

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

ANCY ALEXANDER

Reg. No.:AJC20MCA-2016

In Partial fulfillment for the Award of the Degree Of

**MASTER OF COMPUTER APPLICATIONS (2 Year)
(MCA)**

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY



**AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**

[Affiliated to APJ Abdul Kalam Technological University, Kerala. Approved by AICTE, Accredited by NAAC with 'A' grade. Koovapally, Kanjirappally, Kottayam, Kerala – 686518]

2021-2022

**DEPARTMENT OF COMPUTER APPLICATIONS
AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**



CERTIFICATE

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **ANCY ALEXANDER (Reg.No:AJC20MCA-2016)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

Ms. Navyamol K T
Staff In-Charge

CONTENT

Sl.No	Content	Date	Page No:
1	Program to develop the android mobile application which consist of GUI components for Login Page creation.	20/01/2022	05
2	Program to display the content of EditText in TextView on button click.	20/01/2022	12
3	Program to design a Login Form with username and password using LinearLayout and toast valid credentials	27/01/2022	16
4	Program to implementing basic arithmetic operations of a simple calculator	27/01/2022	21
5	Program to complement validations on various UI controls	27/01/2022	32
6	Program to design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences	27/01/2022	39
7	Program to design a simple Calculator using GridLayout and Cascaded LinearLayout	27/01/2022	46
8	Program to create a Facebook page using RelativeLayout; set properties using .xml file	27/01/2022	55
9	Program to develop an application that toggles image using FrameLayout	27/01/2022	60
10	Program to implement Adapters and perform exception handling	04/02/2022	63
11	Program to implement Intent to navigate between multiple activities (Explicit Intent)	04/02/2022	66
12	Program to develop an application that works with Implicit intents	04/02/2022	73
13	Program to implement Options Menu to navigate to activities	10/02/2022	76
14	Program to develop an application that uses ArrayAdapter with ListView	10/02/2022	80

*

15	Program to develop an application that use GridView with images and display Alert box on selection	11/02/2022	83
16	Program to develop an application that implements Spinner component and perform event handling	11/02/2022	89
17	Program to apply themes via code from manifest file	11/02/2022	92
18	Program to develop application using Fragments	11/02/2022	96
19	Program to implement Navigation drawer	11/02/2022	101
20	Program to implement activity life cycle	03/03/2022	105
21	Program to implement various SQLite operations : (INSERT, UPDATE ,DELETE ,SELECT)	2/02/2022	109

Program 1

Aim: Program to develop the android mobile application which consist of GUI components for Login Page creation

Xml code:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/primary_screen"
    tools:context=".LoginActivity">

    <ImageView
        android:id="@+id/avatar"
        android:layout_width="120dp"
        android:layout_height="120dp"
        android:layout_marginTop="10dp"
        android:contentDescription="@string/login_image"
        android:src="@drawable/avatar"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" /
```

<TextView

```

    android:id="@+id/loginText"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginTop="10dp"

    android:text="@string/login"

    android:textColor="@color/black"

    android:textSize="30sp"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.498"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toBottomOf="@+id/avatar" />

```

<RelativeLayout

```

    android:id="@+id/loginLoginLayout"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_marginStart="5dp"

    android:layout_marginEnd="5dp"

    android:background="@drawable/account_creation"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="1.0"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toBottomOf="@+id/loginText"

    app:layout_constraintVertical_bias="0.098">

```

<EditText

```

    android:id="@+id/loginUsername"

    android:layout_width="match_parent"

    android:layout_height="40dp"

    android:layout_marginTop="40dp"

    android:autoFillHints=""

    android:layout_alignParentTop="true"

    android:hint="@string/username"

    android:layout_alignParentStart="true"

    android:layout_alignParentEnd="true"

    android:inputType="textEmailAddress"

    android:padding="10dp"

    android:layout_marginEnd="20dp"

    android:layout_marginStart="20dp"

    android:textColor="@color/white"

    android:textColorHint="@color/white" />

```

<EditText

```

    android:id="@+id/loginPassword"

    android:layout_width="match_parent"

    android:layout_height="40dp"

    android:layout_below="@+id/loginUsername"

    android:layout_alignParentStart="true"

    android:layout_alignParentEnd="true"

    android:layout_marginTop="20dp"

```

```

android:layout_marginEnd="20dp"
android:layout_marginStart="20dp"
android:hint="@string/password"
android:inputType="textPassword"
android:padding="10dp"
android:textColor="@color/white"
android:textColorHint="@color/white" />

```

<TextView

```

android:id="@+id/forgotPasswordText"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:text="@string/forgot_password"
android:clickable="true"
android:textSize="20sp"
android:layout_marginStart="30dp"
android:layout_alignParentStart="true"
android:layout_below="@+id/loginPassword"/>

```

<com.blure.complexview.ComplexView

```

android:id="@+id/shadowLoginButton"
android:layout_width="match_parent"

```



```
android:layout_height="wrap_content"

app:radius="20dp"

app:shadow="true"

app:shadowAlpha="100"

app:shadowColor="#2962FF"

android:padding="10dp"

android:layout_below="@+id/forgotPasswordText"

android:layout_marginTop="30dp"

app:shadowSpread="2">
```

```
<Button
```

```
    android:id="@+id/loginButton"

    android:layout_width="match_parent"

    android:layout_height="46dp"

    android:background="@drawable/password_reset_buttons"

    android:text="@string/sign_in" />
```

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

Java Code:

```

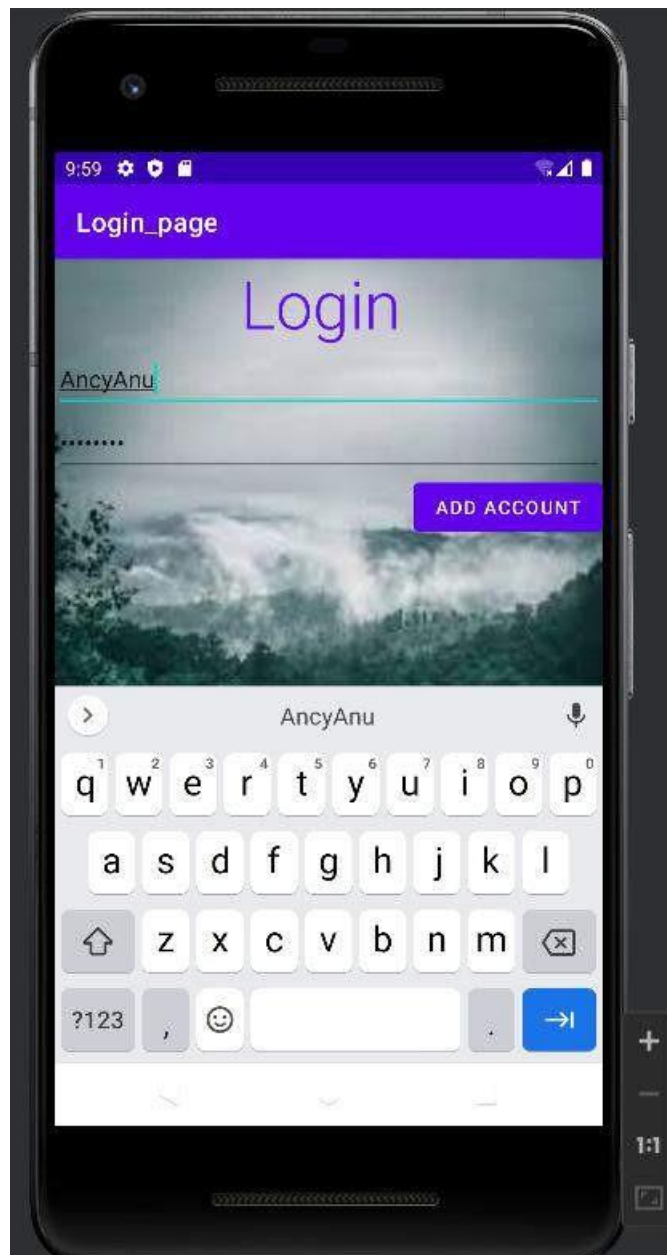
import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
public class LoginActivity extends AppCompatActivity {

    EditText loginName, loginPwd;
    Button login;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        loginName = findViewById(R.id.loginUsername);
        loginPwd = findViewById(R.id.loginPassword);
        login = findViewById(R.id.loginButton);
        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String uName, passwd;
                uName = loginName.getText().toString();
                passwd = loginPwd.getText().toString();
                Toast.makeText(LoginActivity.this"Welcome", Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

Output:



Program No: 02

Aim: Program to display the content of EditText in TextView on button click.

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="#FFD24C"

    android:gravity="center"
    android:orientation="vertical"
    tools:context=".Edit2Text">

    <EditText
        android:id="@+id/edt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter name here.." />

    <Button
        android:id="@+id/btn1"
```

```

android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:text="Add" />

```

```

<TextView
    android:id="@+id/txt2"
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:layout_marginTop="20dp"
    android:gravity="center"
    android:textSize="20dp" />

```

```

</LinearLayout>

```

Java Code:

```

package com.example.edxt;

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.TextView;

```

```

public class Edit2Text extends AppCompatActivity {

    Button b1;

    EditText e1;

    TextView t1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_edit2_text);


        e1 = findViewById(R.id.edt1); b1 =
        findViewById(R.id.btn1);    t1    =
        findViewById(R.id.txt2);

        b1.setOnClickListener(new    View.OnClickListener()    {

            @Override

            public void onClick(View v) {

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

                t1.setText(String.valueOf(value));

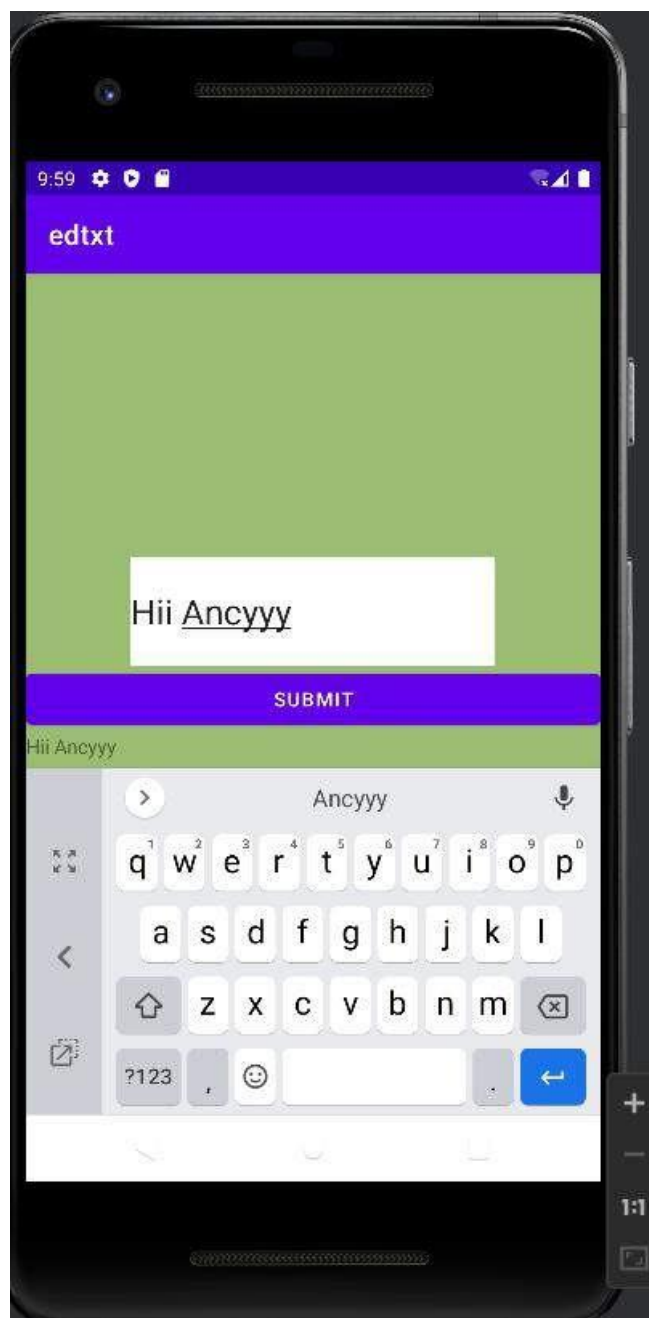
            }

        });

    }

}

```

OUTPUT:

Program No: 03

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

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:layout_gravity="center"
    android:background="#7253b0"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <androidx.cardview.widget.CardView
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        app:cardCornerRadius="15dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:orientation="vertical">
```



```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="7dp"
    android:layout_marginBottom="10dp"
    android:text="Login"
    android:textColor="#3F51B5"
    android:textSize="40dp"
    android:textStyle="bold" />

<EditText
    android:id="@+id/username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:hint="Username" />

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:hint="Password"
    android:inputType="textPassword" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="25dp"
```

```
android:text="Forgot Password?"
android:textColor="#3F51B5"
android:textStyle="bold" />
<Button
android:id="@+id/login"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="20dp"
android:text="Login" />
<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginBottom="20dp"
android:gravity="center"
android:orientation="horizontal">
    <TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Not a member?" />
    <TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="SignUp"
android:textColor="#3F51B5"
android:textStyle="bold" />
</LinearLayout>
</LinearLayout>
```

```
</androidx.cardview.widget.CardView>
```

```
</LinearLayout>
```

Java Code:

```
package com.example.adaptor;
```

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

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

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

```
import android.widget.EditText;
```

```
import android.widget.Toast;
```

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

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

```
    @Override
```

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

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

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

```
        EditText username = findViewById(R.id.username); Button
```

```
        login = findViewById(R.id.login);
```

```
        login.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

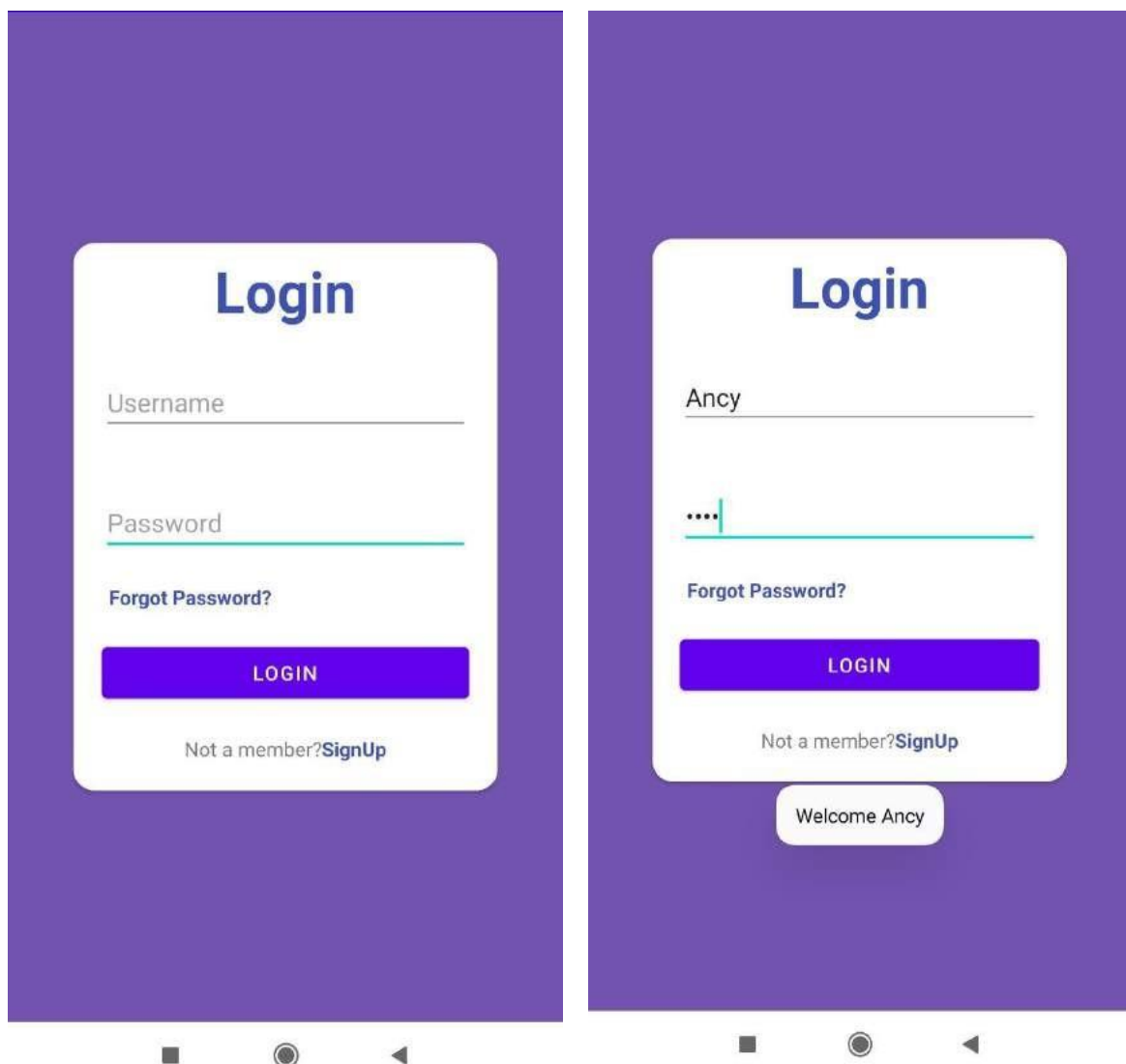
```
                Toast.makeText(MainActivity.this, "Welcome " + username.getText().toString(),
```

```
                }
```

```
            });
```

```
        }
```

```
    }
```

OUTPUT:

Program No: 04

Aim: Implementing basic arithmetic operations of a simple calculator

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"
    tools:context=".simpleCal"
    android:padding="20dp"
    android:orientation="vertical"
    android:background="@color/bg">

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CALCULATOR"
        android:textSize="25sp"
        android:layout_marginBottom="16dp"
        android:textColor="@android:color/black" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
android:orientation="horizontal"
android:layout_marginBottom="20dp">
```

```
<EditText android:id="@+id/first_no"
android:layout_width="102dp"
android:layout_height="59dp"
android:ems="10"
android:layout_marginHorizontal="50dp"
android:hint="Enter no1" />
```

```
<EditText
android:id="@+id/second_no"
android:layout_width="102dp"
android:layout_height="59dp"
android:ems="10"
android:hint="Enter no2" />
```

```
</LinearLayout>
```

```
< LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="horizontal"
android:gravity="center"
android:layout_marginBottom="20dp">
```

```
<TextView
    android:textSize="35sp"
    android:id="@+id/answer"
    android:layout_width="wrap_content"
    android:layout_height="59dp"
    android:layout_marginHorizontal="50dp"
    android:hint="ans" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:orientation="vertical"
    android:layout_marginLeft="50dp"
    android:layout_width="230dp"
    android:layout_height="wrap_content"
    android:layout_marginBottom="30dp">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
```

```
<Button
    android:id="@+id/sub"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="-"
```

```
android:layout_marginRight="50dp"  
android:textSize="25sp"  
android:layout_marginBottom="16dp" />
```

```
<Button  
android:id="@+id/add"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginBottom="16dp"  
android:text="+" android:textSize="25sp"  
tools:ignore="OnClick" />
```

```
</LinearLayout>
```

```
<LinearLayout  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:orientation="horizontal">
```

```
<Button  
android:id="@+id/div"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginRight="50dp"  
android:text="/"
```



```
android:textSize="25sp"
android:layout_marginBottom="16dp" />

<Button
    android:id="@+id/mul"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:text="X" android:textSize="25sp"/>

</LinearLayout>

<Button
    android:id="@+id/equals"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:text="=" android:textSize="35sp"/>

</LinearLayout>

</LinearLayout>
```

Java Code:

```
package com.example.Ancy;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import android.widget.TextView;
import android.widget.Toast;

public class simpleCal extends AppCompatActivity {
    EditText no1, no2;
    Button add, mul, div, sub, equal;
    TextView answer;
    double ans = 0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_simple_cal);
        // for text views
        no1 = findViewById(R.id.first_no);
```

```

no2 = findViewById(R.id.second_no);

// for button with operations add =
findViewById(R.id.add); mul =
findViewById(R.id.mul); div =
findViewById(R.id.div); sub =
findViewById(R.id.sub);

// for equal to button
equal = findViewById(R.id.equals);

// for answer field
answer = findViewById(R.id.answer);

add.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString(); String
        num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {
            Toast.makeText(getApplicationContext(), "Enter Numbers",
            Toast.LENGTH_SHORT).show();
        } else {
            double a = Double.parseDouble(no1.getText().toString()); double b =
            Double.parseDouble(no2.getText().toString()); ans = a + b;

```

```

    }

    }

});

sub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString(); String
        num2      =    no2.getText().toString();      if
        (num1.isEmpty() || num2.isEmpty()) {

            Toast.makeText(getApplicationContext(), "Enter Numbers",
            Toast.LENGTH_SHORT).show();

        } else {

            double a = Double.parseDouble(no1.getText().toString()); double b =
            Double.parseDouble(no2.getText().toString()); ans = a - b;

        }

    }

});

mul.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString(); String
        num2 = no2.getText().toString();

```

```

if (num1.isEmpty() || num2.isEmpty()) {

    Toast.makeText(getApplicationContext(), "Enter Numbers",
    Toast.LENGTH_SHORT).show();

    } else {

        double a = Double.parseDouble(no1.getText().toString()); double b =
        Double.parseDouble(no2.getText().toString()); ans = a * b;

    }

    });

div.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString(); String
        num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

            Toast.makeText(getApplicationContext(), "Enter Numbers",
            Toast.LENGTH_SHORT).show();

        } else {

            double a = Double.parseDouble(no1.getText().toString()); double b =
            Double.parseDouble(no2.getText().toString()); if (b != 0)

```

```
ans = a / b;
else

Toast.makeText(getApplicationContext(), "Enter Valid Numbers",
Toast.LENGTH_SHORT).show();

}

});

equal.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String ans1 = String.valueOf(ans);

answer.setText(ans1);

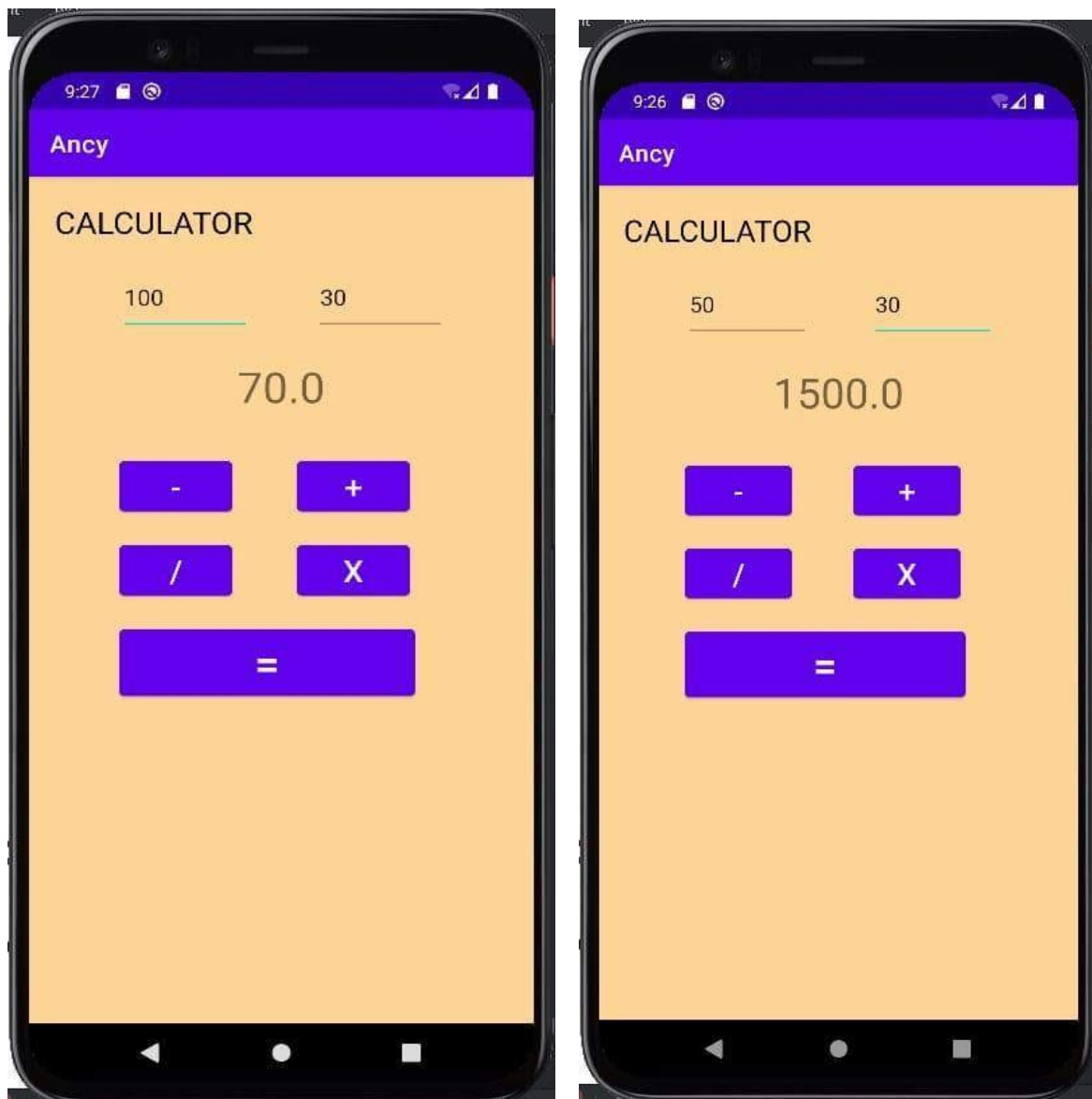
ans = 0;

}

});

}

}
```

OUTPUT:

Program No: 05

Aim: Implement validations on various UI controls

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
tools:context=".Ui_validation"
tools:ignore="HardcodedText">
<EditText
android:id="@+id/firstName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="First Name"
android:inputType="text" />
```



```
<EditText
android:id="@+id/lastName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp" android:hint="Last Name"
android:inputType="text" />
<EditText
android:id="@+id/email"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Email"
android:inputType="textEmailAddress" />
<EditText
android:id="@+id/password"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Password"
android:inputType="textPassword" />
```

```
<LinearLayout  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="8dp"  
    android:gravity="end"  
    android:orientation="horizontal">  
  
    <Button  
        android:id="@+id/cancelButton"  
        style="@style/Widget.AppCompat.Button.Borderless"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_marginEnd="4dp" android:text="CANCEL"  
        android:textColor="@color/white" />  
  
    <Button  
        android:id="@+id/proceedButton"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_marginEnd="16dp"  
        android:backgroundTint="@color/black"  
        android:text="PROCEED"  
        android:textColor="@android:color/white"  
        tools:ignore="ButtonStyle" />  
</LinearLayout>  
</LinearLayout>
```

Java Code:

```

package com.example.UI;

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;

public class Ui_validation extends AppCompatActivity {

    // two buttons

    Button bCancel, bProceed;

    // four text fields

    EditText etFirstName, etLastName, etEmail, etPassword;

    // one boolean variable to check whether all the text fields

    // are filled by the user, properly or not.

    boolean isAllFieldsChecked = false;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_ui_validation);

        // register buttons with their proper IDs. bProceed =

        findViewById(R.id.proceedButton); bCancel =

        findViewById(R.id.cancelButton);

        // register all the EditText fields with their IDs.

        etFirstName = findViewById(R.id.firstName);

        etLastName = findViewById(R.id.lastName);

```

```

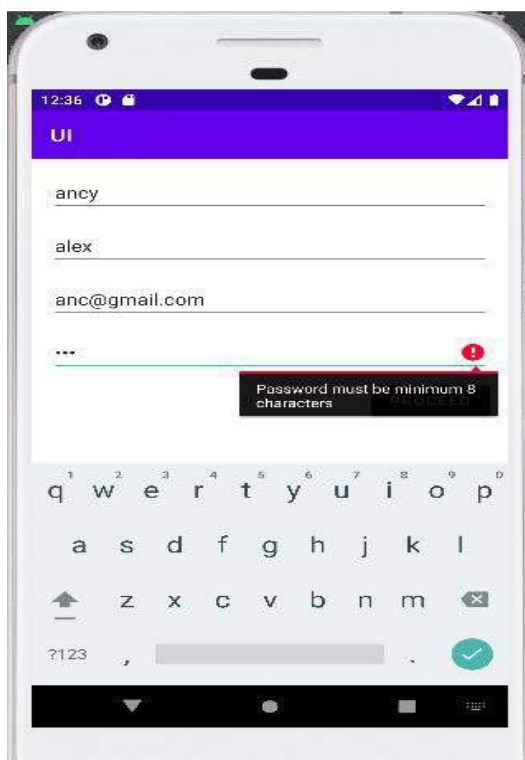
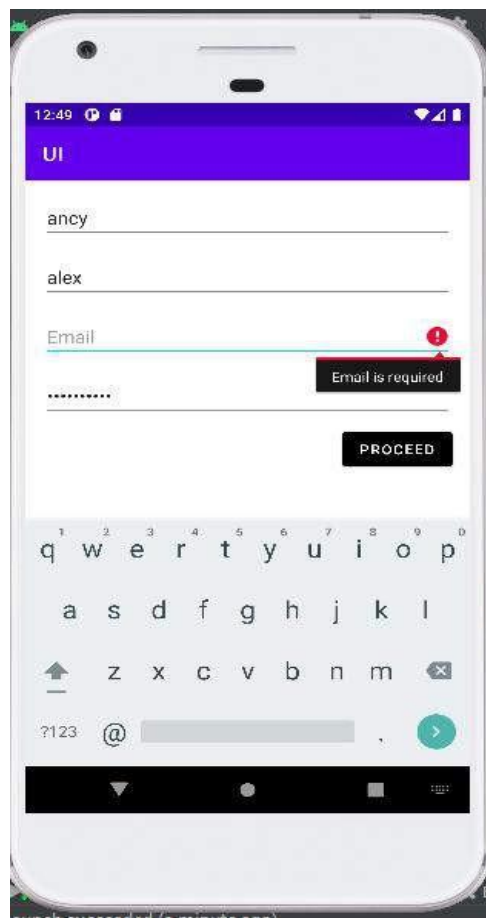
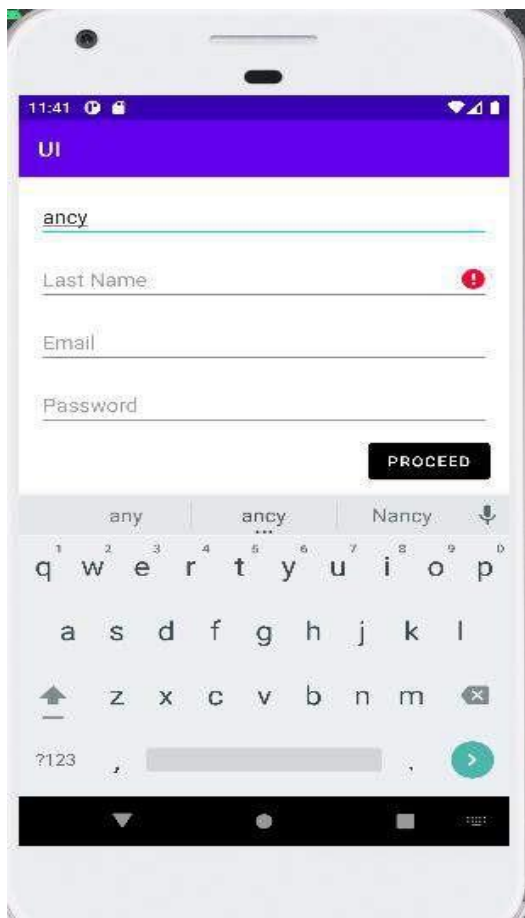
etEmail = findViewById(R.id.email); etPassword
= findViewById(R.id.password);
// handle the PROCEED button bProceed.setOnClickListener(new
View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // store the returned value of the dedicated function which checks
        // whether the entered data is valid or if any fields are left blank.
        isAllFieldsChecked = CheckAllFields();
        // the boolean variable turns to be true then
        // only the user must be proceed to the activity2 if
        (isAllFieldsChecked) {
            Intent i = new Intent(Ui_validation.this, Dashboard.class);
            startActivity(i);
        }
    }
});
// if user presses the cancel button then close the
// application or the particular activity.
bCancel.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Ui_validation.this.finish();
        System.exit(0);
    }
});
}

```

```

// function which checks all the text fields
// are filled or not by the user.
// when user clicks on the PROCEED button
// this function is triggered.
private boolean CheckAllFields() { if
(etFirstName.length() == 0) {
etFirstName.setError("This field is required"); return
false; }
if (etLastName.length() == 0) {
etLastName.setError("This field is required"); return
false;
}
If (etEmail.length() == 0) {
etEmail.setError("Email is required"); return
false;          }
if (etPassword.length() == 0) {
etPassword.setError("Password is required"); return
false;
} else if (etPassword.length() < 8) {
etPassword.setError("Password must be minimum 8 characters"); return
false;
}
// after all validation return true.
return true;
}
}

```

OUTPUT:

Program No: 06

Aim: Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences

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">

<Button

android:id="@+id/btnadd"

android:layout_width="87dp"

android:layout_height="52dp"

android:text="ADD"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toBottomOf="@+id/tv111"

app:layout_constraintVertical_bias="0.12" />

<TextView

android:id="@+id/tv111"

android:layout_width="293dp"

android:layout_height="100dp"
```

```

android:layout_marginTop="176dp"
android:textFontWeight="@integer/material_motion_duration_long_1"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.745"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.Welcome;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    Button btn;
    TextView tv11;
    SharedPreferences sharedPreferences;
    public static final String SHARED_PREF_NAME="mypref";
    public static final String KEY_NAME="";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        addListeneronButton();
    }
    private void addListeneronButton() {
        btn=(Button) findViewById(R.id.btnadd);
        tv11=(TextView) findViewById(R.id.tv111);
    }
}

```



```

sharedPreferences = getSharedPreferences(SHARED_PREF_NAME,MODE_PRIVATE);
String name=sharedPreferences.getString(KEY_NAME,String.valueOf(0));
tv11.setText("Name "+name);
btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Intent intent=new Intent(MainActivity.this,add.class);
        startActivity(intent);
    }
});
}
}

```

activity_add.xml

```

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

<androidx.constraintlayout.widget.ConstraintLayout

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

xmlns:tools="http://schemas.android.com/tools"

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".add">

<Button

android:id="@+id/btnsub"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_marginBottom="56dp"

android:text="SAVE"

```

```

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.498"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toBottomOf="@+id/editTextdta"

app:layout_constraintVertical_bias="0.241" />

<EditText

android:id="@+id/editTextdta"

android:layout_width="199dp"

android:layout_height="54dp"


android:layout_marginTop="248dp"

android:ems="10"

android:inputType="textPersonName"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent" />

<TextView

android:id="@+id/textviewname"

android:layout_width="207dp"

android:layout_height="46dp"

android:text="Name"

app:layout_constraintBottom_toTopOf="@+id/editTextdta"

```

```

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.686" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

add.java

```

package com.example.display;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class add extends AppCompatActivity {

    EditText tf;

    TextView tv;

    Button sub;

    String n1;

    SharedPreferences sharedPreferences;

    public static final String SHARED_PREF_NAME="mypref";

```

```

public static final String KEY_NAME="";

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_add);

    addButton();

}

private void addButton() {

    sub = (Button) findViewById(R.id.btnsub);

    tv = (TextView) findViewById(R.id.textviewname);

    tf = (EditText) findViewById(R.id.editTextdta);

    sharedPreferences = getSharedPreferences(SHARED_PREF_NAME,MODE_PRIVATE);

    String name = sharedPreferences.getString(KEY_NAME, String.valueOf(0));

    sub.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            String n1=tf.getText().toString();

            SharedPreferences.Editor editor = sharedPreferences.edit();

            editor.putString(KEY_NAME,n1);

            editor.commit();

            Intent int1 = new Intent(add.this, MainActivity.class);

            startActivity(int1);

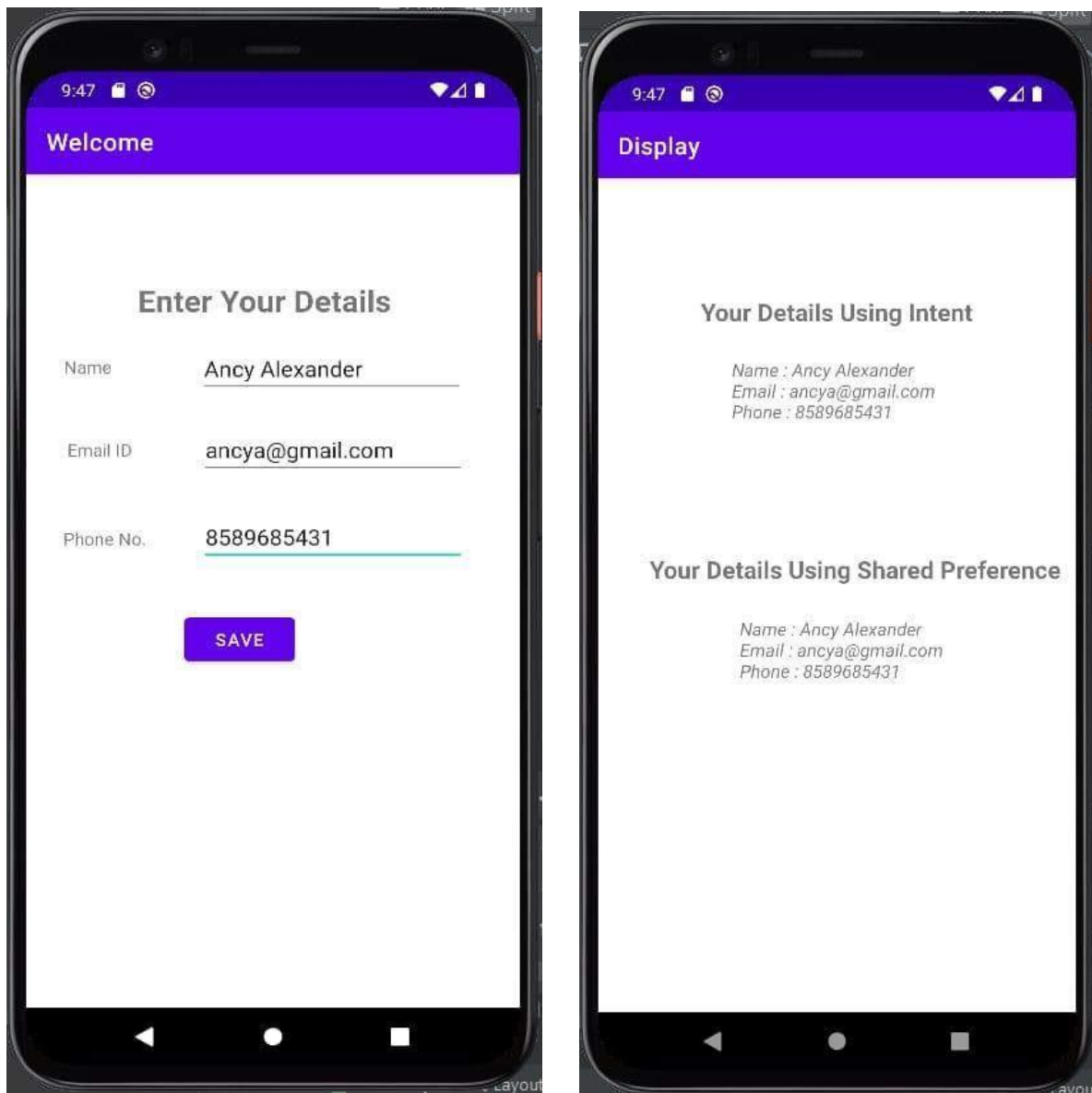
        }

    });

}

}

```

OUTPUT:

Program No: 07

Aim: Design a simple Calculator using GridLayout and Cascaded LinearLayout

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="#00000000"
    android:layout_gravity="bottom"
    android:gravity="bottom"
    android:orientation="vertical"
    tools:context=".Output">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="end"
            android:orientation="vertical">
            <TextView
```

```

    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginEnd="20dp"
    android:text="18+7"
    android:textAlignment="textEnd"
    android:textColor="@color/black"
    android:textSize="40dp" />
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginEnd="20dp"
    android:text="=25"
    android:textAlignment="textEnd"
    android:textColor="@color/black"
    android:textSize="40dp" />
</LinearLayout>
<GridLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_weight="1"
    android:columnCount="4"
    android:gravity="bottom"
    android:rowCount="4">
<Button
    android:id="@+id/b9"
    android:layout_width="50dp"

```

```

android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="9" android:textColor="@color/white"
android:textSize="25dp" />
<Button
android:id="@+id/b8" android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="8" android:textColor="@color/white"
android:textSize="25dp" />
<Button
android:id="@+id/b7" android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="7" android:textColor="@color/white"
android:textSize="25dp" />
<Button
android:id="@+id/bmult"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="#F86605"
android:text="x"
android:textColor="@color/white"

```

```

        android:textSize="18dp" />

        <Button

        android:id="@+id/b6" android:layout_width="50dp"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="@drawable/bg_button"

        android:text="6" android:textColor="@color/white"

        android:textSize="25dp" />

        <Button

        android:id="@+id/b5" android:layout_width="50dp"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="@drawable/bg_button"

        android:text="5" android:textColor="@color/white"

        android:textSize="25dp" />

        <Button

        android:id="@+id/b4"

        android:layout_width="50dp"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:background="@drawable/bg_button"

        android:text="4" android:textColor="@color/white"

        android:textSize="25dp" />

        <Button

        android:id="@+id/bdiv"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

```

```

    android:background="#F86605" android:text="/"
    android:textColor="@color/white"
    android:textSize="25dp" />

<Button
    android:id="@+id/b3" android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="@drawable/bg_button"
    android:text="3" android:textColor="@color/white"
    android:textSize="25dp" />

<Button
    android:id="@+id/b2"
    android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="@drawable/bg_button"
    android:text="2" android:textColor="@color/white"
    android:textSize="25dp" />

<Button
    android:id="@+id/b1" android:layout_width="50dp"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="@drawable/bg_button"
    android:text="1" android:textColor="@color/white"
    android:textSize="25dp" />

<Button
    android:id="@+id/bminus"

```

```

android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="#F86605" android:text="-
" android:textColor="@color/white"
android:textSize="25dp" />

<Button
android:id="@+id/b0"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="0" android:textColor="@color/white"
android:textSize="25dp" />

<Button
android:id="@+id/b." android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="." android:textColor="@color/white"
android:textSize="25dp" />

<Button
android:id="@+id/bequal"
android:layout_width="50dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"

```

```
        android:text="" android:textColor="@color/white"
        android:textSize="25dp" />
    <Button
        android:id="@+id/bplus"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="#F86605"
        android:text="+"
        android:textColor="@color/white"
        android:textSize="25dp" />
</GridLayout>
</LinearLayout>

</LinearLayout>
```

Java Code:

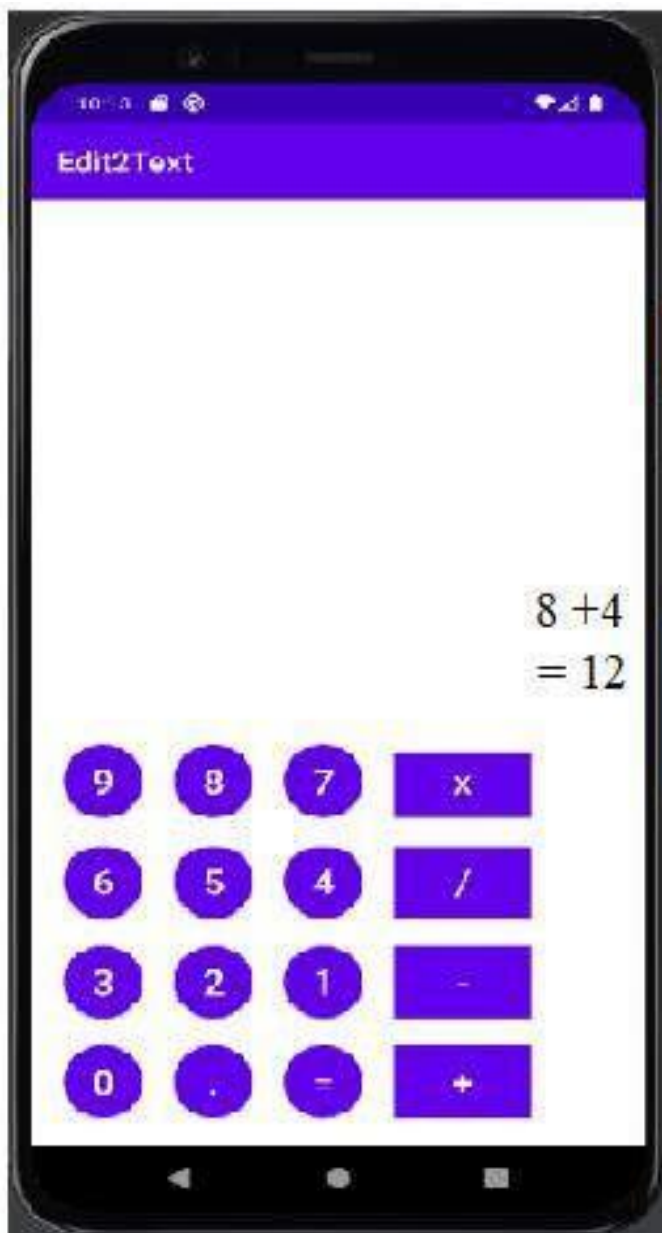
```
package com.example.edit2text;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class Output extends AppCompatActivity {
    TextView t1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_output);
    }
}
```

OUTPUT:



Program No: 08

Aim: Create a Facebook page using RelativeLayout; set properties using .xml file

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="@color/white"
    tools:context=".facebook">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#29487D"
        android:gravity="center|top"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="70dp"
            android:layout_marginBottom="100dp"
            android:orientation="vertical">

            <TextView
                android:layout_width="wrap_content"
```

```

android:layout_height="wrap_content"
android:fontFamily="@font/arvo"
android:padding="10dp"
android:text="facebook"
android:textColor="@color/white"
android:textSize="36dp" />
</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:padding="15dp"
android:orientation="vertical"
android:layout_margin="20dp">
<EditText android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Email or Phone"
android:layout_marginBottom="30dp"
android:textColorHint="#594F4F"/>
<EditText android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginBottom="30dp"
android:hint="password"
android:textColorHint="#594F4F"/>
<Button
android:layout_width="match_parent"

```



```

android:layout_height="wrap_content"
android:text="Log In"
android:background="@color/design_default_color_primary"
android:textAllCaps="false"/>
</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="horizontal"
android:layout_marginTop="180dp"
android:layout_gravity="bottom"
android:gravity="center">
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:gravity="end" android:textStyle="bold"
android:textColor="@color/white"
android:layout_weight="50"
android:text="SignUp for Facebook"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:gravity="end"
android:textColor="@color/white"
android:layout_marginEnd="130dp"
android:layout_weight="1"

```

```
android:textStyle="bold"
```

```
android:text="?"/>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

Java Code:

```
package com.example.Ancy;
```

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

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

```
public class facebook extends AppCompatActivity {
```

```
    @Override
```

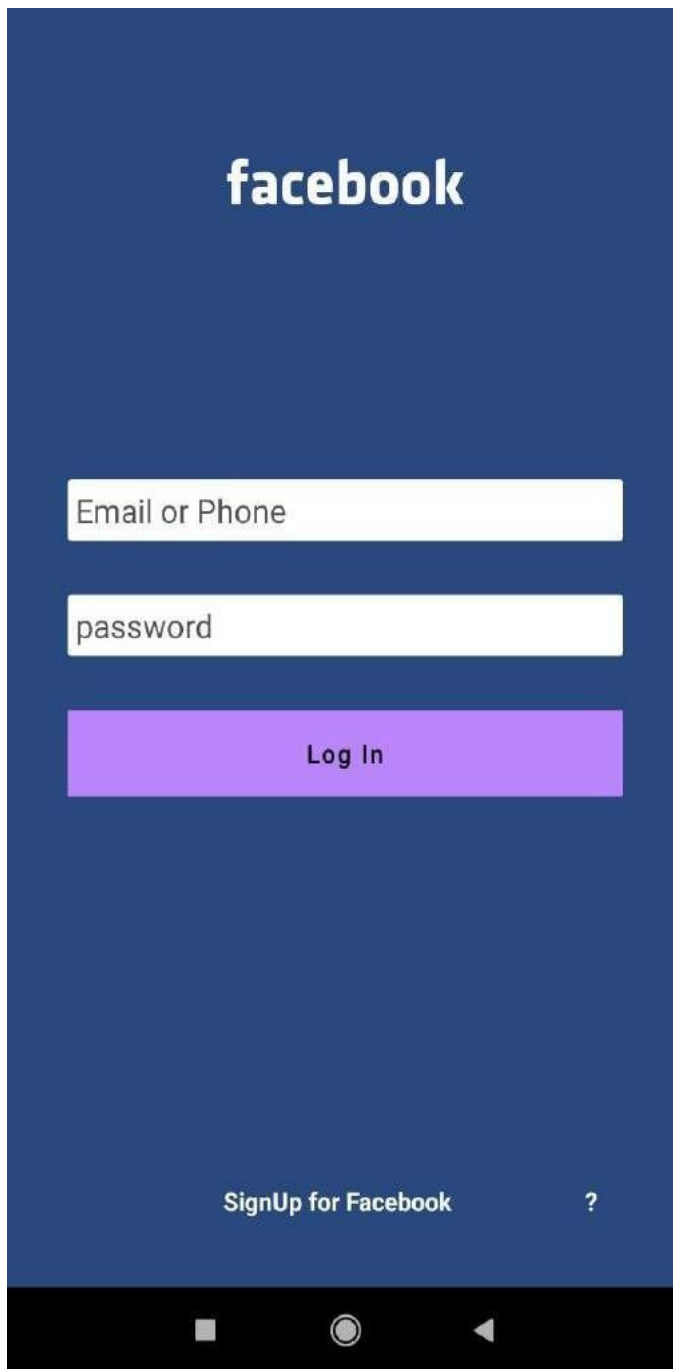
```
    protected void onCreate(Bundle savedInstanceState) {
```

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

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

```
    }
```

```
}
```

OUTPUT:

Program No: 09

Aim: Develop an application that toggles image using FrameLayout

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:background="@color/teal_700"
    tools:context=".MainActivity">
    <ImageView android:id="@+id/image2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:src="@drawable/image2"
        android:visibility="gone"/>
    <ImageView android:id="@+id/image1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:src="@drawable/image1"/>
</FrameLayout>
```

Java Code:

```

package com.example.Ancy;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    ImageView img1,img2;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        img1 =findViewById(R.id.image1);

        img2 =findViewById(R.id.image2);

        img1.setOnClickListener(this);

        img2.setOnClickListener(this);      }

        public void onClick(View v)

        {

            int id=v.getId();

            switch (id){

                case R.id.image1:

                    img1.setVisibility(View.GONE);

                    img2.setVisibility(View.VISIBLE); break;

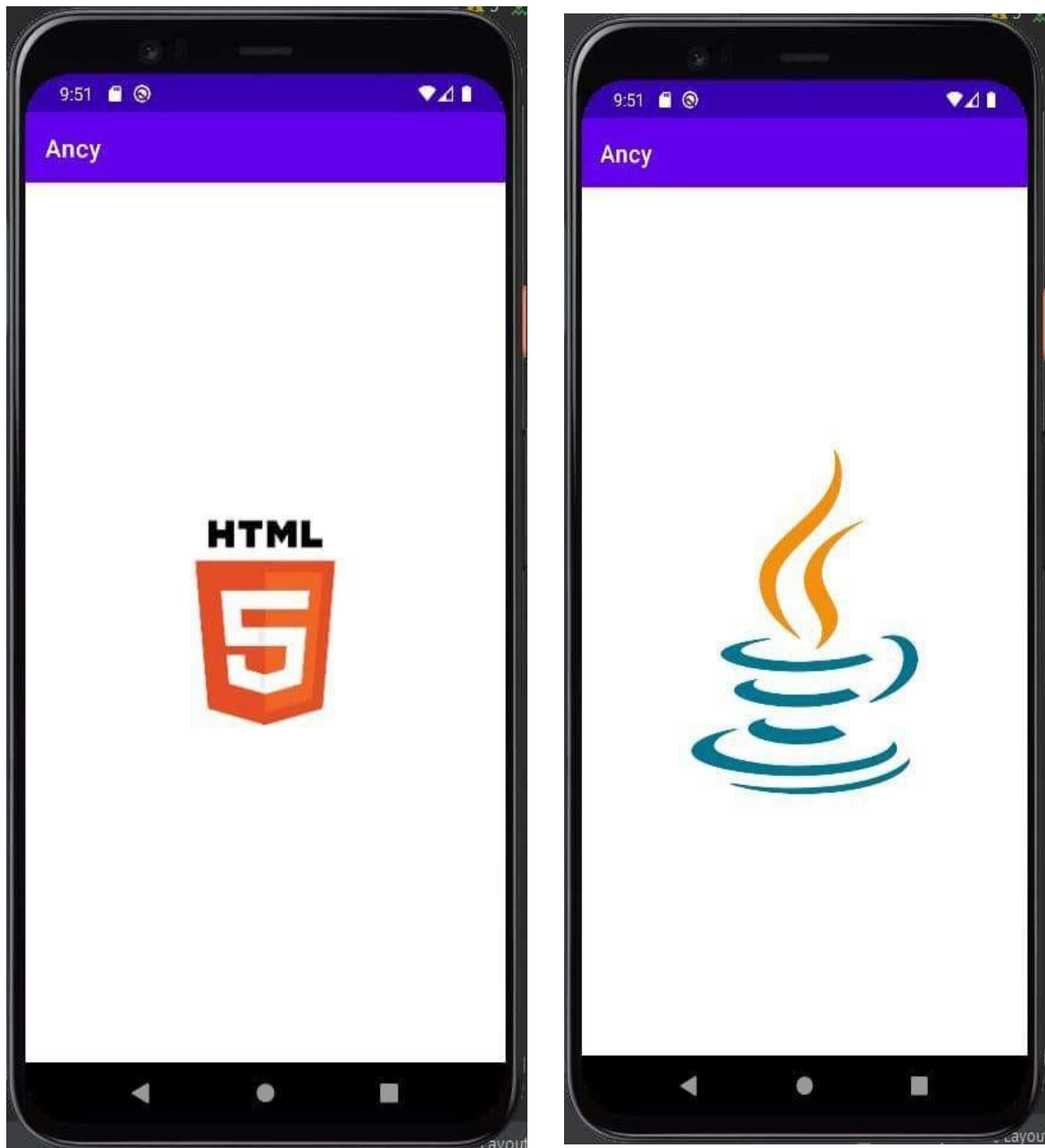
                case R.id.image2:

                    img1.setVisibility(View.VISIBLE);

                    img2.setVisibility(View.GONE); break;

```

```
}  
}  
}
```

OUTPUT:

Program No: 10**Aim:** Implement Adapters and perform exception handling**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">

<ListView android:layout_width="409dp"

android:layout_height="354dp"

tools:layout_editor_absoluteX="1dp"

tools:layout_editor_absoluteY="1dp"

android:id="@+id/list1"/>

</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.myproject;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

```

```

import android.widget.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {

    ListView l1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        String[] cars = {"BMW", "BENZ", "AUDI"};

        try {

            ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
                R.layout.support_simple_spinner_dropdown_item, cars);

            l1.setAdapter(adapter);

            l1.setOnItemClickListener(this);

        }

        catch (Exception e)

        {

            Toast.makeText(this,e.getMessage(),Toast.LENGTH_SHORT).show();

        }

    }

    @Override

    public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {

        TextView tem=(TextView) view;

        Toast.makeText(this, tem.getText(), Toast.LENGTH_LONG).show();

    }

}

```

OUTPUT:

Program No: 11

Aim: Implement Intent to navigate between multiple activities (Explicit)

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:app="http://schemas.android.com/apk/res-auto"

xmlns:tools="http://schemas.android.com/tools"

android:layout_width="match_parent"

android:layout_height="match_parent"

android:onClick="callActivity"

tools:context=".intent_activity">

<EditText

android:id="@+id/name"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:ems="10" android:hint="Name"

android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.437"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.148" />
```

```

<EditText
    android:id="@+id/address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10" android:hint="Address"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.437"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.313" />

```

```

<EditText
    android:id="@+id/email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10" android:hint="Email"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.437"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.475" />

```

```

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Submit" android:onClick="callActivity"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.454"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.609" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Display.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=".intent_act2">
    <TextView
        android:id="@+id/view3"
        android:layout_width="189dp"
        android:layout_height="36dp"
        android:textAlignment="center"

```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.398" />
<TextView
    android:id="@+id/view1"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.22" />
<TextView
    android:id="@+id/view2"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"

```

```
app:layout_constraintVertical_bias="0.306" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```
package com.example.Ancy;

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;

public class intent_activity extends AppCompatActivity {

    Button b1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_intent);
    }

    public void callActivity(View view) {
        Intent i = new Intent(intent_activity.this, intent_act2.class);
        final
        EditText editText1 = (EditText)findViewById(R.id.name); String
        msg = editText1.getText().toString();

        final EditText editText2 = (EditText)findViewById(R.id.address);
        String add = editText2.getText().toString();

        final EditText editText3 = (EditText)findViewById(R.id.email);
        String em = editText3.getText().toString();

        i.putExtra("Value1", msg);

        i.putExtra("Value2", add);
```

```

i.putExtra("Value3", em);
startActivity(i);
}
}

```

```

package com.example.Ancy;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class intent_act2 extends AppCompatActivity {

    TextView view1;

    TextView view2;

    TextView view3;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

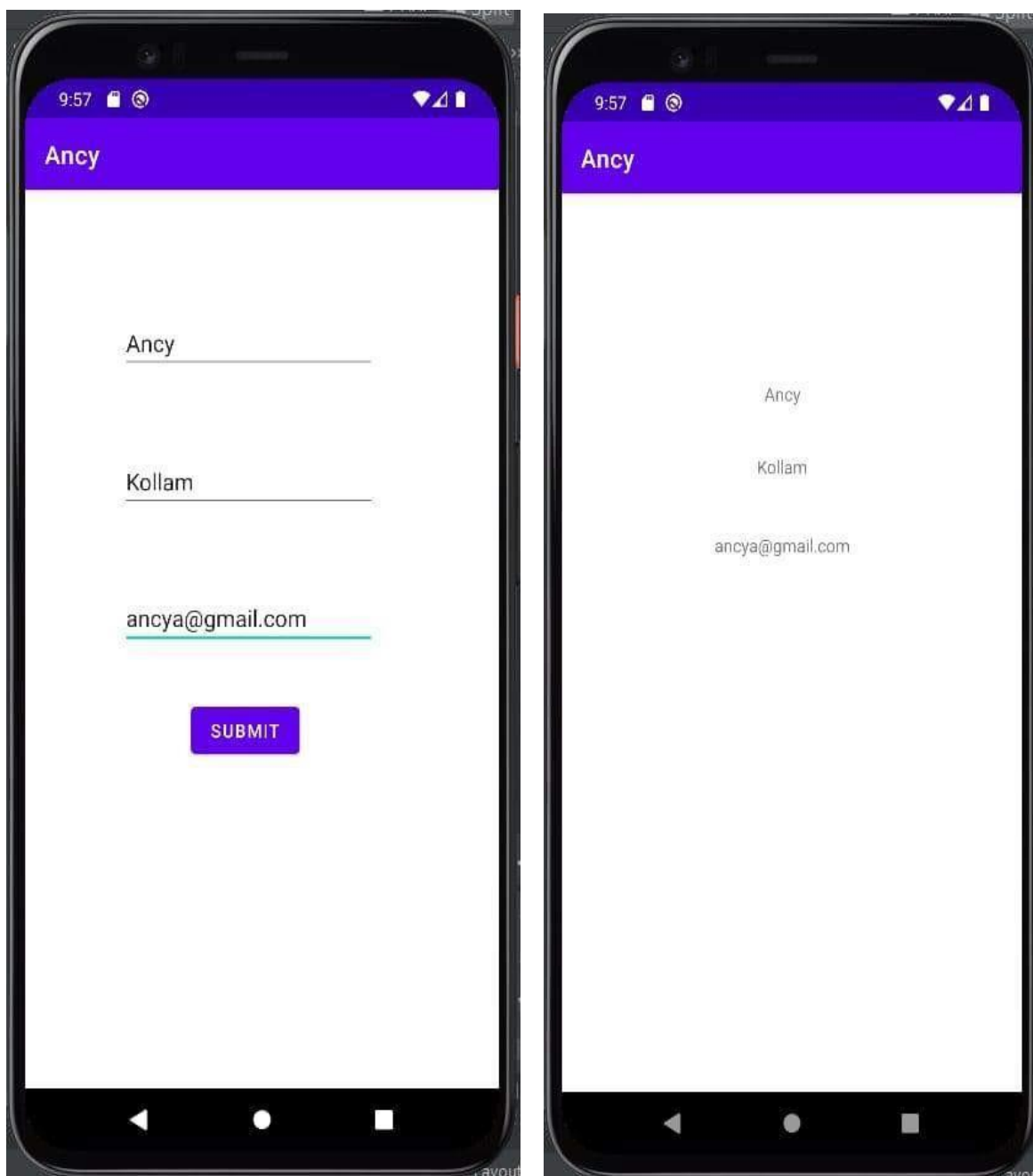
        setContentView(R.layout.activity_intent_act2); view1 =
        (TextView) findViewById(R.id.view1); view2 =
        (TextView) findViewById(R.id.view2); view3 =
        (TextView) findViewById(R.id.view3); Bundle extras =
        getIntent().getExtras();

        String value1 = extras.getString("Value1");
        String value2 = extras.getString("Value2");
        String value3 = extras.getString("Value3");

        view1.setText(value1); view2.setText(value2);
        view3.setText(value3);
    }
}

```

```
}  
}
```

OUTPUT:

Program No: 12

Aim: Develop an application that works with Implicit intents

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=".explicit">
<Button
android:id="@+id/cm"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Refer Google"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```
package com.example.implicit;
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;

import android.net.Uri;

import android.net.UriQuerySanitizer;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;


public class explicit extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_explicit);

        Button click = findViewById(R.id.cm);

        click.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View view) {

                Intent j = new Intent(Intent.ACTION_VIEW,

                Uri.parse("https://www.google.com/"));

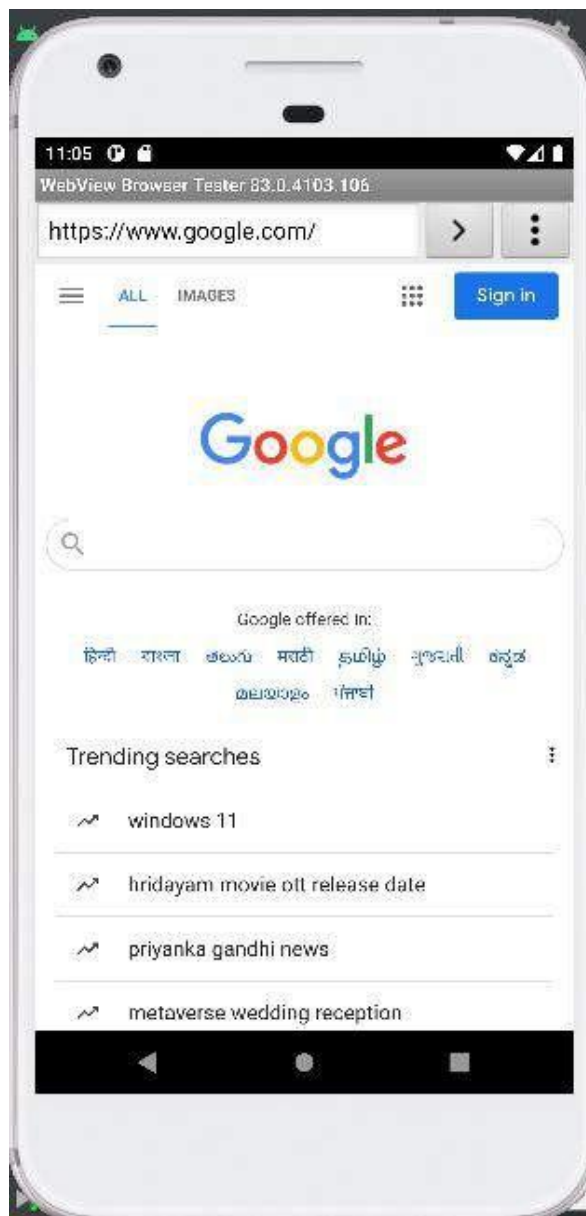
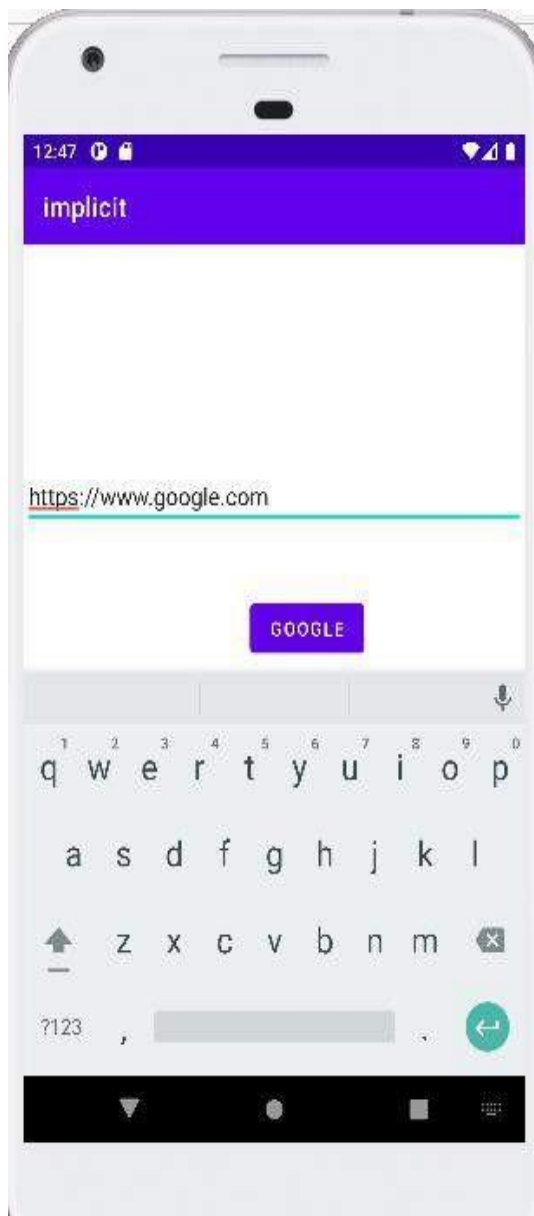
                startActivity(j);

            }

        });

    }

}
```

OUTPUT:

Program No: 13

Aim: Implement Options Menu to navigate to activities

XML Code:

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

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

<item android:id="@+id/item1" android:title="Home"/>

<item android:id="@+id/item2" android:title="Settings"/>

<item android:id="@+id/item3" android:title="About"/>

<item android:id="@+id/item4" android:title="Help"/>

<item android:id="@+id/item5" android:title="LogOut"/>

</menu>

<?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=".menu_bar">

<TextView

android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Welcome..."
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
```

```

app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle; import
android.view.Menu; import
android.view.MenuItem; import
android.widget.Toast;

public class menu_bar extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_menu_bar);
    }

    @Override

    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu_list, menu);
        return true;
    }

    @Override

    public boolean onOptionsItemSelected(MenuItem item) {
        switch (item.getItemId()) {

```

```
case R.id.item1:

    Toast.makeText(getApplicationContext(), "Home clicked",
    Toast.LENGTH_SHORT).show();

    return true; case

R.id.item2:

    Toast.makeText(getApplicationContext(), "Settings clicked",
    Toast.LENGTH_SHORT).show();

    return true; case

R.id.item3:

    Toast.makeText(getApplicationContext(), "About clicked",
    Toast.LENGTH_SHORT).show();

    return true; case

R.id.item4:

    Toast.makeText(getApplicationContext(), "Help clicked",
    Toast.LENGTH_SHORT).show();

    return true;

case R.id.item5:

    Toast.makeText(getApplicationContext(), "Logout clicked",
    Toast.LENGTH_SHORT).show();

    return true;

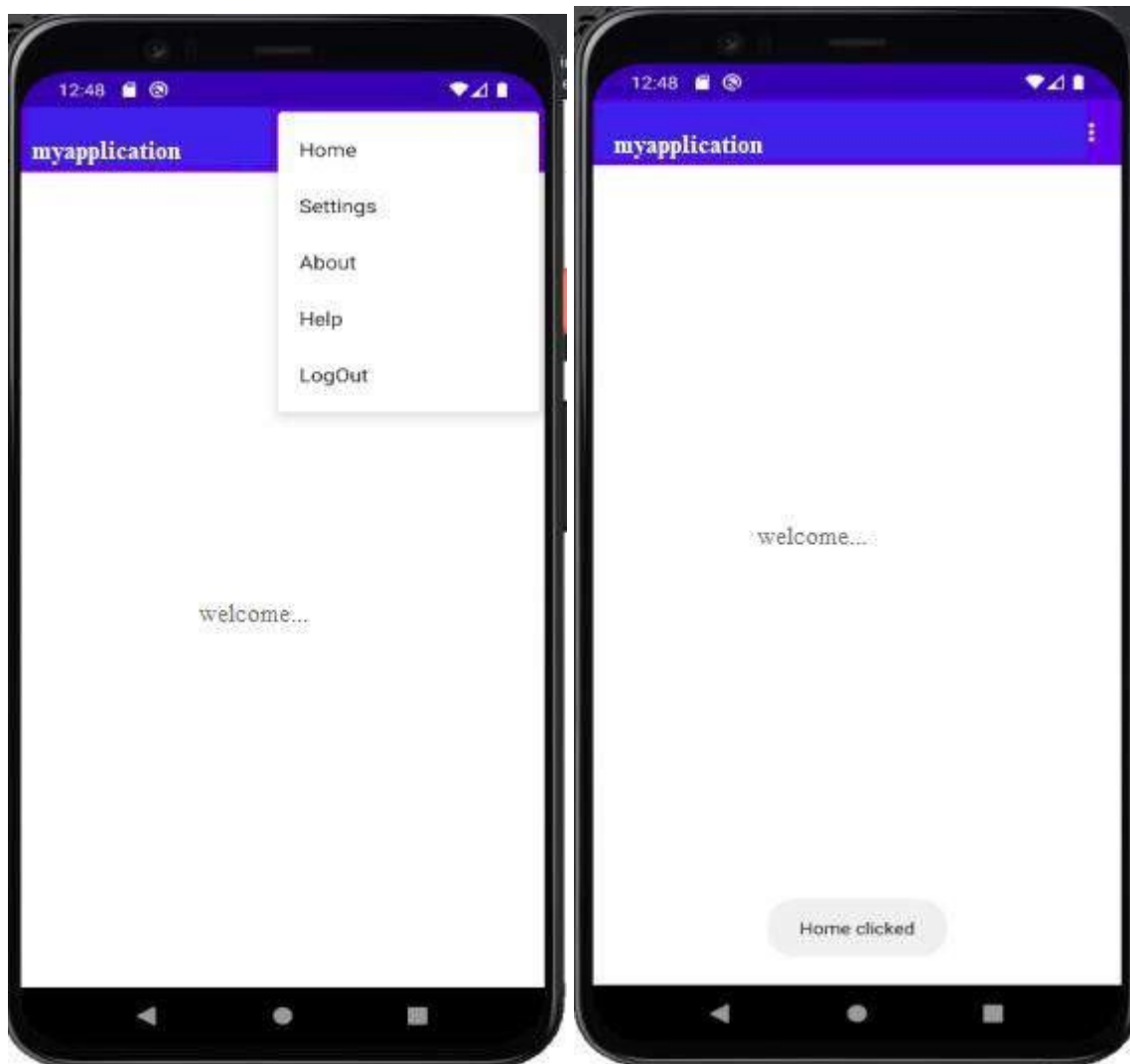
default:

    return super.onOptionsItemSelected(item);

}

}

}
```

OUTPUT:

Program No: 14

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<ListView
android:id="@+id/simpleListView"
android:layout_width="match_parent"
android:layout_height="wrap_content" />

</RelativeLayout>
```

Java Code:

```
package com.example.List_view;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
{
```



```

ListView simpleListView;

// array objects

String country[] = {"India", "England", "America", "Africa",
"Paris", "China", "Japan"};

@Override

protected void onCreate(Bundle savedInstanceState)
{

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

simpleListView=(ListView)
findViewById(R.id.simpleListView);

ArrayAdapter<String> arrayAdapter = new ArrayAdapter<String>(this,

R.layout.item_view, R.id.itemTextView,
country);

simpleListView.setAdapter(arrayAdapter);

}

}

```

Item_View.xml

```

<?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">

<TextView

android:id="@+id/itemTextView"

android:layout_width="match_parent"

android:layout_height="wrap_content"

```

```
android:layout_gravity="center" />
```

```
</LinearLayout>
```

OUTPUT:



Program No: 15

Aim : Program to develop an application that use GridView with images and display Alert box on selection

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">

<GridView android:id="@+id/idGVcourses"

android:layout_width="match_parent"

android:layout_height="match_parent"

android:horizontalSpacing="6dp"

android:numColumns="2"

android:verticalSpacing="6dp" />

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

#carditem.xml

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

<!--XML implementation of Card Layout-->

<androidx.cardview.widget.CardView

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

xmlns:app="http://schemas.android.com/apk/res-auto"

android:layout_width="match_parent" android:layout_height="120dp"

android:layout_gravity="center"

android:layout_margin="5dp"

app:cardCornerRadius="5dp"

app:cardElevation="5dp">

<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:orientation="vertical">

<ImageView android:id="@+id/image"

android:layout_width="100dp"

android:layout_height="100dp"

android:layout_gravity="center"

android:src="@mipmap/ic_launcher" />

<TextView android:id="@+id/flower"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:text="@string/app_name"

android:textAlignment="center" />
```

```
</LinearLayout>

</androidx.cardview.widget.CardView>
```

Java Code:

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;

import android.widget.GridView;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

    GridView images;
    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        coursesGV = findViewById(R.id.idimages);

        ArrayList<image> imageArrayList; imageArrayList =
        new ArrayList<image>();

        imageArrayList.add(new image("HTML", R.drawable.img));

        imageArrayList.add(new image("JAVA", R.drawable.img_1));

        imageArrayList.add(new image("JSP",R.drawable.img_2));

        imageArrayList.add(new image("PHP", R.drawable.img_3));

        imageArrayList.add(new image("PYTHON", R.drawable.img_4));

        imageArrayList.add(new image("SQL", R.drawable.img_5)); imageAdapter adapter
```

```

= new imageAdapter(this, imageArrayList); image.setAdapter(adapter) }

}
#Adapter

package com.example.myapplication; import

android.content.Context; import

android.view.LayoutInflater; import

android.view.View;

import android.view.ViewGroup; import

android.widget.AdapterView; import

android.widget.ImageView; import

android.widget.TextView; import

androidx.annotation.NonNull; import

androidx.annotation.Nullable; import

java.util.ArrayList;

public class imageAdapter extends ArrayAdapter<image> {

public imageAdapter(@NonNull Context context, ArrayList<image>
imageArrayList) {

super(context, 0, imageArrayList);

}

@NonNull

@Override

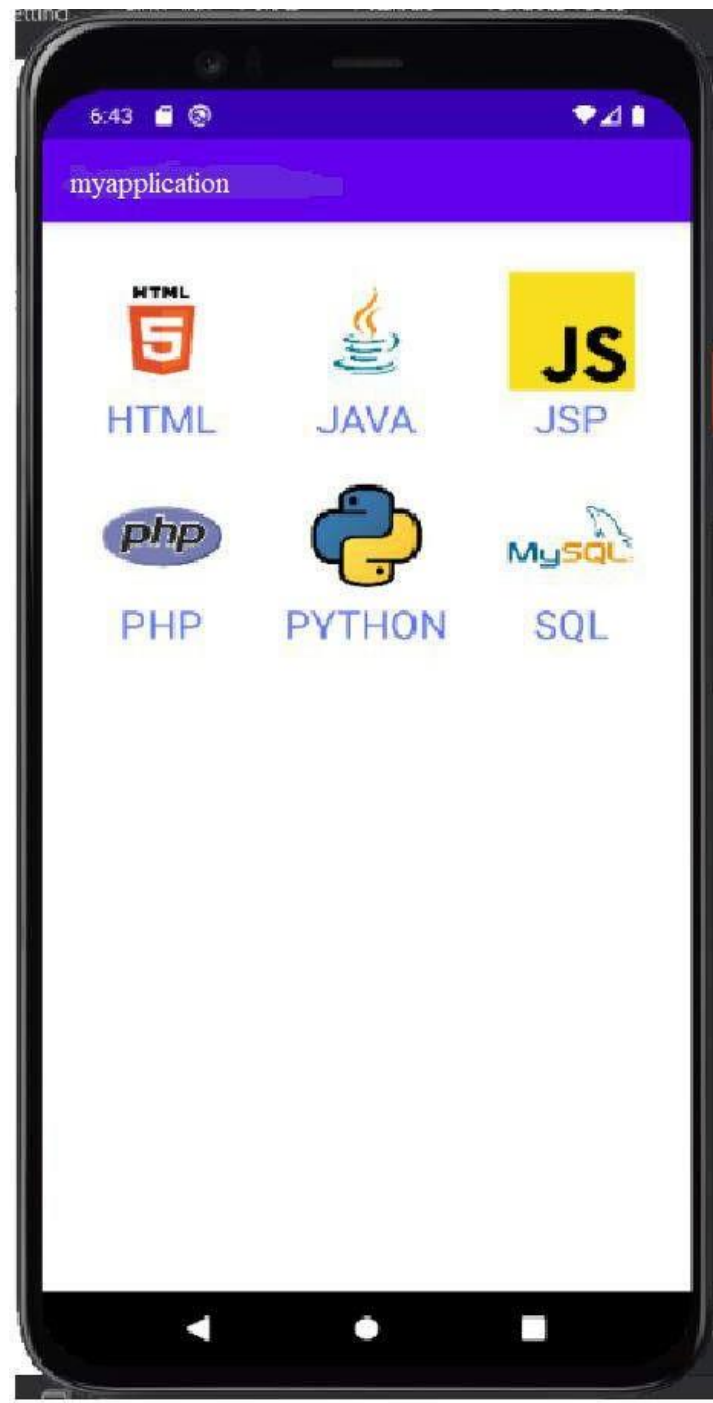
public View getView(int position, @Nullable View convertView, @NonNull ViewGroup
parent) {

View listitemView = convertView; if

```

```
(listitemView == null) {  
  
    // Layout Inflater inflates each item to be displayed in GridView.  
  
    listitemView = LayoutInflater.from(getContext()).inflate(R.layout.card_item, parent,  
        false);  
  
    }  
  
    Image image = getItem(position);  
  
    TextView image = listitemView.findViewById(R.id.flower); ImageView  
  
    image = listitemView.findViewById(R.id.image);  
  
    courseTV.setText(image.getCourse_name());  
  
    courseIV.setImageResource(image.getImgid());  
  
    return listitemView;  
  
    }  
  
    }
```

OUTPUT



Program No: 16

AIM : Program to develop an application that implements Spinner component and perform event handling.

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">
<Spinner
android:id="@+id/spinner"
android:layout_width="197dp"
android:layout_height="70dp"
tools:layout_editor_absoluteX="92dp"
tools:layout_editor_absoluteY="297dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.502"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.48"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```

package com.example.spinnercomponents;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;

import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
implements AdapterView.OnItemClickListener {

String[] country ={"india","china","japan","other"};

@Override

protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Spinner spin =(Spinner) findViewById(R.id.spinner);
spin.setOnItemClickListener(this);

ArrayAdapter aa = new
ArrayAdapter(this,android.R.layout.simple_spinner_item,country);
aa.setDropDownViewResource(android.R.layout.simple_spinner_item);
spin.setAdapter(aa);
}

@Override

public void onItemClick(AdapterView<?> arg0, View arg1, int position, long id){

Toast.makeText(getApplicationContext(),country[position],Toast.LENGTH_LONG).show()
;

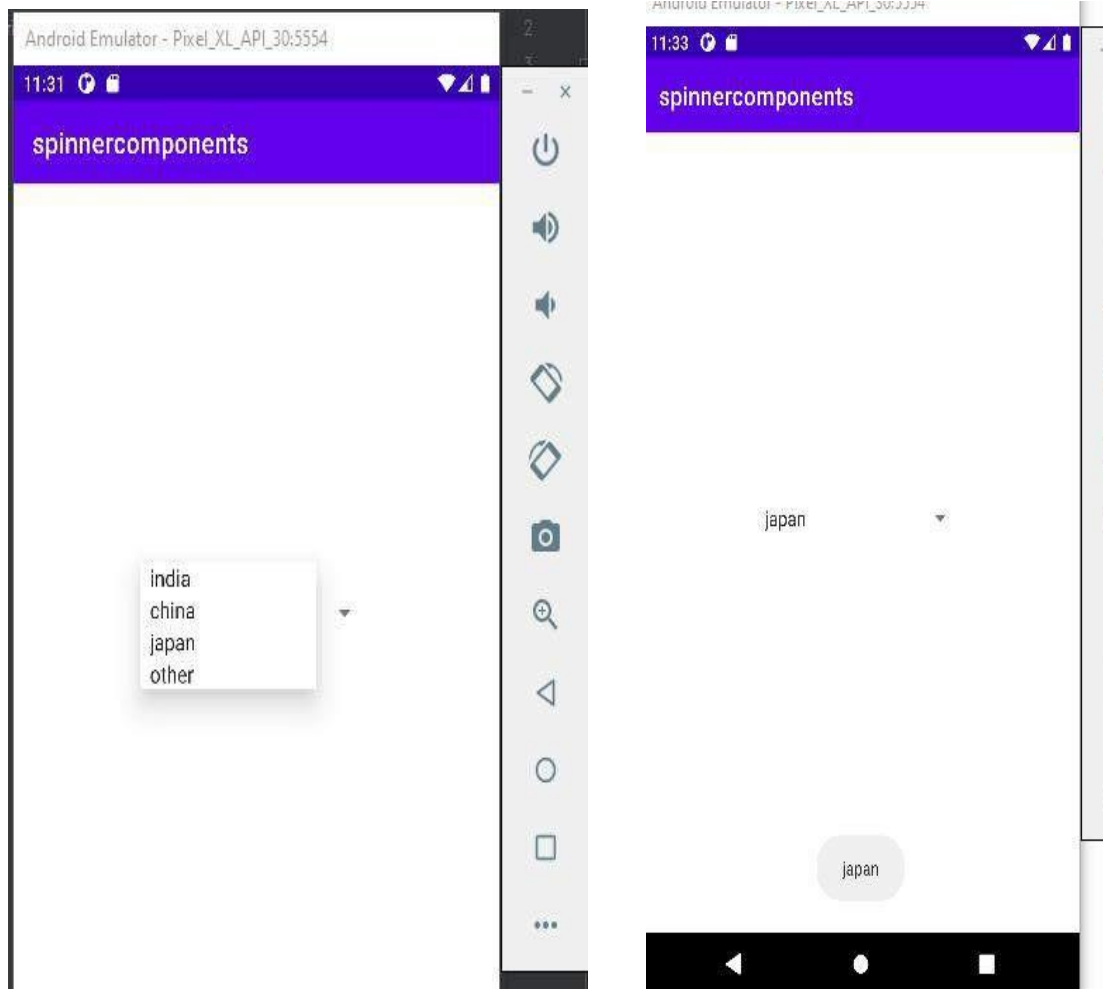
}

@Override

```

```
public void onNothingSelected(AdapterView<?>arg0){  
  
}  
  
}
```

OUTPUT



Program No: 17

Aim: Program to apply themes via code from manifest file.

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:gravity="center"
    tools:context=".MainActivity">

    <EditText android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"/>

</LinearLayout>
//color.xml

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

<resources>

    <color name="orange">#6076F1</color>

    <color name="teal">#6076F1</color>

    <color name="blue">#00BCD4</color>

</resources>

//themes.xml
```

```

<resources xmlns:tools="http://schemas.android.com/tools">

<!-- Base application theme. -->

<style name="Theme.myapplication"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">

<item name="colorPrimary">@color/black</item>

<item name="colorPrimaryDark">@color/orange</item>

<item name="colorAccent">@color/teal</item>

<item name="android:textColorPrimary">@color/blue</item>

</style>

</resources>

```

//AndroidManifest.xml

```

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

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

package="com.example.myapplication">

<application android:allowBackup="true"

android:icon="@mipmap/ic_launcher"

android:label="@string/app_name"

android:roundIcon="@mipmap/ic_launcher_round"

android:supportsRtl="true"

android:theme="@style/Theme.myapplication">

<activity

android:name=".MainActivity"

android:exported="true">

```

```

<intent-filter>

<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

</activity>

<meta-data android:name="preloaded_fonts"

android:resource="@array/preloaded_fonts" />

</application>

</manifest>

```

Java Code:

```

package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;

public class theme extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_theme);

}

}

```

OUTPUT:

Program No: 18**Aim:** Program to develop application using Fragments**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:orientation="vertical"
    tools:context=".MainActivity">

    <RelativeLayout android:layout_width="match_parent"
        android:layout_height="0dp" android:layout_weight="1">

        <Button android:id="@+id/b1"
            android:layout_width="160dp"
            android:layout_height="50dp"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="30dp"
            android:layout_marginBottom="30dp"
            android:backgroundTint="#2196F3"
            android:text="Fragment1" />

        <Button android:id="@+id/b2"
            android:layout_width="160dp"
            android:layout_height="50dp"
            android:layout_alignParentRight="true"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="30dp"

```



```

android:layout_marginBottom="30dp"
android:backgroundTint="#FFC107"
android:text="Fragment2" />
</RelativeLayout>

<FrameLayout android:id="@+id/frameLayout"
android:layout_width="match_parent"
android:layout_height="0dp" android:layout_weight="4"
android:background="@color/purple_200"/>
</LinearLayout>

```

Java code:

```

package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity; import
androidx.fragment.app.Fragment;

import androidx.fragment.app.FragmentManager; import
androidx.fragment.app.FragmentTransaction; import
android.os.Bundle;

import android.view.View; import
android.widget.Button;

public class MainActivity extends AppCompatActivity { Button
b1,b2;

@Override

protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

b1=findViewById(R.id.b1); b2=findViewById(R.id.b2);

b1.setOnClickListener(new View.OnClickListener() {

```

```

@Override

public void onClick(View v) {
    replaceFragment(new Fragment1());

} });

b2.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) { replaceFragment(new Fragment2());

                                } });

                                }

private void replaceFragment(Fragment fragment) {

FragmentManager fragmentManager=getSupportFragmentManager();

FragmentManager
fragmentTransaction=fragmentManager.beginTransaction();

fragmentTransaction.replace(R.id.frameLayout,fragment); fragmentTransaction.commit(); } }

#fragment1

package com.example.fragment; import

android.os.Bundle;

import androidx.fragment.app.Fragment; import

android.view.LayoutInflater; import

android.view.View;

import android.view.ViewGroup;

public class Fragment1 extends Fragment {

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle

savedInstanceState)

```

```
// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment_1, container, false);

} }

#fragment2

package com.example.fragment; import

android.os.Bundle;

import androidx.fragment.app.Fragment; import

android.view.LayoutInflater; import

android.view.View;

import android.view.ViewGroup;

public class Fragment2 extends Fragment {

@Override

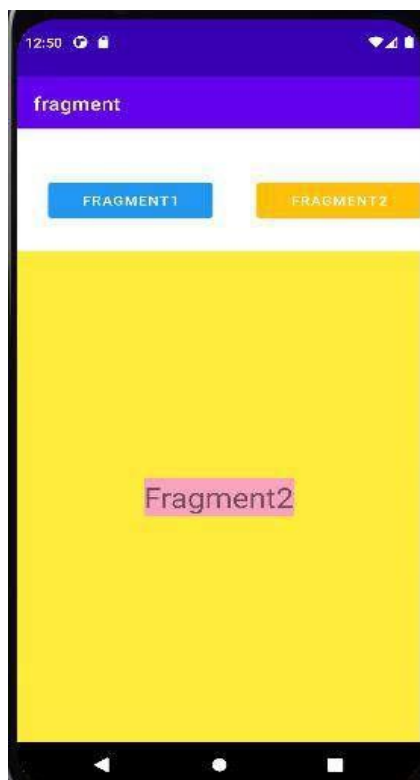
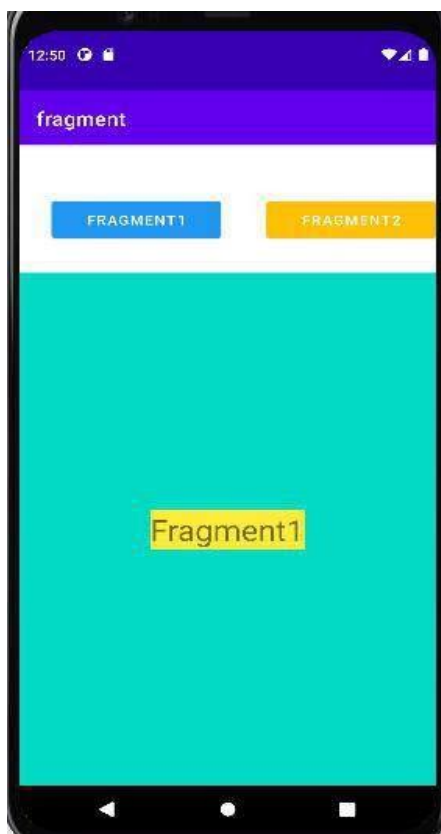
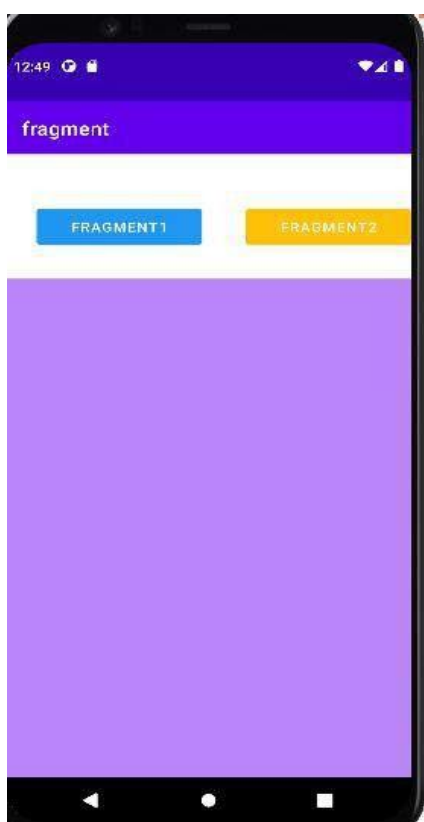
Public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle

savedInstanceState) {

// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment_2, container, false); } }
```

OUTPUT



Program No: 19

Aim: Program to implement Navigation drawer.

XML Code :

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

<androidx.drawerlayout.widget.DrawerLayout

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=".navigation"

android:id="@+id/drawer">

<LinearLayout

android:layout_width="match_parent"

android:layout_height="match_parent">

<TextView android:layout_width="match_parent"

android:layout_height="match_parent"

android:text="Hello \nWelcome back"

android:textSize="30dp">

</TextView>

</LinearLayout>

<com.google.android.material.navigation.NavigationView

android:layout_width="match_parent"

android:layout_height="match_parent" app:menu="@menu/menu">
```

```

android:id="@+id/navigation_view" android:layout_gravity="start">

</com.google.android.material.navigation.NavigationView>

</androidx.drawerlayout.widget.DrawerLayout>

```

Java Code:

```

package com.example.myapplication;

import androidx.annotation.NonNull;

import androidx.appcompat.app.ActionBarDrawerToggle; import
androidx.appcompat.app.AppCompatActivity; import
androidx.drawerlayout.widget.DrawerLayout; import
android.os.Bundle;

import android.view.MenuItem;
import android.widget.Toast;

import com.google.android.material.navigation.NavigationView; public
class navigation extends AppCompatActivity implements
NavigationView.OnNavigationItemSelectedListener { public
DrawerLayout drawerLayout;

public ActionBarDrawerToggle actionBarDrawerToggle;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_navigation); drawerLayout =
findViewById(R.id.drawer);

actionBarDrawerToggle = new ActionBarDrawerToggle(this, drawerLayout,
R.string.nav_open, R.string.nav_close);

drawerLayout.addDrawerListener(actionBarDrawerToggle);

```

```

actionBarDrawerToggle.syncState();

getSupportActionBar().setDisplayHomeAsUpEnabled(true); NavigationView

navigationView = findViewById(R.id.navigation_view);

navigationView.setNavigationItemSelectedListener(this);

}

@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) { if

(actionBarDrawerToggle.onOptionsItemSelected(item)) {

return true;

}

return super.onOptionsItemSelected(item);

}

@Override

public boolean onNavigationItemSelected(@NonNull MenuItem item) { int id =

item.getItemId();

if (id == R.id.account) {

Toast.makeText(this, "Home ", Toast.LENGTH_SHORT).show();

}

if (id == R.id.profile) { Toast.makeText(this,

"Settings ",

Toast.LENGTH_SHORT).show(); } if (id ==

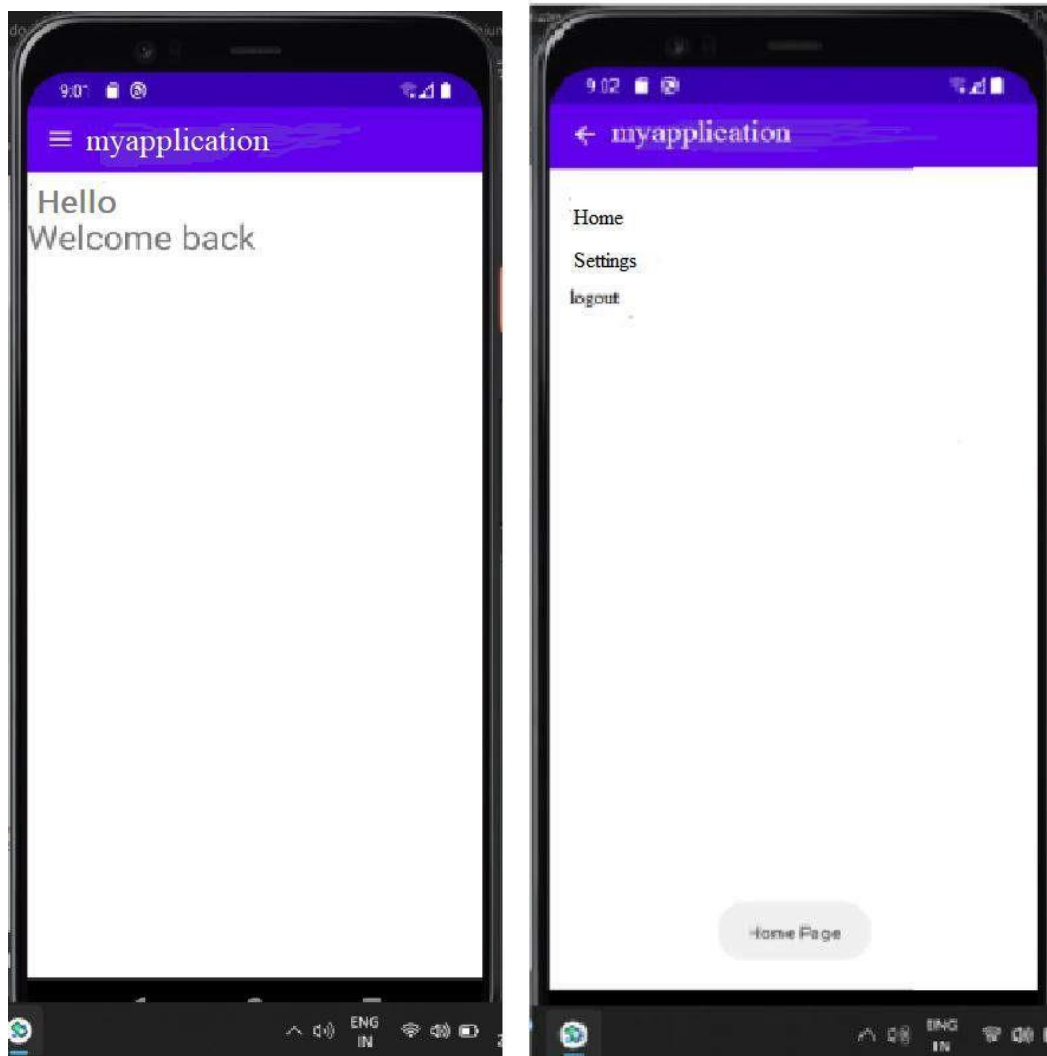
R.id.logout) {

Toast.makeText(this, "Logout", Toast.LENGTH_SHORT).show();

}return false } }

```

OUTPUT



Program no: 20

Aim: Program to implement activity life cycle.

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:background="#2196F3"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Activity life cycle"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    android:textSize="25dp"
    android:textColor="@color/white"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code:

```
package com.example.myapplication11;

import android.os.Bundle;
import android.util.Log;

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

```
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.i("State","onCreate");
    }

    @Override
    protected void onStart() {
        super.onStart();
        Log.i("State","onStart");
    }

    @Override
    protected void onResume() {
        super.onResume();
        Log.i("State","onResume");
    }

    @Override
    protected void onPause() {
        super.onPause();
        Log.i("State","onCreate");
    }

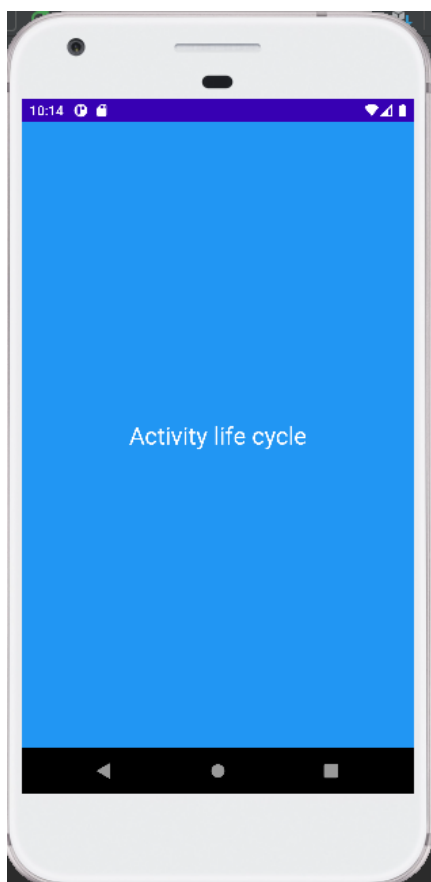
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.i("State","onRestart");
    }

    @Override
    protected void onStop() {
        super.onStop();

        Log.i("State","onStop");
    }
}
```

```
}  
@Override  
protected void onDestroy() {  
    super.onDestroy();  
    Log.i("State","onDestroy");  
}  
}
```

Output



```
2022-03-03 10:18:23.184 8439-8439/com.example.myapplication11 I/State: onCreate
2022-03-03 10:18:23.198 8439-8439/com.example.myapplication11 I/State: onStart
2022-03-03 10:18:23.201 8439-8439/com.example.myapplication11 I/State: onResume
2022-03-03 10:18:31.449 8439-8439/com.example.myapplication11 I/State: onCreate
2022-03-03 10:18:32.719 8439-8439/com.example.myapplication11 I/State: onStop
2022-03-03 10:18:38.043 8439-8439/com.example.myapplication11 I/State: onRestart
2022-03-03 10:18:38.046 8439-8439/com.example.myapplication11 I/State: onStart
2022-03-03 10:18:38.050 8439-8439/com.example.myapplication11 I/State: onResume
```

Program no: 21

Aim: Program to Perform INSERT, UPDATE, VIEW and DELETE on SQLite database

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:layout_gravity="center"
    android:background="#2196F3"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:orientation="vertical"
        app:cardCornerRadius="15dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:background="@color/white"
            android:orientation="vertical">

            <TextView
                android:layout_width="wrap_content"
```

```

android:layout_height="wrap_content"
android:layout_gravity="center"
android:layout_marginTop="7dp"
android:layout_marginBottom="10dp"
android:text="Form"
android:textColor="#2196F3"
android:textSize="40dp"
android:textStyle="bold" />

```

```

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

```

```

<EditText
    android:id="@+id/uid"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:layout_weight="1"
    android:hint="id" />

```

```

<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:layout_weight="1"
    android:hint="name" />

```

```

</LinearLayout>

```

```

<LinearLayout
    android:layout_width="match_parent"

```

```
android:layout_height="wrap_content"  
android:orientation="horizontal">
```

```
<EditText  
android:id="@+id/email"  
android:gravity="center"  
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_margin="20dp"  
android:layout_weight="1"  
android:hint="email" />
```

```
</LinearLayout>
```

```
<LinearLayout  
android:layout_width="match_parent"  
android:layout_height="wrap_content">
```

```
<Button  
android:id="@+id/insert"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="20dp"  
android:text="Insert" />
```

```
<Button  
android:id="@+id/view"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="20dp"  
android:text="view" />
```

</LinearLayout>

<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content">

<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content">

<Button

android:id="@+id/update"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_margin="20dp"

android:text="update" />

<Button

android:id="@+id/delete"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_margin="20dp"

android:text="delete" />

</LinearLayout>

</LinearLayout>

</LinearLayout>

</LinearLayout>


```
</LinearLayout>
```

Java code:

```
package com.example.myapplication11;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        DBHelper DB = new DBHelper(this);
        EditText name = findViewById(R.id.name);
        EditText id = findViewById(R.id.uid);
        EditText email = findViewById(R.id.email);
        Button insert = findViewById(R.id.insert);
        Button update = findViewById(R.id.update);
        Button delete = findViewById(R.id.delete);
        Button view = findViewById(R.id.view);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```

String nametxt = name.getText().toString();
String idtxt = id.getText().toString();
String emailtxt = email.getText().toString();
Boolean checkinsertdata = DB.insertuserdata(idtxt, nametxt, emailtxt);
if (checkinsertdata) {
    Toast.makeText(MainActivity.this, "Data inserted", Toast.LENGTH_LONG).show();
} else {
    Toast.makeText(MainActivity.this, "Nothing Happened",
    Toast.LENGTH_SHORT).show();
}
});
update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nametxt = name.getText().toString();
        String idtxt = id.getText().toString();
        String emailtxt = email.getText().toString();
        Boolean checkinsertdata = DB.updatedata(idtxt, nametxt, emailtxt);
        if (checkinsertdata) {
            Toast.makeText(MainActivity.this, "Data updated", Toast.LENGTH_LONG).show();
        } else {
            Toast.makeText(MainActivity.this, "Nothing", Toast.LENGTH_SHORT).show();
        }
    }
});
delete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nametxt = name.getText().toString();
        String idtxt = id.getText().toString();
        String emailtxt = email.getText().toString();
        Boolean checkinsertdata = DB.deletedata(idtxt);
        if (checkinsertdata) {

```

```

Toast.makeText(MainActivity.this, "deleted", Toast.LENGTH_LONG).show();
    } else {
        Toast.makeText(MainActivity.this, "Nothing", Toast.LENGTH_SHORT).show();
    }
}

});

view.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
    Cursor res = DB.getdata();
    if (res.getCount() == 0) {
        Toast.makeText(MainActivity.this, "No entry", Toast.LENGTH_SHORT).show();
    } else {
        StringBuffer buffer = new StringBuffer();
        while (res.moveToNext()) {
            buffer.append("id : " + res.getString(0) + "\n");
            buffer.append("Name : " + res.getString(1) + "\n");
            buffer.append("email : " + res.getString(2) + "\n");
        }
        AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
        builder.setCancelable(true);
        builder.setTitle("User Entries");
        builder.setMessage(buffer.toString());
        builder.show();
    }
}
});
}
}

```

DBHelper.java

```

package com.example.myapplication11;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;

```

```

import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Userdata.db", null, 1);
    }
    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(id TEXT primary key,name text,email text)");
    }
    @Override
    public void onUpgrade(SQLiteDatabase DB, int oldVersion, int newVersion) {
        DB.execSQL("DROP TABLE if exists Userdetails");
    }
    public Boolean insertuserdata(String id, String name, String email) {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("id", id);
        contentValues.put("name", name);
        contentValues.put("email", email);
        long result = DB.insert("Userdetails", null, contentValues);
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }

    public Boolean updatedata(String id, String name, String email) {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name", name);
        contentValues.put("email", email);
        Cursor cursor = DB.rawQuery("select * from Userdetails where id=?", new

```

```

String[]{id});
    if (cursor.getCount() > 0) {
        long result = DB.update("Userdetails", contentValues, "id=?", new String[]{id});
        if (result == -1) {
            return false;
        } else {
            return true;
        }

    } else{
        return false;}

}

public Boolean deletedata(String id) {
    SQLiteDatabase DB = this.getWritableDatabase();
    Cursor cursor = DB.rawQuery("Select * from Userdetails where id=?", new String[]{id});
    if (cursor.getCount() > 0) {
        long result = DB.delete("Userdetails", "id=?", new String[]{id});
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    } else {
        return false;
    }
}

public Cursor getdata() {
    SQLiteDatabase DB = this.getWritableDatabase();
    Cursor cursor = DB.rawQuery("Select * from Userdetails", null);
    return cursor;
}

```

Output

