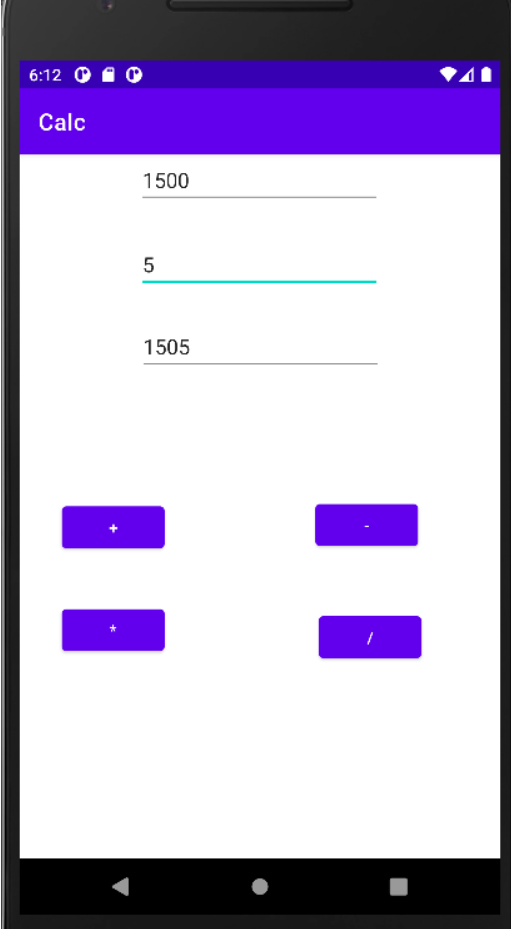
n2 = Integer.parseInt(s2);

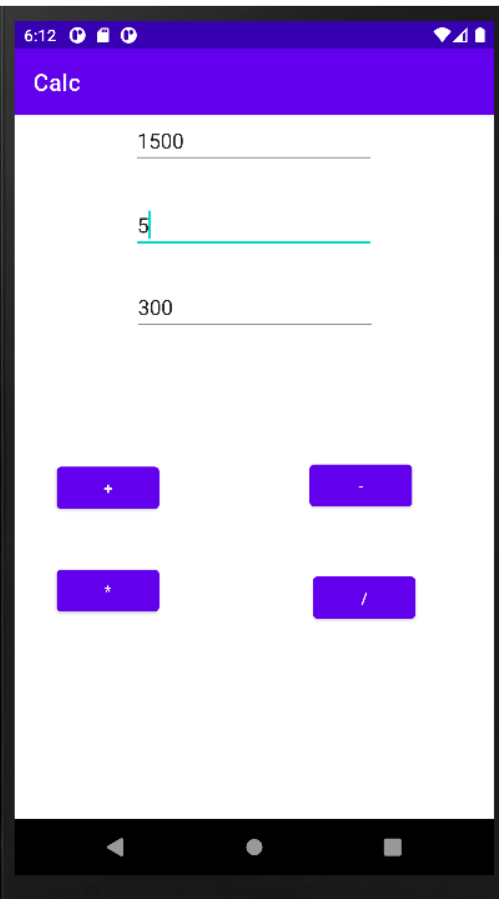
s3 = String.valueOf(n1/n2);

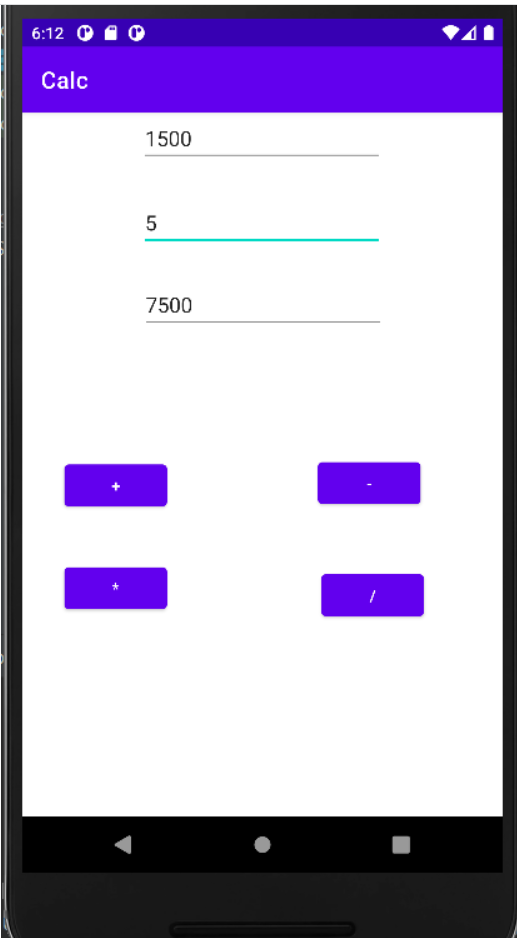
result.setText(s3);

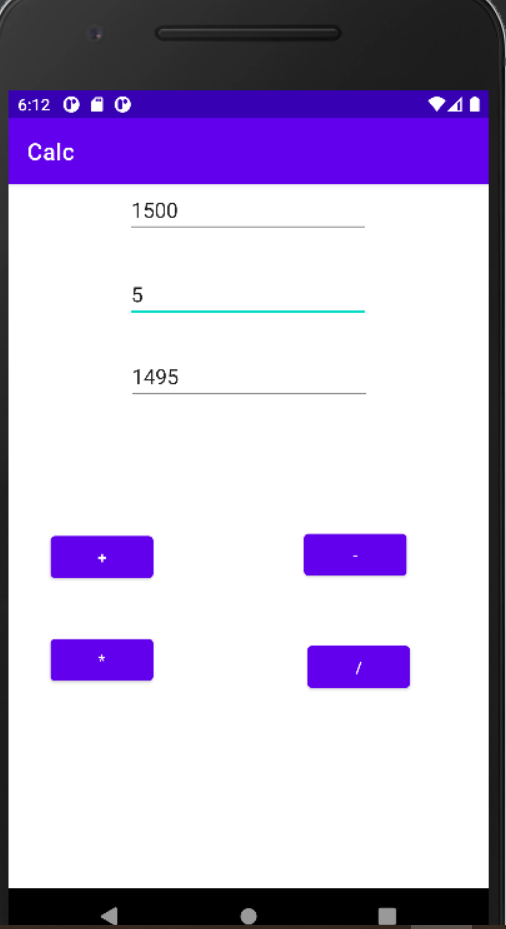
}

**OUTPUT**

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**RESULT:** The program is executed successfully and output is obtained

**PROGRAM NO:4**

**AIM:**Implement validations on various UI controls

**PROGRAM CODE:**

**XML CODE:**

<?xml version="1.0" encoding="utf-8"?>

<LinearLayout 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="#F6C7D7"

android:orientation="vertical"

tools:context=".MainActivity">

<EditText

android:id="@+id/name"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:ems="10"

android:hint="Name"

android:inputType="textPersonName" />

<EditText

android:id="@+id/address"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:ems="10"

android:hint="Address"

android:inputType="textPersonName"

android:minHeight="48dp" />

<EditText

android:id="@+id/email"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:ems="10"

android:hint="Email"

android:inputType="textEmailAddress" />

<EditText

android:id="@+id/password"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:ems="10"

android:hint="Password"

android:inputType="textPassword" />

<EditText

android:id="@+id/phno"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:ems="10"

android:hint="Phone"

android:inputType="phone" />

<TextView

android:id="@+id/textView"

android:layout\_width="match\_parent"

android:layout\_height="35dp"

android:backgroundTint="#00BCD4"

android:text="Gender"

android:textAppearance="@style/TextAppearance.AppCompat.Body2"

android:textSize="16sp" />

<RadioGroup

android:id="@+id/gender"

android:layout\_width="match\_parent"

android:layout\_height="99dp">

<RadioButton

android:id="@+id/male"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:text="Male" />

<RadioButton

android:id="@+id/female"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#00BCD4"

android:text="Female" />

<Button

android:id="@+id/validate"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="SUBMIT" />

</RadioGroup>

<Button

android:id="@+id/validate1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:backgroundTint="#009688"

android:text="SUBMIT"

android:textSize="20sp" />

**JAVA CODE:**

package com.example.validation;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.RadioButton;

import android.widget.RadioGroup;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

EditText e1,e2,e3,e4,e5;

Button b1;

RadioButton r1,r2;

RadioGroup r;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

e1=(EditText)findViewById(R.id.name);

e2=(EditText)findViewById(R.id.address);

e3=(EditText)findViewById(R.id.email);

e4=(EditText)findViewById(R.id.password);

e5=(EditText)findViewById(R.id.phno);

b1=(Button)findViewById(R.id.validate1);

r=(RadioGroup)findViewById(R.id.gender);

r1=(RadioButton)findViewById(R.id.male);

r2=(RadioButton)findViewById(R.id.female);

b1.setOnClickListener(new View.OnClickListener(){

@Override

public void onClick(View v)

{

validate();

}

});

}

public void validate()

{

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

String email=e3.getText().toString().trim();

String address=e2.getText().toString();

String password=e4.getText().toString();

String namePattern="[0-9!@#$%^&\*]";

String emailPattern="[a-zA-Z0-9.\_-]+@[a-z]+\\.+[a-z]+";

String pno=e5.getText().toString();

int valid=1;

if(name.length()==0)

{

e1.getText().clear();

e1.requestFocus();

e1.setError("Enter name ");

Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH\_SHORT).show();

valid++;

}

if(name.matches(namePattern))

{

e1.getText().clear();

e1.requestFocus();

e1.setError("Name contains illegal characters");

Toast.makeText(getApplicationContext(), "Enter valid name", Toast.LENGTH\_SHORT).show();

valid++;

}

if(address.length()==0)

{

e2.getText().clear();

e2.requestFocus();

e2.setError("Enter address");

Toast.makeText(getApplicationContext(), "Enter valid address", Toast.LENGTH\_SHORT).show();

valid++;

}

if(email.length()==0)

{

e3.getText().clear();

e3.requestFocus();

e3.setError("Enter email address");

Toast.makeText(getApplicationContext(), "Enter valid email", Toast.LENGTH\_SHORT).show();

valid++;

}

if(!email.matches(emailPattern))

{

e3.getText().clear();

e3.requestFocus();

e3.setError("Invalid email address");

Toast.makeText(getApplicationContext(), "Enter valid email ", Toast.LENGTH\_SHORT).show();

valid++;

}

if(password.length()==0)

{

e4.requestFocus();

e4.setError("Enter password");

valid++;

}

if(password.length()<5)

{

e4.requestFocus();

e4.setError("Enter an 8 digit password");

valid++;

}

if (r.getCheckedRadioButtonId() == -1)

{

Toast.makeText(getApplicationContext(), "Please select any gender", Toast.LENGTH\_SHORT).show();

valid++;

}

else

{

if(r1.isChecked())

{

Toast.makeText(getApplicationContext(), "Welcome Mr."+name, Toast.LENGTH\_SHORT).show();

}

if(r2.isChecked())

{

Toast.makeText(getApplicationContext(), "Welcome Ms."+name, Toast.LENGTH\_SHORT).show();

}

}

if(pno.length()<10)

{

e5.setError("Phone number should be of atleast 10 digits");

valid++;

}

if(valid==1)

{

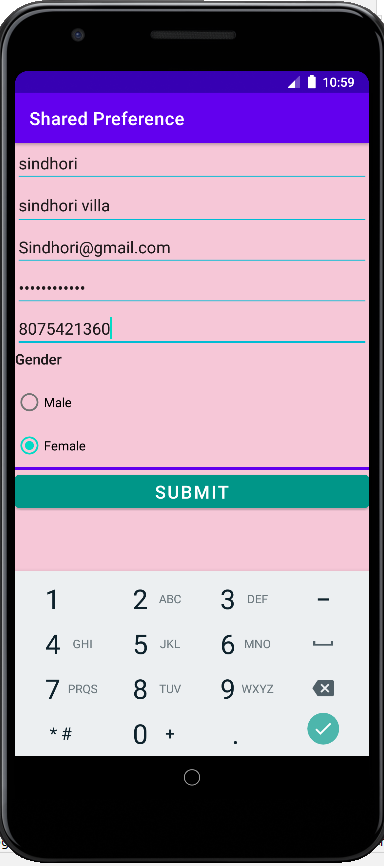
Toast.makeText(getApplicationContext(), "VALIDATION SUCESSFULL", Toast.LENGTH\_SHORT).show();

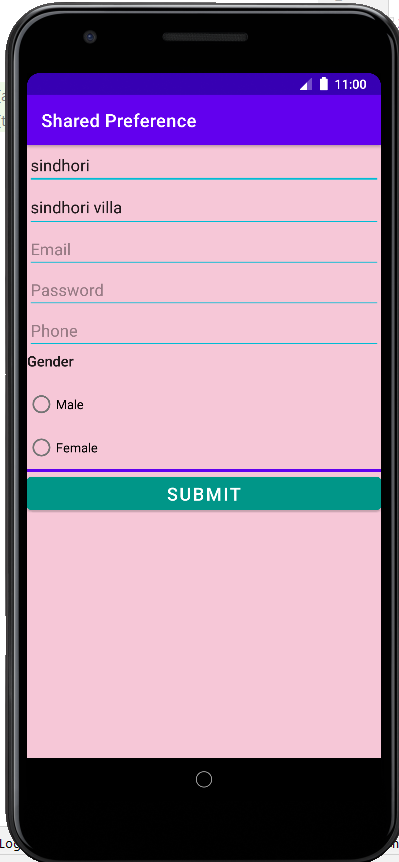
}

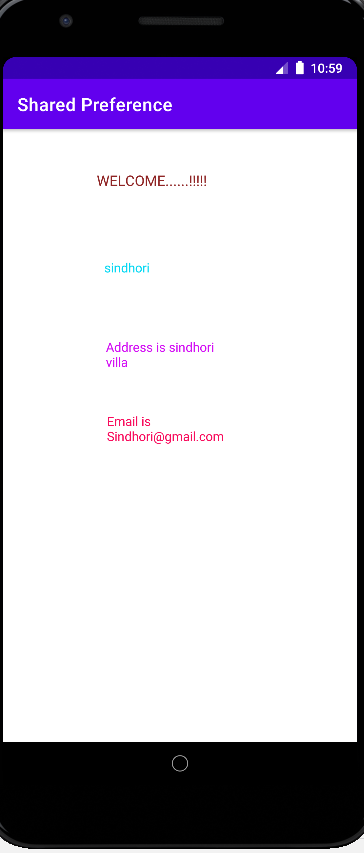
}

}

**OUTPUT**

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**RESULT:**The program is executed successfully and output is obtained