

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

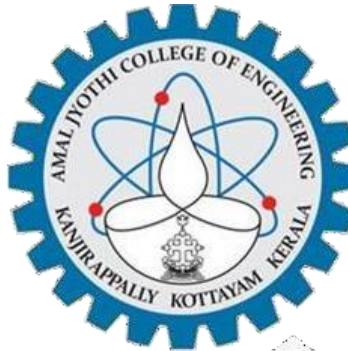
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Reg. No.: AJC20MCA-2082

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 **TONY JOSEPH (Reg.No: AJC20MCA-2082)** 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.

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CONTENT

S.No	Content	Date	Page No:
1	Design a Login Form with username and password using LinearLayout and toast valid credentials.		1
2	Write a program that demonstrates Activity Lifecycle.		6
3	Implementing basic arithmetic operations of a simple calculator		9
4	Implement validations on various UI controls		16
5	Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences		25
6	Design a simple Calculator using GridLayout and Cascaded LinearLayout		34
7	Create a Facebook page using RelativeLayout; set properties using .xml file		43
8	Develop an application that toggles image using FrameLayout		48
9	Implement Adapters and perform exception handling		52
10	Implement Intent to navigate between multiple activities		55
11	Develop application that works with explicit intents		58
12	Implement Options Menu to navigate to activities		66
13	Develop an application that uses ArrayAdapter with ListView.		71

14	Develop an application that use GridView with images and display Alert box on selection		76
15	Develop an application that implements Spinner component and perform event handling		80
16	Apply themes via code and manifest file		85
17	Develop application using Fragments		88
18	Implement Navigation drawer		96
19	Program to implement various SQLite operations: (INSERT, UPDATE ,DELETE ,SELECT)		101

Program 1

Aim: Program to 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:orientation="vertical"
android:gravity="center"

android:background="@drawable/login"
android:layout_height="match_parent"
tools:context=".Login">
<TextView android:id="@+id/txtlg"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:fontFamily="@font/archivo_black"android:text="Login"
android:textSize="50dp"/>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp">
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/edturn"

android:layout_width="match_parent"

android:layout_height="wrap_conte
```

nt"android:hint="Username"

style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">

<com.google.android.material.textfield.TextInputEditText android:layout_width="match_parent"
android:layout_height="wrap_content"android:inputType="text"/>

</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfi

eld.TextInputLayout

android:id="@+id/edtpswd"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:hint="Password"

style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">

<com.google.android.material.textfield.TextInputEditText android:layout_width="match_parent"
android:layout_height="wrap_content"android:inputType="text"/>

</com.google.android.material.textfield.TextInputLayout>

</LinearLayout>

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

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Login"/>

</LinearLayout>

Java Code:

```

package com.example.vaidyakare;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import android.widget.TextView;
import android.widget.Toast;
import com.google.android.material.textfield.TextInputLayout;
public class Login extends AppCompatActivity {
    TextView t1;
    TextInputLayout e1, e2;
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState)

        {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_login);
            t1 = findViewById(R.id.txtlgn);
            e1 = findViewById(R.id.edturn);
            e2= findViewById(R.id.edtpswd);

            b1 =findViewById(R.id.btnlgn);

            b1.setOnClickListener(new View.OnClickListener() { @Override
            public void onClick(View v) {

                String username = e1.getText().getText().toString().trim();
                String password = e2.getText().getText().toString().trim();
                if (username.equals("")){

```

```
Toast.makeText(Login.this, "Enter your username",Toast.LENGTH_SHORT).show();
}

else if(password.equals(""))
{ Toast.makeText(Login.this, "Enter your password",Toast.LENGTH_SHORT).show();
}
else{
Intent j = new
Intent(Login.this,Dashboard.class);
if(username.equals("admin"))
{

    j.putExtra("usrn",username);startActivity(j);

}

else if(username.equals("patient"))
{
j.putExtra("usrn",username);
startActivity(j);
}
Else
{
Toast.makeText(Login.this, "Invalid user", Toast.LENGTH_SHORT).show();
}
}
});
}
```


Output:

Program: 2

Aim : Write a program that demonstrates Activity Lifecycle.

XML File

```
<?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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello Teena!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

<?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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello Teena!"
        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 File

```

package com.example.activity;

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:

```
D/lifecycle: onCreate invoked  
D/lifecycle: onStart invoked  
D/lifecycle: onResume invoked  
D/lifecycle: onPause invoked  
D/lifecycle: onStop invoked  
D/lifecycle: onDestroy invoked
```

Program no: 3

Aim: Implementing basic arithmetic operations of a simple calculator

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/et2"
        android:layout_width="308
        dp"
        android:layout_height="63
        dp" android:ems="10"
        android:hint="Enter second number"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.533"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.263" />

    <Button
        android:id="@+id/btn1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ADD"

        app:layout_constraintBottom_toBottomOf="parent"
```

```

    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.321"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.386" />
<Button
    android:id="@+id/btn2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

    android:text="SUB"

    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.738"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.387" />
<Button
    android:id="@+id/btn3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="MUL"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.321"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.499" />
<Button
    android:id="@+id/btn4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

```

```

        android:text="DIV"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.738"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

<EditText android:id="@+id/et1"
        android:layout_width="30dp"
        android:layout_height="62dp"
        android:ems="10"
        android:hint="Enter first number"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.509"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.108" />

<TextView
        android:id="@+id/tv"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.543"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.617"
        android:textSize="30sp"/>

</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.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity
{
    Button b1,b2,b3,b4;
    EditText et1,et2;
    TextView tv;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main); b1=findViewById(R.id.btn1);
        b2=findViewById(R.id.btn2); b3=findViewById(R.id.btn3);
        b4=findViewById(R.id.btn4); et1=findViewById(R.id.et1);
        et2=findViewById(R.id.et2); tv=findViewById(R.id.tv);
        b1.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v) {
                Integer n1=Integer.parseInt(et1.getText().toString());

                Integer n2=Integer.parseInt(et2.getText().toString());

                Integer n3=n1+n2;
                tv.setText("result "+n3);
            }
        });
    }
}

```



```

    }

    });

b2.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Integer n1=Integer.parseInt(et1.getText().toString());

        Integer n2=Integer.parseInt(et2.getText().toString());

        Integer n3=n1-n2;

        tv.setText("result "+n3);

    }

    });

b3.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Integer n1=Integer.parseInt(et1.getText().toString());

        Integer n2=Integer.parseInt(et2.getText().toString());

        Integer n3=n1*n2;

        tv.setText("result "+n3);

    }

    });

b4.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Float n1=Float.parseFloat(et1.getText().toString());

```

```
Float n2=Float.parseFloat(et2.getText().toString());
```

```
Float n3=n1/n2;
```

```
tv.setText("result "+n3);
```

```
}
```

```
});
```

```
}
```

```
}
```

Output:



Program no: 4

Aim Implement validations on various UI controls

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=".MainActivity2">

    <EditText
        android:id="@+id/firstName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:hint="First Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.079"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.023" />

    <EditText
        android:id="@+id/lastName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
```

```

android:inputType="text"
android:hint="Last Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.11" />

```

<EditText

```

android:id="@+id/email"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="text"
android:hint="Email-Id"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.192" />

```

<EditText

```

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

android:layout_height="wrap_content"
android:ems="10"
android:inputType="text"
android:hint="Password"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"

```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.269" />

```

```
<Button
```

```

    android:id="@+id/proceed_button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="PROCEED"
    android:backgroundTint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.911"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.373" />

```

```
<Button
```

```

    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:backgroundTint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.05"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.373" />

```

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

Java Code:

```

package com.example.login;

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 MainActivity2 extends
    AppCompatActivity {
    Button procee,cancel;
    EditText first,last,emai,pass;

    boolean
    isAllFieldChecked=false;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);

        procee=findViewById(R.id.proceed_button);
        cancel=findViewById(R.id.button2);

        first=findViewById(R.id.firstName);
        last=findViewById(R.id.lastName);
        emai=findViewById(R.id.email);
        pass=findViewById(R.id.password);

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

```

```

public void onClick(View view) {

    isAllFieldChecked = CheckAllFields();

    if(isAllFieldChecked){
        Intent i=new Intent(MainActivity2.this,MainActivity.class);
        startActivity(i);
    }

    });

cancel.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        MainActivity2.this.finish();
        System.exit(0);
    }
});

private boolean CheckAllFields(){

    if(first.length()==0){
        first.setError("This field is required");
        return false;
    }

    if(last.length()==0){
        last.setError("This field is required");
        return false;
    }

    if(ema.length()==0){
        emai.setError("This field is required");

```



```
return false;

}
if(pass.length()==0){
    pass.setError("Password is required");
    return false;
}
else if(pass.length()<8){
    pass.setError("Password must be minimum 8 characters");

    return false;

}

return true;

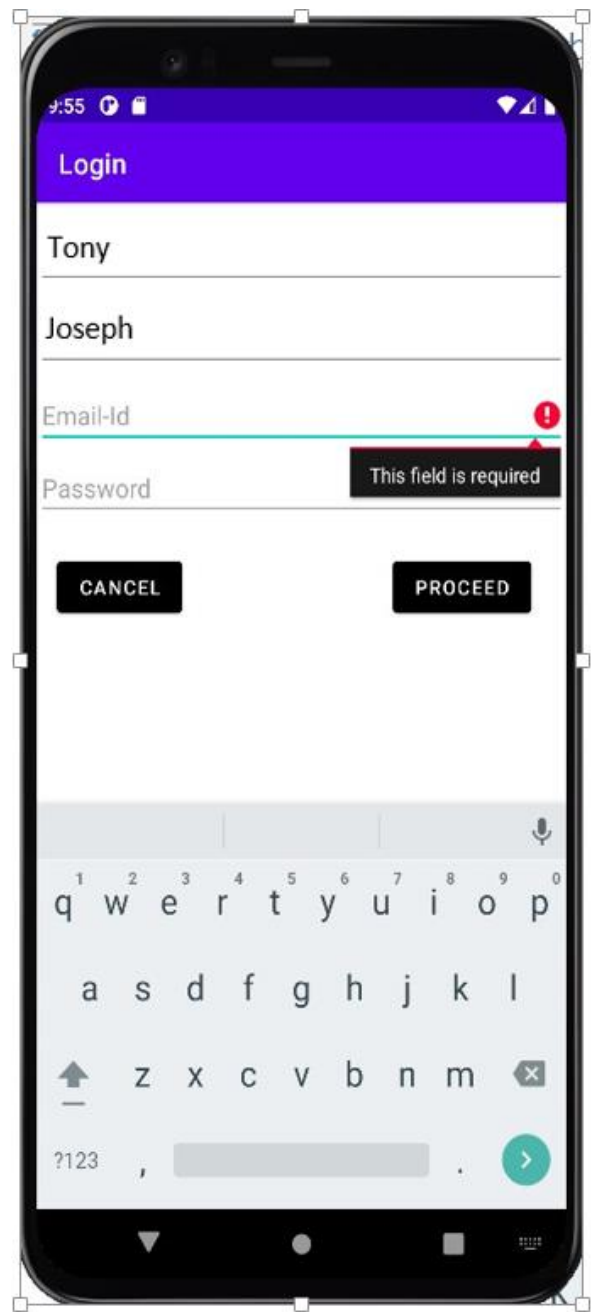
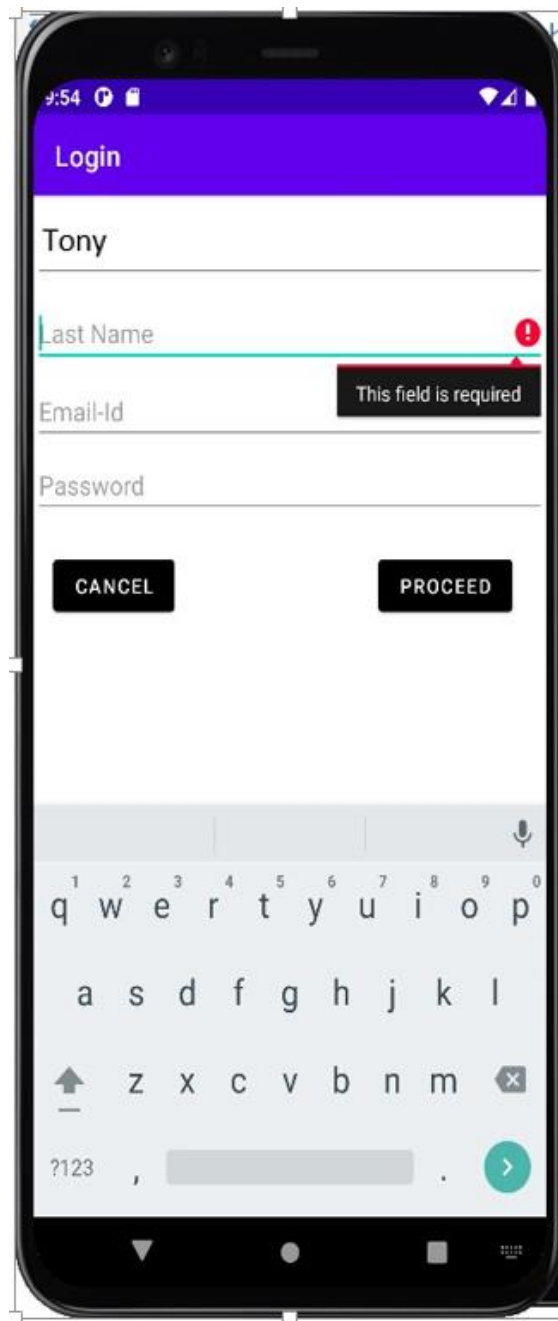
}
}
```

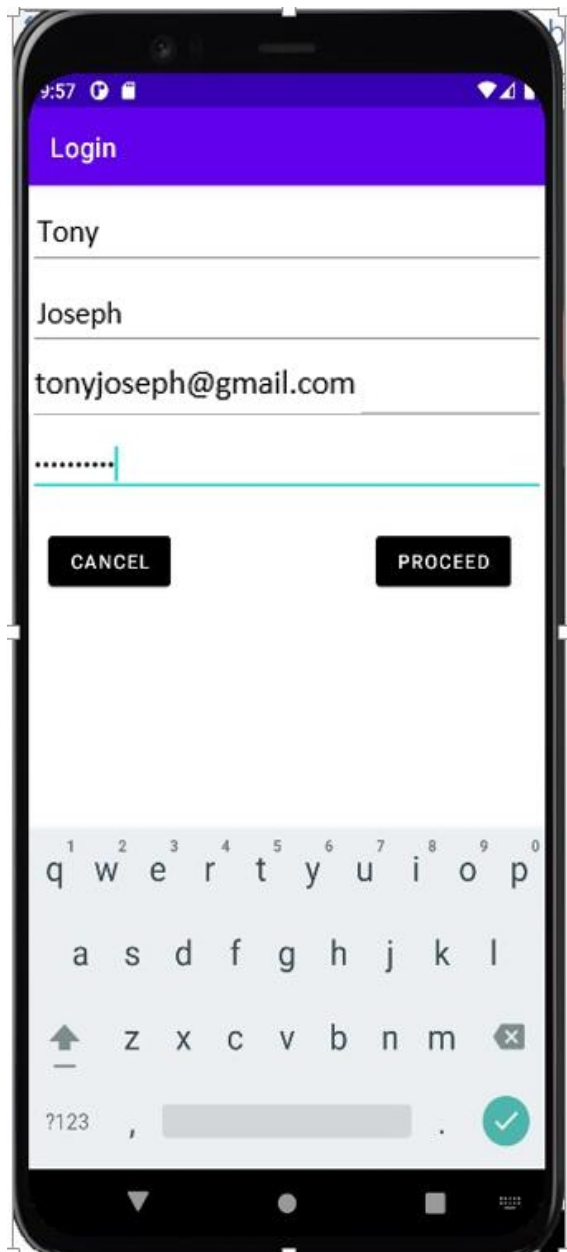
Output:

A screenshot of a mobile application's login screen. The screen has a purple header with the word "Login" in white. Below the header, there are four text input fields labeled "First Name", "Last Name", "Email-id", and "Password". At the bottom of the form, there are two black buttons with white text: "CANCEL" on the left and "PROCEED" on the right. The status bar at the top shows the time as 1:38.



A screenshot of the same mobile application's login screen, but with a validation error. The "Last Name" field is highlighted with a red border, and a red circle with a white exclamation mark is visible in the top right corner of the field. A black tooltip with the text "This field is required" is positioned over the "Last Name" field. The "PROCEED" button is disabled. The status bar at the top shows the time as 1:39.





Program 5

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

Activity_Main.xml

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

```
<TextView
    android:id="@+id/textView"
    android:layout_width="387dp"
    android:layout_height="60dp"
    android:text="Enter Your Details"
    android:textSize="40dp"
    android:textStyle="bold"
    android:textColor="@color/light_green"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.666"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.087" />
```

```
<EditText
    android:id="@+id/name"
    android:layout_width="338dp"
    android:layout_height="58dp"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName"
```

```

    android:textColorHint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.493"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.228" />

```

<EditText

```

    android:id="@+id/email"
    android:layout_width="340dp"
    android:layout_height="63dp"
    android:ems="10"
    android:hint="Email-ID"
    android:inputType="textPersonName"
    android:textColorHint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.519"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.353" />

```

<EditText

```

    android:id="@+id/phone"
    android:layout_width="339dp"
    android:layout_height="62dp"
    android:ems="10"
    android:hint="Phone Number"
    android:inputType="textPersonName"
    android:textColorHint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.486"

```

```

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"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.612" />

```

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

Activity_Main2.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=".show">

```

```
<TextView
```

```

    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Details of User using intent"
    android:textSize="22dp"

```

```

android:textColor="@color/black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.456"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.126" />

```

<TextView

```

android:id="@+id/intentr"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textColor="@color/dark"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.458"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.226" />

```

<TextView

```

android:id="@+id/textView7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Details of User using Shared Preference"
android:textSize="22dp"
android:textColor="@color/black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.564" />

```



```
<TextView
    android:id="@+id/sharedr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="@color/dark"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.726" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```

package com.example.intentandshared;

import androidx.appcompat.app.ActionBar;
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.EditText;
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ActionBar Wel=getSupportActionBar();
        Wel.setTitle("Welcome");
        Button sub=findViewById(R.id.button);
        EditText name=findViewById(R.id.name);
        EditText email=findViewById(R.id.email);
        EditText phone=findViewById(R.id.phone);
        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i= new Intent(MainActivity.this,show.class);
                String User=name.getText().toString();
                i.putExtra("Name",User);
                String Email=email.getText().toString();
                i.putExtra("Email",Email);
                String Phone=phone.getText().toString();
                i.putExtra("Phone",Phone);
            }
        });
    }
}

```

```
startActivity(i);

SharedPreferences
sharedPreferences=getSharedPreferences("Myshare",MODE_PRIVATE);
SharedPreferences.Editor MyEdit=sharedPreferences.edit();
MyEdit.putString("nname",name.getText().toString());
MyEdit.putString("Eemail",email.getText().toString());
MyEdit.putString("pphone",phone.getText().toString());
MyEdit.apply();

    }
});

}
}
```

MainActivity2.xml

```

package com.example.intentandshared;
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;
public class show extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_show);
        ActionBar dis=getSupportActionBar();
        dis.setTitle("Display");

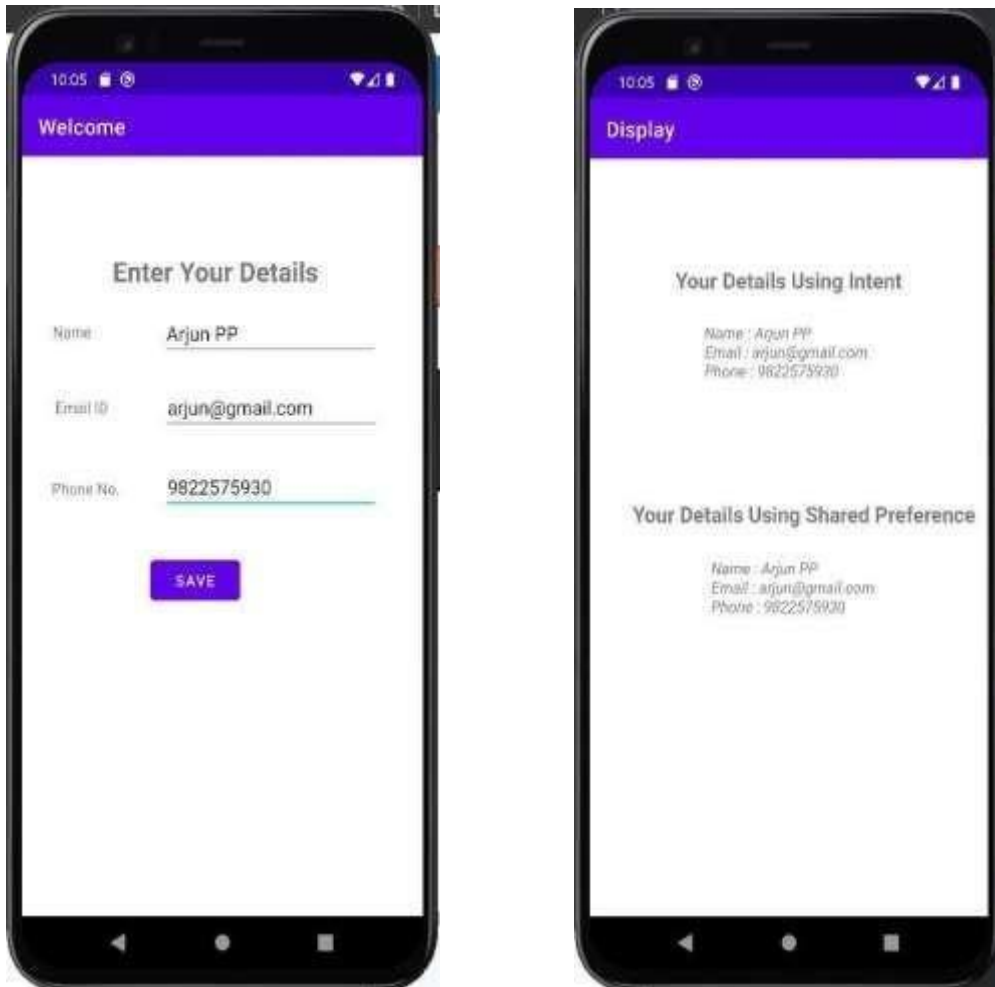
        TextView gh=findViewById(R.id.intentr);
        TextView sha=findViewById(R.id.sharedr);
        Intent i=getIntent();
        String name=i.getStringExtra("Name");
        String email=i.getStringExtra("Email");
        String phone=i.getStringExtra("Phone");

        gh.setText("Name :"+name+"\nEmail-ID :"+email+"\nPhone :"+phone);
        SharedPreferences sharedPreferences=getSharedPreferences("Myshare",MODE_PRIVATE);
        String Name=sharedPreferences.getString( "nname","");
        String Email=sharedPreferences.getString("Eemail"," ");
        String Phone=sharedPreferences.getString("pphone"," ");
        sha.setText("Name :"+Name+"\nEmail-ID :"+Email+"\nPhone :"+Phone);

    }
}

```

Output



Program no: 6**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="#323030"
    android:layout_gravity="bottom"
    android:gravity="bottom"
    android:orientation="vertical"
    tools:context=".MainActivity2">

    <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="21+23"  
android:textAlignment="textEnd"  
android:textColor="@color/white"  
android:textSize="40dp" />
```

```
<TextView
```

```
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginEnd="20dp"  
    android:text="=43"  
    android:textAlignment="textEnd"  
    android:textColor="@color/white"  
    android:textSize="40dp" />
```

```
</LinearLayout>
```

```
<GridLayout
```

```
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:columnCount="4"  
    android:rowCount="4"  
    android:columnWidth="1dp"  
    android:numColumns="auto_fit"  
    android:verticalSpacing="1dp"  
    android:horizontalSpacing="1dp"  
    android:stretchMode="columnWidth"  
    android:gravity="center">
```

```
<Button
```

```
    android:id="@+id/b9"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_row="0"  
    android:layout_column="0"
```

```

android:layout_margin="10dp"
android:text="9"
android:textColor="@color/white"
android:textSize="25dp" />

```

<Button

```

android:id="@+id/b8"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:text="8"
android:textColor="@color/white"
android:textSize="25dp" />

```

<Button

```

android:id="@+id/b7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
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="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="6"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

<Button

```

    android:id="@+id/b5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="5"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

<Button

```

    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="4"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

<Button

```

    android:id="@+id/bdiv"
    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/b3"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="10dp"  
android:text="3"  
android:textColor="@color/white"  
android:textSize="25dp" />
```

<Button

```
android:id="@+id/b2"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="10dp"  
android:text="2"  
android:textColor="@color/white"  
android:textSize="25dp" />
```

<Button

```
android:id="@+id/b1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="10dp"  
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="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="0"
        android:textColor="@color/white"
        android:textSize="25dp" />

```

<Button

```

        android:id="@+id/b."
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="."
        android:textColor="@color/white"
        android:textSize="25dp" />

```

<Button

```

        android:id="@+id/bequal"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        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.intentandshared;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        ActionBar cal=getSupportActionBar();
        cal.setTitle("Calculator");
    }
}
```

Output



Program no: 7

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

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#29487D"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="341dp"
        android:layout_height="96dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginBottom="474dp"
        android:fontFamily="helvetica"
        android:text="facebook"
        android:textAlignment="center"
        android:textColor="@color/white"
        android:textSize="46dp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.968" />

    <Button
        android:id="@+id/b1"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="355dp"
        android:text="LOG IN" />

    <EditText
        android:id="@+id/et1"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:ems="10"
```

```

    android:layout_marginLeft="50dp"
    android:layout_marginTop="250dp"
    android:inputType="textPersonName"
    android:hint="email or password" />

```

```

<EditText
    android:id="@+id/et2"
    android:layout_width="300dp"
    android:layout_height="wrap_content"
    android:ems="10"
    android:layout_marginLeft="50dp"
    android:layout_marginTop="300dp"
    android:inputType="textPersonName"
    android:hint="password" />

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="105dp"
    android:layout_marginTop="430dp"
    android:text="Don't have an account? Sign Up."
    android:textAlignment="center"/>

```

```

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:layout_marginTop="408dp"
    android:text="Forgot password"
    android:textAlignment="center"/>

```

```

</RelativeLayout>

```

MainActivity.java

```

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

```



```
EditText et1, et2;
Button b1;
```

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

    b1=findViewById(R.id.b1);
    et1=findViewById(R.id.et1);
    et2=findViewById(R.id.et2);
    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String email=et1.getText().toString();
            String pass=et2.getText().toString();
            if(email.equals("")){
                Toast.makeText(MainActivity.this, "Enter your username",
                    Toast.LENGTH_LONG).show();
            }
            else if(pass.equals("")){
                Toast.makeText(MainActivity.this, "Enter your password",
                    Toast.LENGTH_LONG).show();
            }
            else if (email.equals("vt9796") && pass.equals("vt9796")) {
                Intent i=new Intent(MainActivity.this, MainActivity2.class);
                i.putExtra("name", email);
                startActivity(i);
            } else {
                String toastMessage = "Username and Password doesn't match.";
                Toast.makeText(getApplicationContext(), toastMessage,
                    Toast.LENGTH_LONG).show();
            }
        }
    });
}
```

Activity_main2.xml

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

```

android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="#29487D"
tools:context=".MainActivity2">

```

```

<TextView
    android:id="@+id/tv"
    android:layout_width="284dp"
    android:layout_height="53dp"
    android:text="tv"
    android:textStyle="bold"
    android:textSize="60dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity2.java

```

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {
    TextView tv = findViewById(R.id.tv);

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);

        Intent j=getIntent();
        String email=j.getStringExtra("name");
        tv.setText("Welcome:"+email);
    }
}

```

Output

The image displays three sequential screenshots of a mobile application's Facebook login screen. Each screen has a dark blue background with a purple header bar containing the word 'facebook' in white. The main heading 'facebook' is centered in white. Below it are two input fields: 'email or password' and 'password'. A purple 'LOG IN' button is positioned below the fields. At the bottom of the login section, there are links for 'Forgot password' and 'Don't have an account? Sign Up.'.

Screenshot 1 (Top Left): Shows the initial login state. The 'email or password' field is empty. The 'password' field is empty. The 'LOG IN' button is visible.

Screenshot 2 (Top Right): Shows the state after a password error. The 'password' field is highlighted with a red border. A red error message 'Enter your password' is displayed in a white rounded rectangle at the bottom of the screen.

Screenshot 3 (Bottom): Shows the state after a username error. The 'email or password' field is highlighted with a red border. A red error message 'Enter your username' is displayed in a white rounded rectangle at the bottom of the screen.

Program no: 8

Aim: Develop an application that toggles image using FrameLayout

Activity_main.xml

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

```
<ImageView
```

```
    android:id="@+id/image1"
    android:layout_width="350dp"
    android:layout_height="350dp"
    android:src="@drawable/minny"
/>
```

```
<ImageView
```

```
    android:id="@+id/image2"

    android:layout_width="350dp"

    android:layout_height="350dp"

    android:src="@drawable/mickey"
/>
```

```
</FrameLayout>
```

MainActivity.java

```
package com.example.frameLayout;

import androidx.appcompat.app.AppCompatActivity;

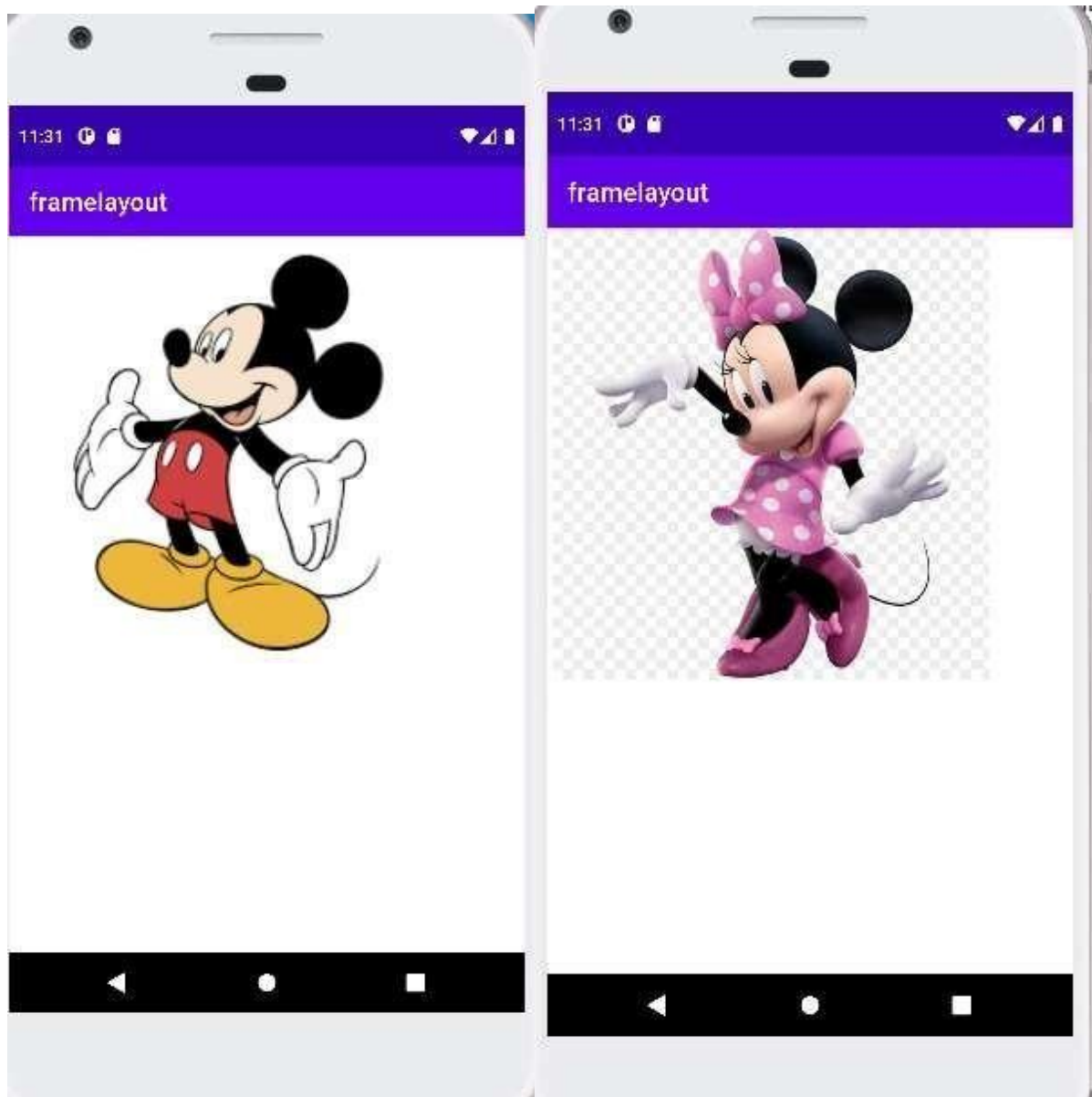
import android.os.Bundle;
import android.view.View;
import
android.widget.ImageButton;
import
android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ImageView i1=findViewById(R.id.image1);
        ImageView i2=findViewById(R.id.image2);
        i2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v)
            {i1.bringToFront();
            }
        });
        i1.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
public void onClick(View v)
    {i2.bringToFront();
    }
});
}
```

Output



Program 9

Aim : Implement Adapters and perform exception handling

Activity_Main.xml

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

    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        />

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

MainActivity.java

```
package com.example.exception_handling;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.Toast;

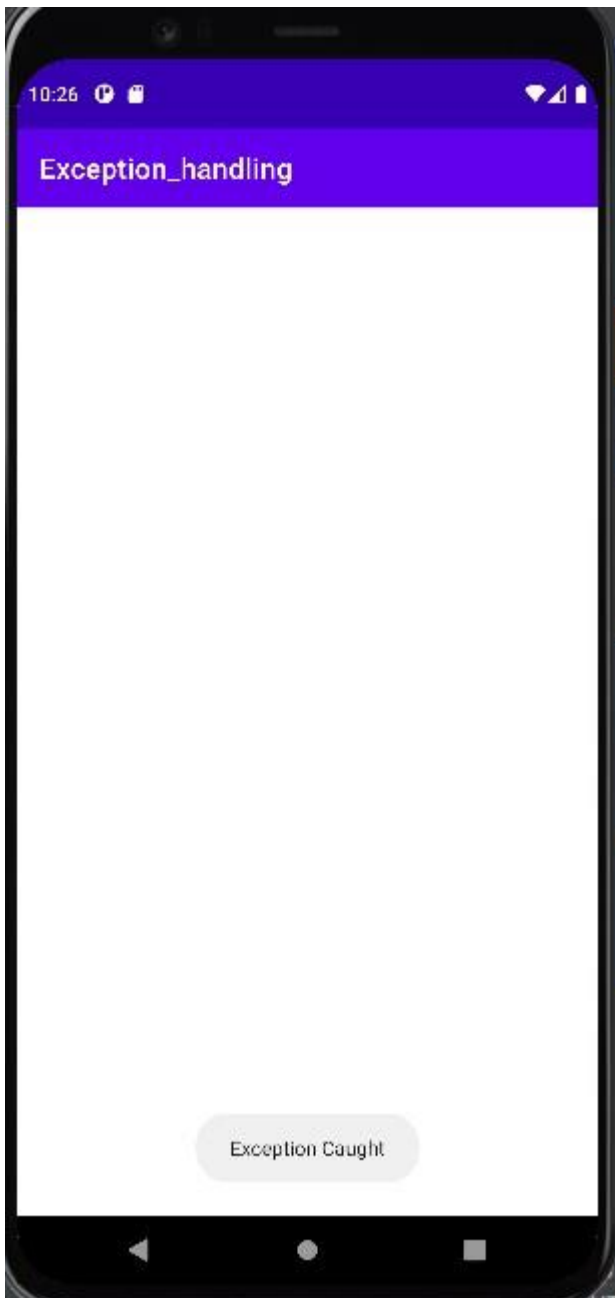
import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {
    List<String> list= new ArrayList();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        list.add("ITEM 1");
        list.add("ITEM 2");
        list.add("ITEM 3");
        list.add("ITEM 4");
    }
}
```



```
for(int i=0;i<6;i++){  
    try{  
        list.get(i);  
    }  
    catch (Exception e){  
        Toast.makeText(this, "Exception Caught", Toast.LENGTH_LONG).show();  
    }  
}  
}
```

Output



Program no: 10

Aim: Implement Intent to navigate between multiple activities

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/b"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Click Me"

    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.implicitintent;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        ActionBar a=getSupportActionBar();

        a.setTitle("Implicit Intent");

        Button b=findViewById(R.id.b);

        b.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Intent i=new Intent(Intent.ACTION_VIEW, Uri.parse("https://www.google.com/"));

                startActivity(i);

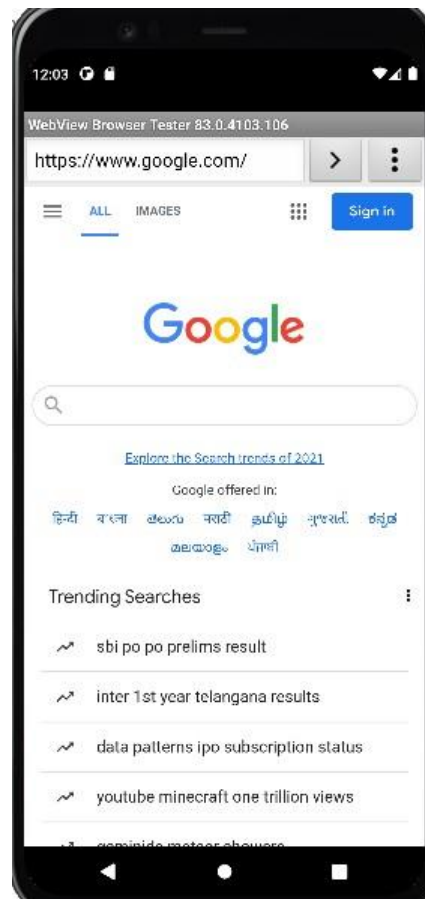
            }

        });

    }

}
```

Output



Program no: 11

Aim: Develop application that works with explicit intents

Activity main.xml

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

    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Click Me!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/et1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.042" />

```

```
<EditText
```

```

    android:id="@+id/et2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="email"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.141" />

```

```
<EditText
```

```

    android:id="@+id/et3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="phone number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.228" />

```

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

MainActivity.java

```
package com.example.explicitintent;

import androidx.appcompat.app.ActionBar;
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 MainActivity extends AppCompatActivity {

    Button b;

    EditText n,e,p;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        ActionBar a=getSupportActionBar();

        a.setTitle("Activity 1");

        b=findViewById(R.id.b);

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



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

p=findViewById(R.id.p);

b.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Intent i=new Intent(MainActivity.this, MainActivity2.class);

        String user=n.getText().toString();

        i.putExtra("userName", user);

        String email=e.getText().toString();

        i.putExtra("userEmail", email);

        String phone=p.getText().toString();

        i.putExtra("userPhone", phone);
        startActivity(i);
    }

});

}

}
```

Activity_main2.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=".MainActivity2">

<TextView

    android:id="@+id/n"
    android:layout_width="257dp"
    android:layout_height="150dp"
    android:textStyle="bold"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.353" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity2.java

```
package com.example.explicitintent;

import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.widget.Button;

import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main2);

        ActionBar a=getSupportActionBar();
```

```
a.setTitle("Activity 2");

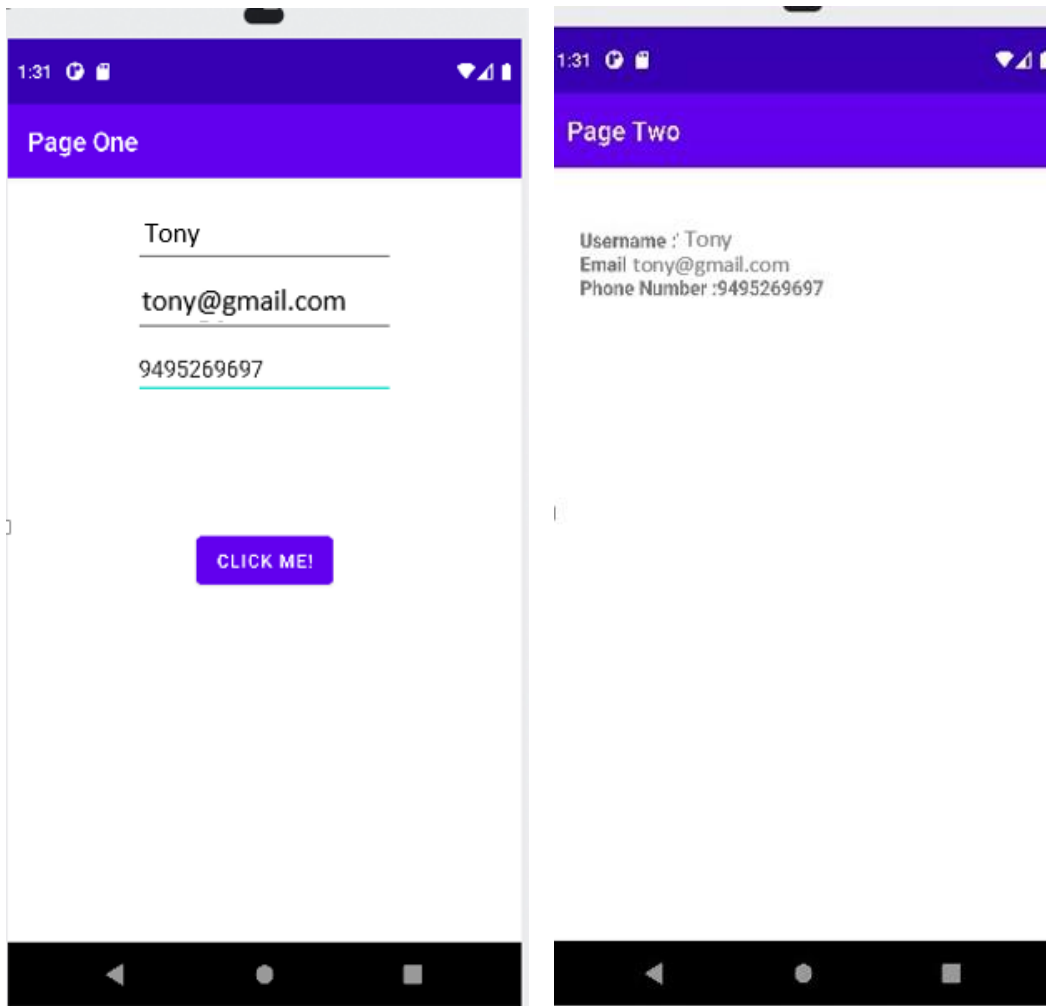
TextView n=findViewById(R.id.n);

Intent i=getIntent();

String name=i.getStringExtra("userName");
String email=i.getStringExtra("userEmail");
String phone=i.getStringExtra("userPhone");

n.setText("Name: "+name+"\nEmail: "+email+"\nPhone: "+phone);
}
```

Output



Program no: 12

Aim: Implement Options Menu to navigate to activities

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=".MainActivity3">

<ImageView
    android:id="@+id/imageView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.642"
    />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Menu XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/it1"
```

```

        android:icon="@drawable/about"
        android:title="About"

        app:showAsAction="withText" />

<item
    android:id="@+id/it2"
    android:icon="@drawable/help"
    android:title="Help" />
</menu>

```

Java Code:

```

package com.example.myapplication15_12_2;

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

import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.ImageView;
import android.widget.Toast;

public class MainActivity3 extends AppCompatActivity {
    ImageView i;

    //option menu
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu, menu);
        return true;
        //return super.onCreateOptionsMenu(menu);
    }
}

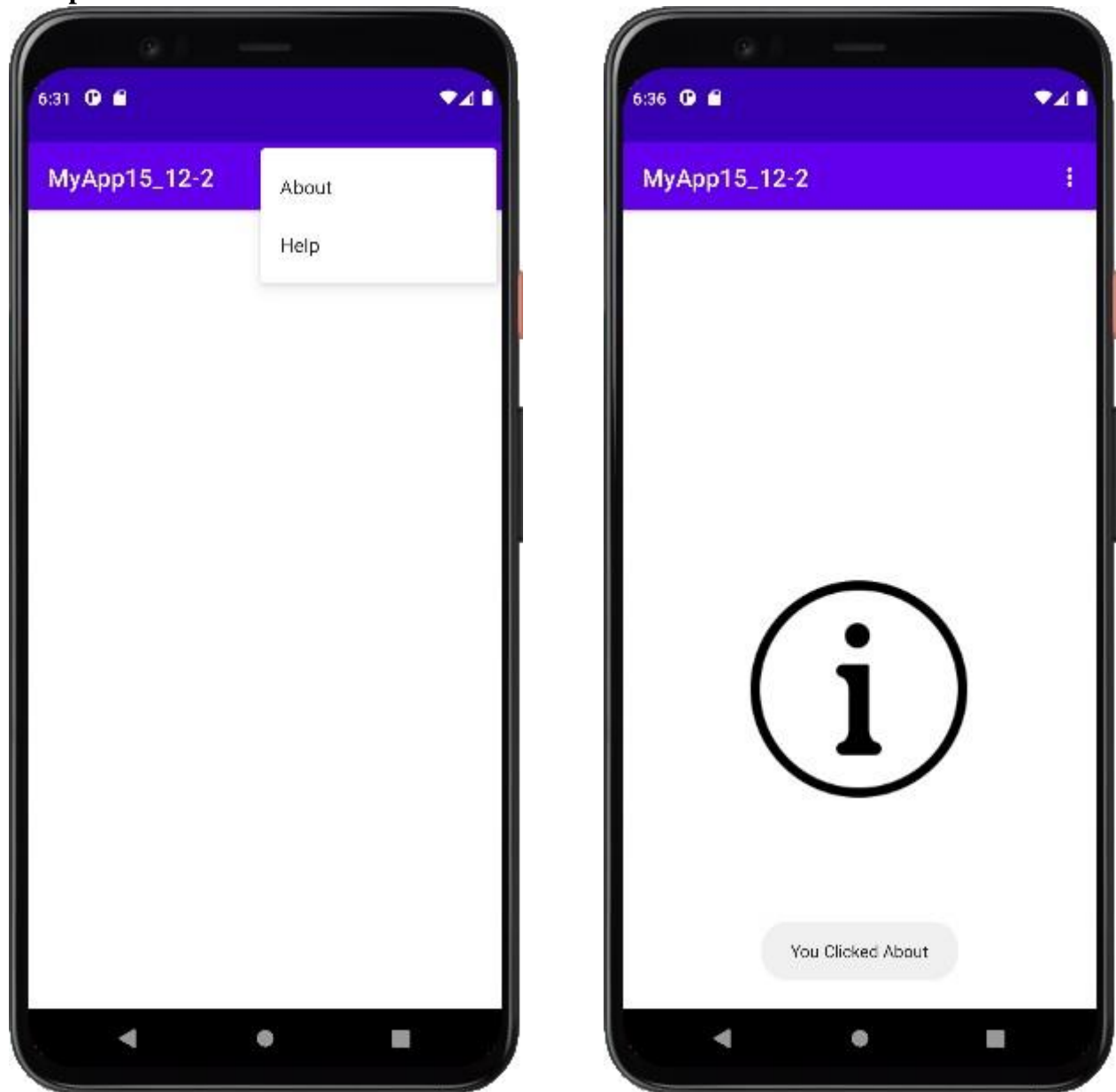
```

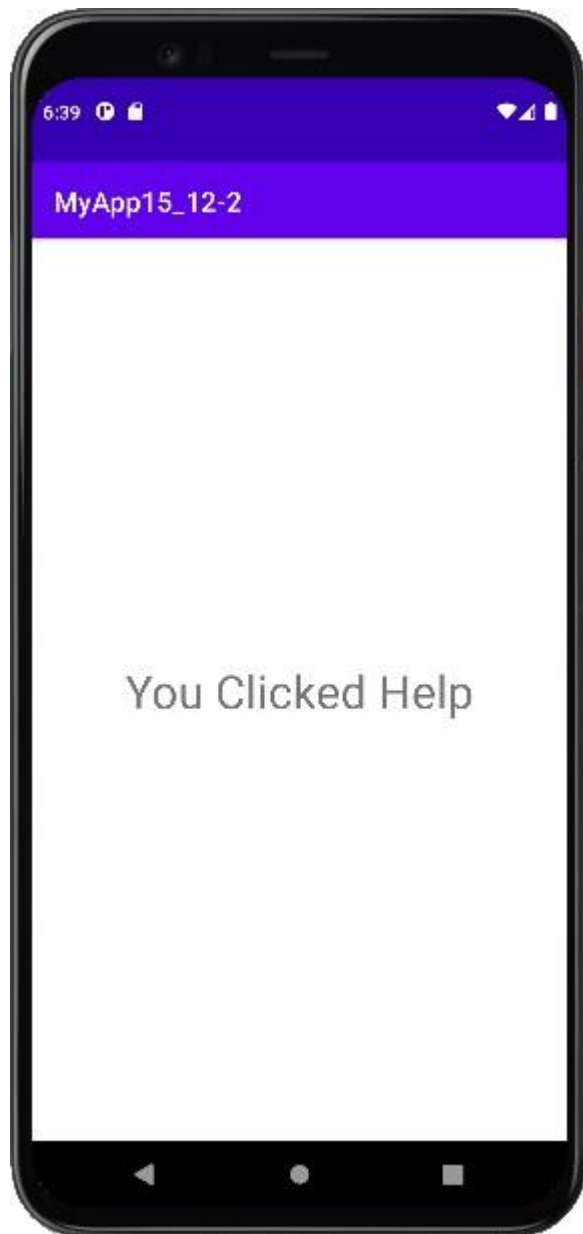
```

@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
    item.setIcon(R.drawable.about);
    i=findViewById(R.id.imageView);
    //handle item selection
    switch (item.getItemId()) {
        case R.id.it1:
            //view image - about click
            i.setImageResource(R.drawable.about);
            Toast.makeText(getApplicationContext(), "You Clicked About",
Toast.LENGTH_SHORT).show();
            return true;
        case R.id.it2:
            //moving to next page
            Intent in=new Intent(MainActivity3.this,MainActivity.class);
            startActivity(in);
            Toast.makeText(getApplicationContext(), "You Clicked Help",
Toast.LENGTH_SHORT).show();
            return true;
        default:
            return super.onOptionsItemSelected(item);
    }
}

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main3);
}
}

```


Output



Program no: 13

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

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

<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_conte
nt"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<ListView android:id="@+id/list"
    android:layout_width="396dp"
    android:layout_height="732dp"
    android:layout_marginStart="1dp"
    android:layout_marginEnd="1dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```

        app:layout_constraintHorizontal_bias="0.461"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.0" />

</android.support.constraint.ConstraintLayout>

```

Java Code:

```

package com.example.listview;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;

import android.widget.AdapterView;

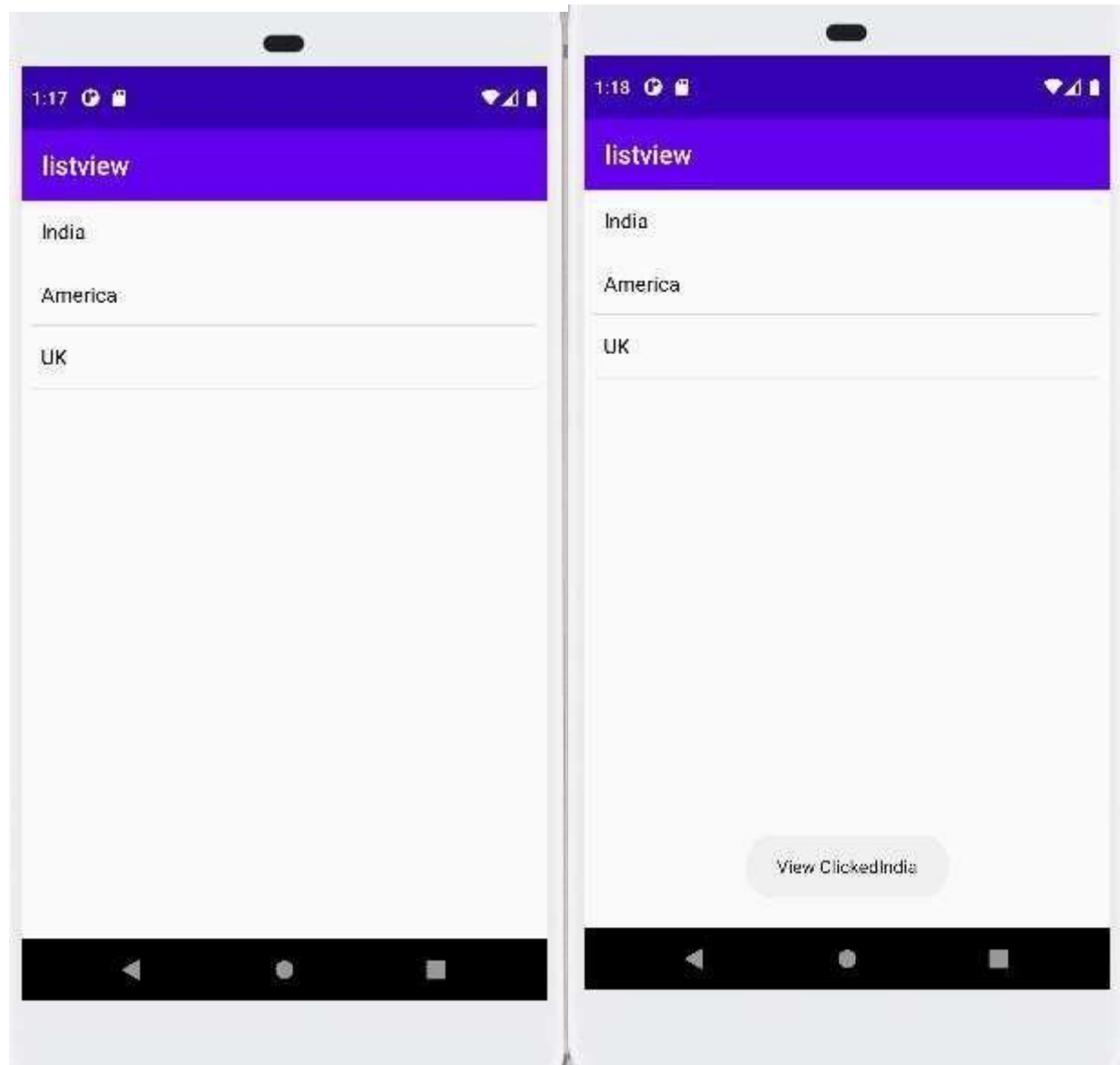
import android.widget.ArrayAdapter;import
android.widget.ListView; import
android.widget.Toast;

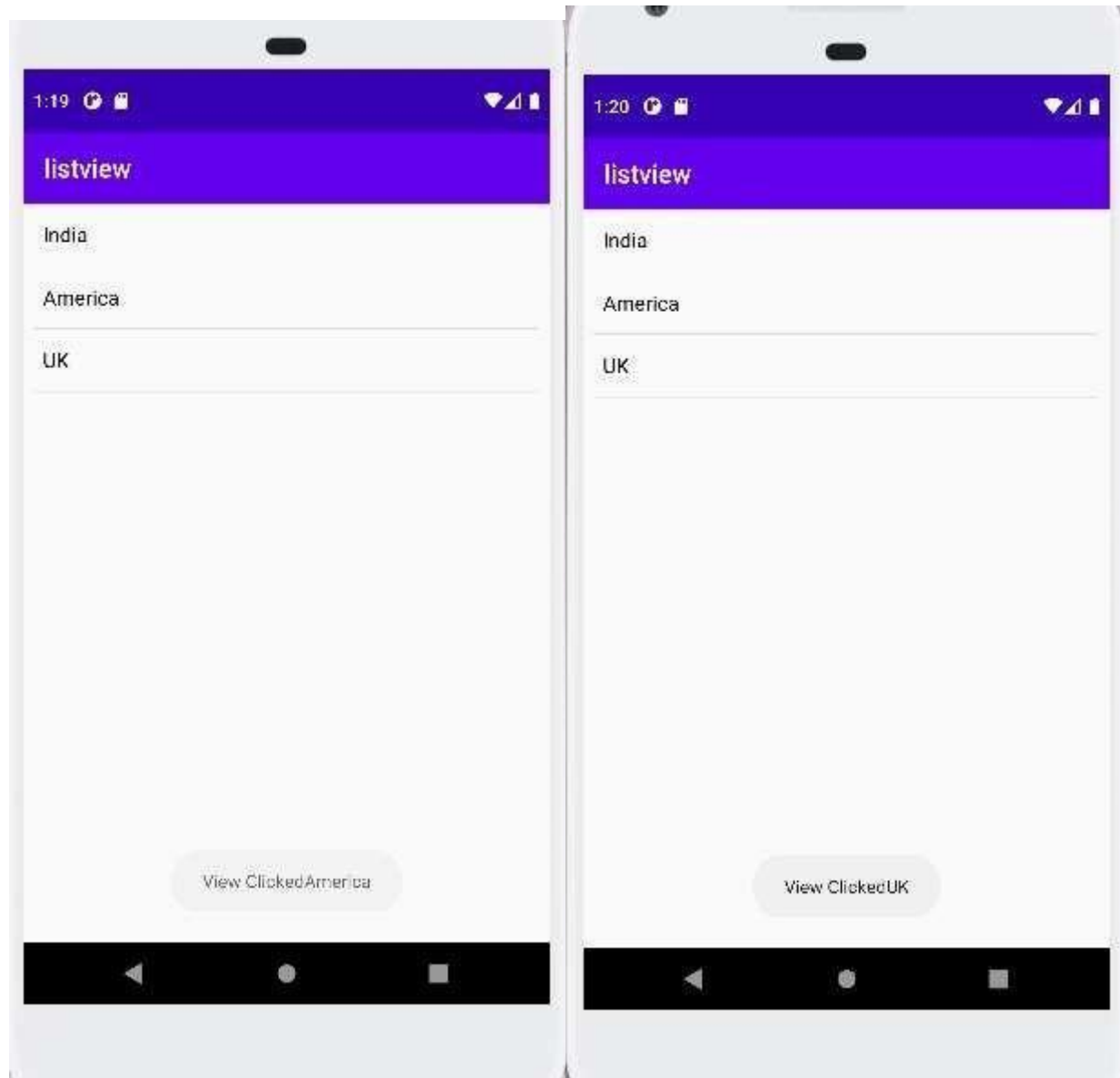
public class MainActivity extends AppCompatActivity {
    ListView listView;
    String countries[]={ "India","America","UK"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        listView=findViewById(R.id.list);
        ArrayAdapter arrayAdapter=new
        ArrayAdapter<String>(MainActivity.this,R.layout.support_simple_spinner_dropdown

```

```
_item,countries);  
    listView.setAdapter(arrayAdapter);  
listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
@Override  
    public void onItemClick(AdapterView<?> parent, View view, int position, long  
    id) {  
  
        Toast.makeText(getApplicationContext(), "View  
Clicked"+countries[position], Toast.LENGTH_SHORT).show();  
  
    }  
  
});  
}  
}
```

Output





Program no: 14

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

XML Code:

activity_main.xml

```
<?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=".MainActivity">

    <GridView
        android:id="@+id/grid1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:numColumns="2"
        />

</LinearLayout>
```

grid_single.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">

    <ImageView
        android:layout_width="150dp"
        android:layout_height="150dp"
        android:id="@+id/img1"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/tv1"
        android:textSize="20dp" />
```



```
</LinearLayout>
```

Java Code:

MainActivity.java

```
package com.example.gridview;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.drawable.RippleDrawable;
import android.os.Bundle;
import android.widget.GridView;

public class MainActivity extends AppCompatActivity {
    GridView gridView;
    String con[]={"image 1","image 2","image 3","image 4","image 5","image 6","image 7","image 8"};

    int
    img[]={R.drawable.image1,R.drawable.image2,R.drawable.image3,R.drawable.image4,R.drawable.image5,R.drawable.image6,R.drawable.image7, R.drawable.image8};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        gridView=findViewById(R.id.grid1);
        CustomAdaptor customAdaptor=new CustomAdaptor(MainActivity.this,con,img);
        gridView.setAdapter(customAdaptor );
    }
}
```

CustomAdapter.java

```
package com.example.gridview;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;
```

```

public class CustomAdaptor extends BaseAdapter {

    Context context;
    String con[];
    int img[];
    LayoutInflater layoutInflater;

    public CustomAdaptor(MainActivity mainActivity, String[] con, int[] img) {

        this.context=mainActivity;
        this.con=con;
        this.img=img;
        layoutInflater=(LayoutInflater.from(mainActivity));

    }

    @Override
    public int getCount() {
        return img.length;
    }

    @Override
    public Object getItem(int position) {
        return null;
    }

    @Override
    public long getItemId(int position) {
        return 0;
    }

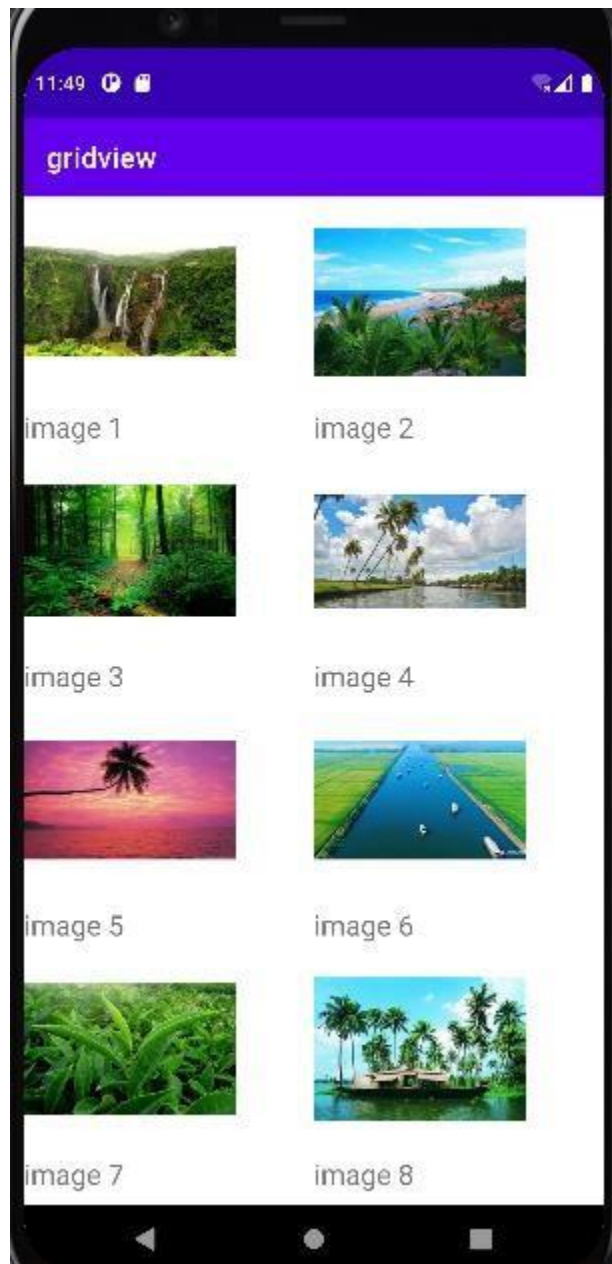
    @Override
    public View getView(int position, View convertView, ViewGroup parent) {

        convertView=layoutInflater.inflate(R.layout.gridlayout,null);
        TextView textView=(TextView) convertView.findViewById(R.id.tv1);
        ImageView imageView=(ImageView) convertView.findViewById(R.id.img1);

        textView.setText(con[position]);
        imageView.setImageResource(img[position]);

        return convertView;
    }
}

```

Output:

Program no: 15

Aim: Develop an application that implements Spinner component and perform event handling

XML Code**Activity Main.xml**

```

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

<Spinner
    android:id="@+id/spinner"
    android:layout_width="149dp"
    android:layout_height="40dp"
    android:layout_marginStart="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginBottom="8dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.409" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code

```

package com.example.spinner;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
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 {

    Spinner spin;
    String Courses[] = {"MCA", "Btech", "Mtech", "other"};

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

        spin = findViewById(R.id.spinner);

        ArrayAdapter arrayAdapter = new ArrayAdapter(this,
            R.layout.support_simple_spinner_dropdown_item, Courses);
        spin.setAdapter(arrayAdapter);

        spin.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override

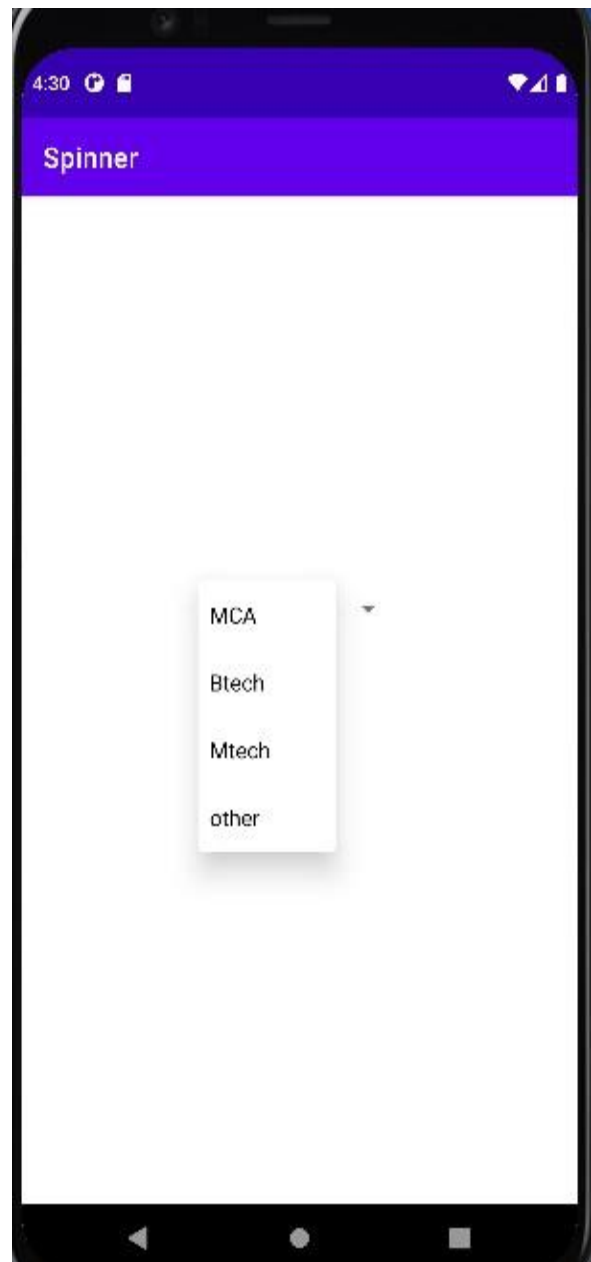
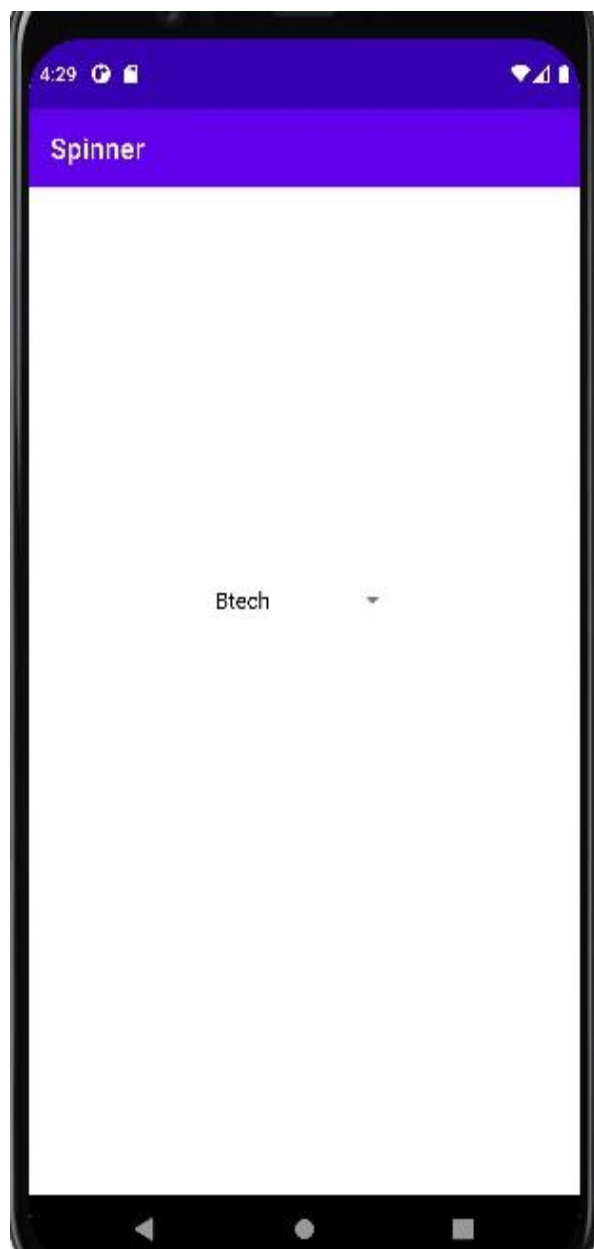
```

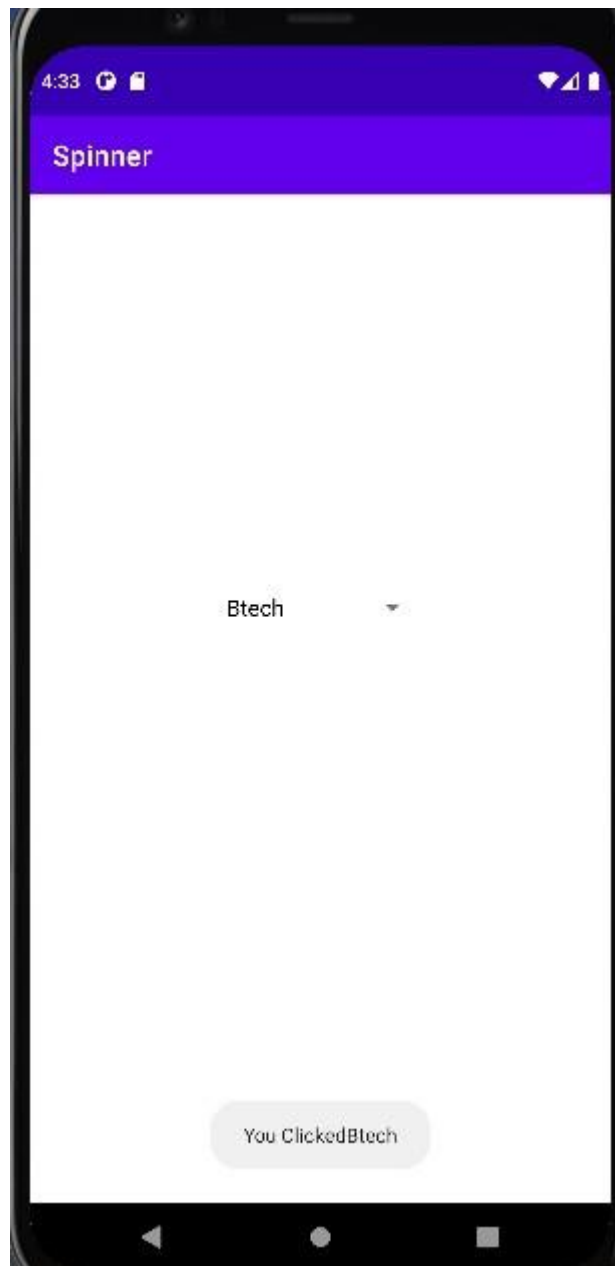
```
        public void onItemSelected(AdapterView<?> parent, View view, int position, long id)
        {
            Toast.makeText(getApplicationContext(), "You Clicked" + Courses[position],
Toast.LENGTH_LONG).show();
        }

        @Override
        public void onNothingSelected(AdapterView<?> parent) {
            return;
        }

    });
}
}
```

Output





Program no: 16

Aim: Apply themes via code and manifest file

XML Code:

Activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello Tony"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.themes">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.AppCompat.Light.DarkActionBar">
        <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>
</application>

</manifest>

```

themes.xml

```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Themes"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">#F30FEF</item>
        <item name="colorPrimaryVariant">@color/teal_200</item>
        <item name="colorOnPrimary">@color/white</item>
        <!-- Secondary brand color. -->
        <item name="colorSecondary">@color/teal_200</item>
        <item name="colorSecondaryVariant">@color/teal_700</item>
        <item name="colorOnSecondary">@color/black</item>
        <!-- Status bar color. -->
        <item name="android:statusBarColor"
tools:targetApi="1">?attr/colorPrimaryVariant</item>
        <!-- Customize your theme here. -->
    </style>
</resources>

```

Java Code:

Main Activity.java

```

package com.example.themes;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

```

Output



Program no: 17

Aim: Develop application using Fragments

XML Code:

Activity_main.xml

```
<?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">

    <FrameLayout
        android:id="@+id/frameLayout"
        android:layout_width="match_parent"
        android:background="@color/teal_200"
        android:layout_height="0dp"
        android:layout_weight="4" />
    <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:text="Fragment 1" />

        <Button
            android:id="@+id/b2"
            android:layout_width="160dp"
            android:layout_height="50dp"
            android:layout_alignParentBottom="true"
            android:layout_alignParentRight="true"
            android:layout_marginStart="30dp"
            android:layout_marginBottom="30dp"
            android:text="Fragment 2" />

    </RelativeLayout>
```

</LinearLayout>

Fragment 1.xml

```
<?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"
    android:background="@color/purple_700"
    tools:context=".fragment1">

    <!-- TODO: Update blank fragment layout -->

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textSize="30dp"
        android:text="Fragment 1" />

</RelativeLayout>
```

Fragment 2.xml

```
<?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"
    android:background="@color/teal_700"
    tools:context=".fragment2">

    <!-- TODO: Update blank fragment layout -->

    <TextView
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textSize="30dp"
        android:text="Fragment 2" />

```

```
</RelativeLayout>
```

Java Code:

MainActivity.java

```

package com.example.myapplication09_02_3;

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) {
        replaceFragmnt(new fragment1());
    }
});

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        replaceFragmnt(new fragment2());

    }
});
}

private void replaceFragmnt(Fragment fragment) {
    FragmentManager fragmentManager=getSupportFragmentManager();
    FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
    fragmentTransaction.replace(R.id.frameLayout,fragment);
    fragmentTransaction.commit();
}

}

```

fragment1.java

```
package com.example.myapp09_02_3;

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_fragment1, container, false);
    }
}
```


fragment2.java

```
package com.example.myapp09_02_3;

import android.os.Bundle;

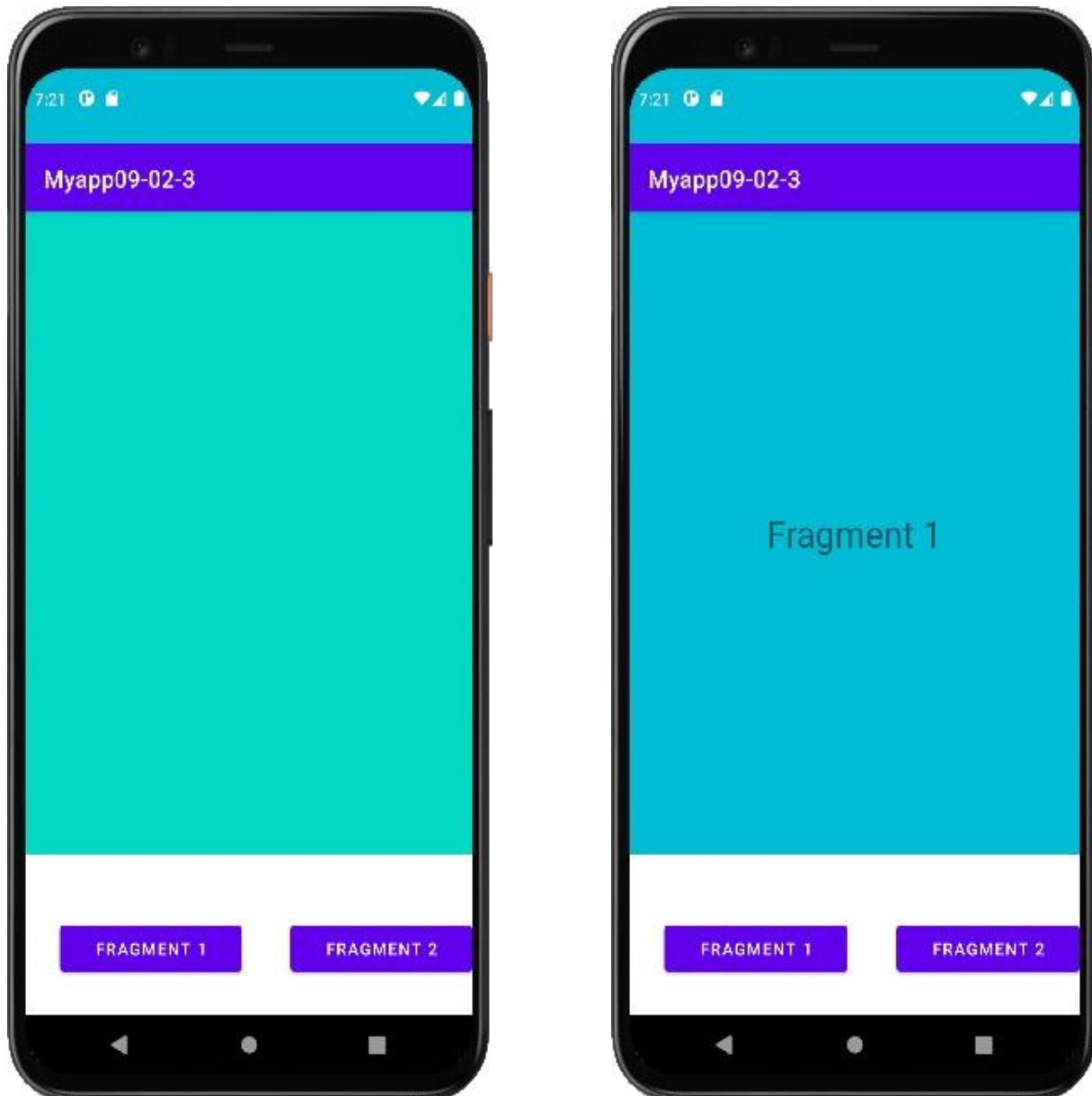
import androidx.fragment.app.Fragment;

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_fragment2, container, false);
    }
}
```

Output:





Program no: 18**Aim:** Implement Navigation drawer**XML Code:****Activity Main.Xml**

```

<?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"
android:id="@+id/drawerLayout"
tools:context=".MainActivity">

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

    <TextView
        android:layout_width="202dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="NavigationDrawer"
        android:textSize="20dp" />

</LinearLayout>

<com.google.android.material.navigation.NavigationView
    android:layout_width="wrap_content"
    android:layout_height="match_parent"

```

```

    android:layout_gravity="start"
    app:menu="@menu/navigation_menu"/>

```

```

</androidx.drawerlayout.widget.DrawerLayout>

```

Strings.xml

```

<resources>
    <string name="app_name">Navigation_drawer</string>
    <string name="nav_open">Open</string>
    <string name="nav_close">Close</string>
</resources>

```

Menu.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/ac"
        android:title="My Account"
        android:icon="@drawable/myaccount"/>
    <item
        android:id="@+id/se"
        android:title="Settings"
        android:icon="@drawable/myaccount"/>
    <item
        android:id="@+id/lg"
        android:title="Logout"
        android:icon="@drawable/myaccount"/>
</menu>

```

Java Code

MainActivity.java

```
package com.example.navigation_drawer;

import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.ActionBarDrawerToggle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.drawerlayout.widget.DrawerLayout;

import android.os.Bundle;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

    DrawerLayout drawerLayout;
    ActionBarDrawerToggle actionBarDrawerToggle;

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

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

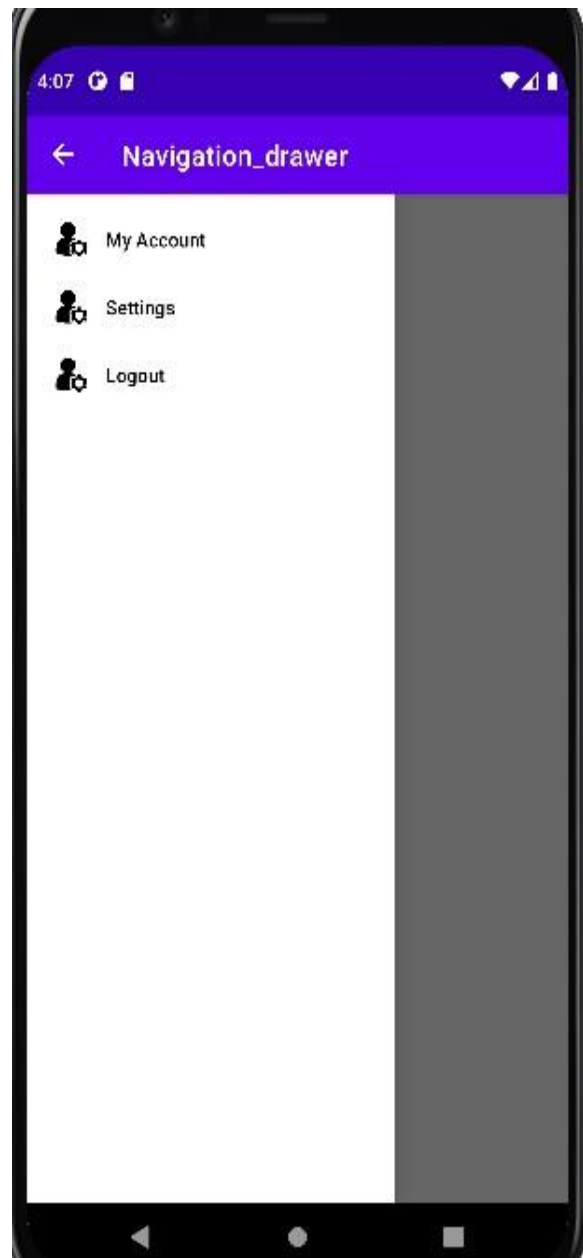
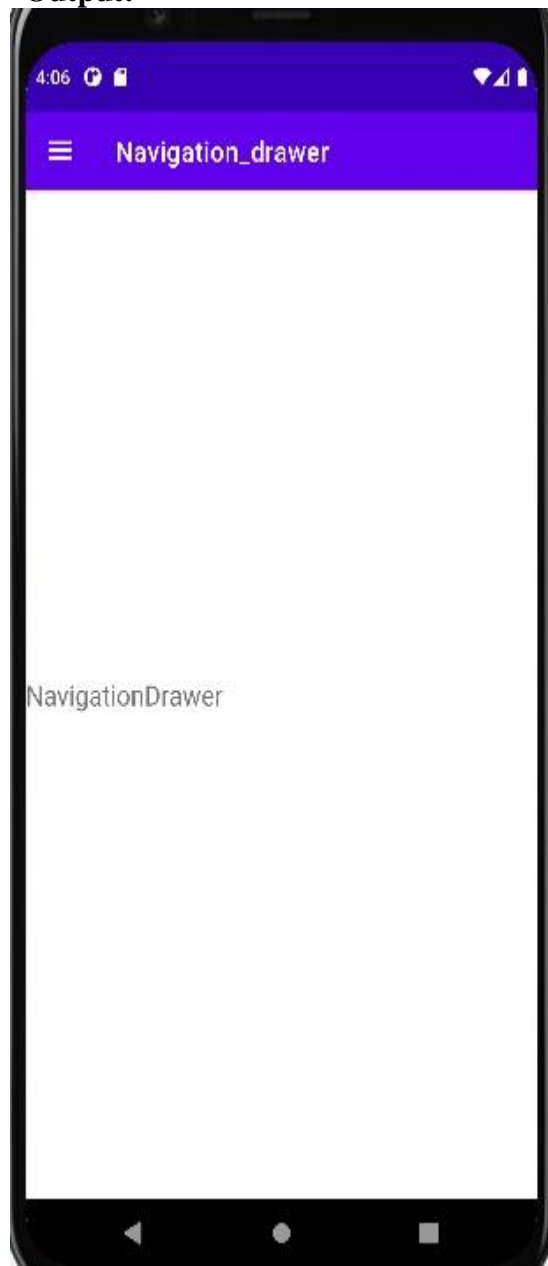
        drawerLayout.addDrawerListener(actionBarDrawerToggle);
        actionBarDrawerToggle.syncState();
```

```
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    }

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

        if (actionBarDrawerToggle.onOptionsItemSelected(item))
        {
            return true;
        }
        return super.onOptionsItemSelected(item);
    }
}
```

Output:



Program 19

Aim: Program to implement various SQLite operations : (INSERT, UPDATE ,DELETE ,SELECT)

XML Code:

Activity_main.xml

```
<?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="wrap_content"
    android:layout_height="wrap_content"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView"
        android:layout_width="289dp"
        android:layout_height="45dp"
        android:layout_weight="1"
        android:textColor="@color/black"
        android:textStyle="bold"
        android:text="Name"
        android:textSize="20dp"/>

    <EditText
        android:id="@+id/Name"
        android:layout_width="500dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:ems="10"
        android:inputType="textPersonName"
        />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textColor="@color/black"
        android:textStyle="bold"
        android:text="address"
        android:textSize="20dp"/>
```

```

<EditText
    android:id="@+id/edit2"
    android:layout_width="500dp"
    android:layout_height="wrap_content"
    android:ems="10"

    android:inputType="textPersonName"
/>

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:text="Insert" />

<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:text="view" />

<EditText
    android:id="@+id/edit3"
    android:layout_width="500dp"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:text="Delete" />

<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="150dp"
    android:text="Update" />
</LinearLayout>

```

Java Code:**MainActivity.java**

```

package com.example.database_ins;

import androidx.appcompat.app.AppCompatActivity;

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

import com.example.database_ins.R;
import com.example.database_ins.helperdb;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText e1 =findViewById(R.id.Name);
        EditText e2=findViewById(R.id.edit2);
        EditText e3=findViewById(R.id.edit3);
        Button b1=findViewById(R.id.button);
        Button b2=findViewById(R.id.button1);
        Button b3=findViewById(R.id.button2);
        Button b4=findViewById(R.id.button3);
        helperdb helper=new helperdb(this);
        StringBuffer sb=new StringBuffer();//store fetched value cursor
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String na=e1.getText().toString();
                String pa=e2.getText().toString();

                helper.insert(na,pa);

            }
        });

        b2.setOnClickListener(new View.OnClickListener() {

```

```

@Override
public void onClick(View v) {
    Cursor cr=helper.viewdb();
    StringBuffer sb=new StringBuffer();
    while (cr.moveToNext()){
        sb.append("id :"+cr.getString(0)+"\n");
        sb.append("name :"+cr.getString(1)+"\n");
        sb.append("address :"+cr.getString(2)+"\n");
    }
    Toast.makeText(getApplicationContext(),sb.toString(),Toast.LENGTH_LONG).show()
;
    }
});

b3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String valid=e3.getText().toString() ;
        helper.delldb(valid);
    }
});

b4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String valid=e3.getText().toString();
        String na=e1.getText().toString();
        String pa=e2.getText().toString();
        helper.upddb(valid,na,pa);
    }
});

}
}

```

helperdb.java

```

package com.example.database_ins;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

```

```

public class helperdb extends SQLiteOpenHelper {

    private static String dbName="student";
    private static int dbVersion=1;

    SQLiteDatabase db;

    public helperdb( Context context) {
        super(context,dbName, null, dbVersion);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table tbl_stud(sid integer primary key autoincrement,sname
varchar(20),saddress varchar(50))");

    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }

    public void insert(String name,String address)
    {
        db=getWritableDatabase();
        ContentValues data=new ContentValues();
        data.put("sname",name);
        data.put("saddress",address);
        db.insert("tbl_stud",null,data);

    }

    public Cursor viewdb(){
        db=getReadableDatabase();
        Cursor cr=db.rawQuery("Select * from tbl_stud",null);
        return cr;
    }

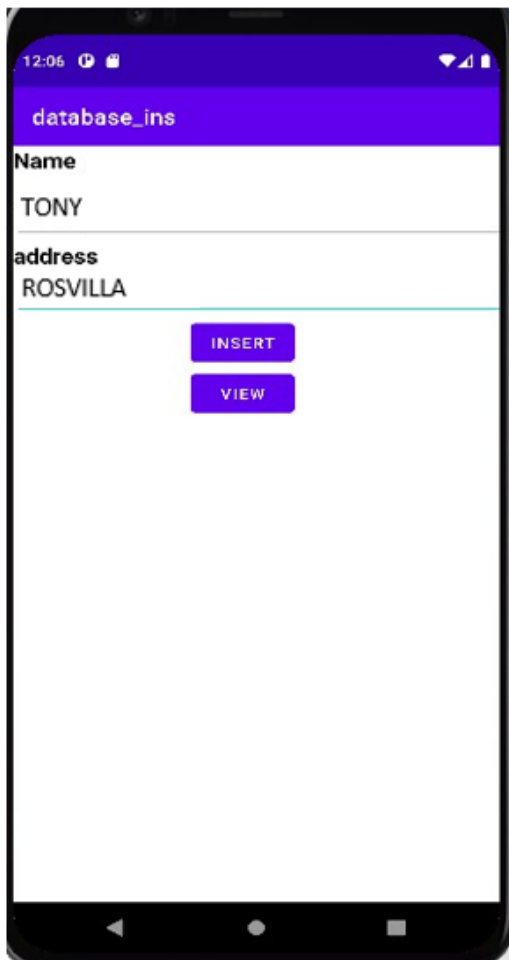
    public void delldb(String valid)
    {
        db=getWritableDatabase();
        db.delete("tbl_stud","sid=?",new String[]{ valid});
    }
}

```

```
public void uptdb(String valid,String na,String pa)
{
    db=getWritableDatabase();
    ContentValues data=new ContentValues();
    data.put("sname",na);
    data.put("saddress",pa);
    db.update("tbl_stud",data,"sid=?",new String[]{ valid});
}
}
```

Output

Insert



12:06

database_ins

Name

TONY

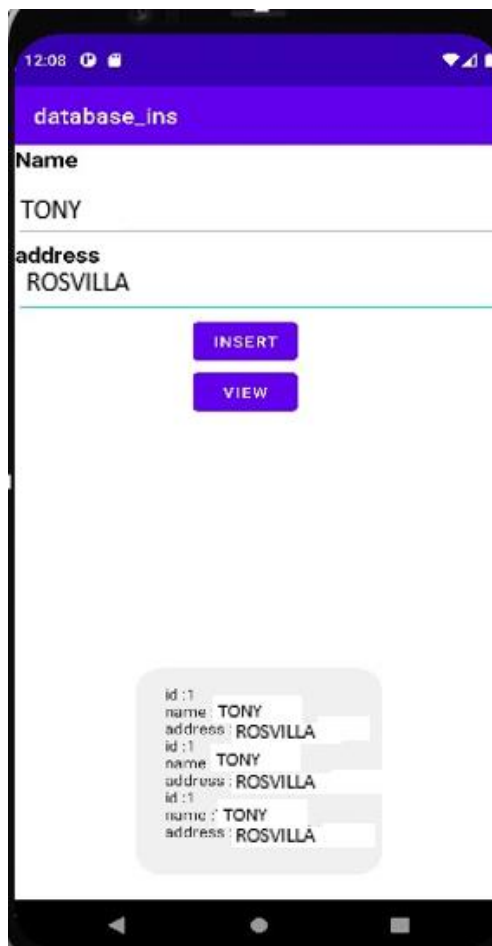
address

ROSVILLA

INSERT

VIEW

View



12:08

database_ins

Name

TONY

address

ROSVILLA

INSERT

VIEW

id : 1
name : TONY
address : ROSVILLA
id : 1
name : TONY
address : ROSVILLA
id : 1
name : TONY
address : ROSVILLA

Delete

database_ins

Name

Irene

address

ABC

INSERT

VIEW

5

DELETE

UPDATE

Update

database_ins

Name

Irene

address

ABC

INSERT

VIEW

5

DELETE

UPDATE

```
id :4
name :Anumol
address :ABC
id :5
name :Irene
address :ABC
id :6
name :Irene
address :Thannimootil
id :7
name :Irene
address :Thannimootil
id :8
name :Ivan
address :ABC
```


Update

dbse

Enter your name.

First Name
Vimal

Last Name
T

4

INSERT UPDATE VIEW DELETE

Id :4
First Name :
Last Name :
Id :5
First Name : Vimal
Last Name : Thomson

T Thanks Thank

q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123 . ,

dbse

Enter your name.

First Name

Last Name

Enter sid

INSERT UPDATE VIEW DELETE

Id :4
First Name : Vimal
Last Name : T
Id :5
First Name : Vimal
Last Name : Thomson
Id :6
First Name : Vimal
Last Name : Thomson
Id :7
First Name : Vimal
Last Name : Thomson
Id :8
First Name : Vimal
Last Name : Thomson
Id :9
First Name : Vimal
Last Name : Thomson
Id :10
First Name : Vimal
Last Name : Thomson
Id :11
First Name : Vimal

Database Structure Browse Data Edit Pragmas Execute SQL

Table: name_tbl New Record Delete Record

	sid	fn	ln
	Filter	Filter	Filter
1	4	Vimal	T
2	5	Vimal	Thomson
3	6	Vimal	Thomson
4	7	Vimal	Thomson
5	8	Vimal	Thomson
6	9	Vimal	Thomson
7	10	Vimal	Thomson
8	11	Vimal	Thomson