

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

ADARSH S

Reg. No.: AJC20MCA-2003

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]

2020-2022

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 **ADARSH S (Reg.No:AJC20MCA-2003)** 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. Meera Rose Mathew

Staff In-Charge

CONTENT

S.No	Content	Date	Page No:
1	Program to develop the android mobile application which consist of GUI components for Login Page creation.	20-1-2022	1
2	Program to display the content of EditText in TextView on button click.	20-1-2022	7
3	Program to design a Login Form with username and password using LinearLayout and toast valid credentials	27-01-2022	11
4	Program to implementing basic arithmetic operations of a simple calculator	27-01-2022	17
5	Program to implement validations on various UI controls	27-01-2022	27
6	Program to design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences	27-01-2022	35
7	Program to design a simple Calculator using GridLayout and Cascaded LinearLayout	27-01-2022	48
8	Program to create a Facebook page using RelativeLayout; set properties using .xml file	27-01-2022	59
9	Program to develop an application that toggles image using FrameLayout	27-01-2022	65
10	Program to implement Adapters and perform exception handling	27-01-2022	69
11	Program to implement Intent to navigate between multiple activities (Explicit Intent)	4-2-2022	72
12	Program to develop an application that works with Implicit intents	4-2-2022	78
13	Program to implement Options Menu to navigate to activities	4-2-2022	82
14	Program to develop an application that uses ArrayAdapter with ListView	4-2-2022	86
15	Program to develop an application that use GridView with images and display Alert box on selection	4-2-2022	90
16	Program to develop an application that implements Spinner component and perform event handling	10-2-2022	96
17	Program to apply themes via code from manifest file	10-2-2022	101
18	Program to develop application using Fragments	10-2-2022	106
19	Program to implement Navigation drawer	10-2-2022	114

20	Program to implement activity life cycle	10-2-2022	119
21	Program to implement various SQLite operations : (INSERT, UPDATE ,DELETE ,SELECT)	15-2-2022	123

Program no: 01

Aim: Program to develop the android mobile application which consist of GUI components.

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=".MainActivity"

    android:orientation="vertical"

    android:background="@color/black">

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="175dp"

        android:background="#04B3F8"

        android:layout_gravity="center"

        android:gravity="center">

        <TextView

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            style="@style/TextAppearance.AppCompat.Large"
```

```
android:text="HOME PAGE"  
android:textStyle="bold"  
android:textColor="@color/white"/>
```

```
</LinearLayout>
```

```
<androidx.cardview.widget.CardView  
    android:layout_gravity="center"  
    android:padding="75dp"  
    app:cardCornerRadius="50dp"  
    android:layout_margin="20dp"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:layout_marginTop="-175dp">
```

```
<LinearLayout  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:orientation="vertical"  
    android:layout_gravity="center"  
    android:padding="30dp"  
    android:gravity="center">
```

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

```
        android:layout_height="wrap_content"
        android:text="Login Page"
        android:textColor="#01A9F4"
        android:textStyle="bold"
        style="@style/TextAppearance.AppCompat.Medium"
        android:layout_marginBottom="20dp"/>
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Username"
    android:layout_marginBottom="15dp"/>
<EditText
    android:id="@+id/username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="20dp"/>
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="15dp"
    android:text="Password"/>
<EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```
        android:layout_marginBottom="20dp"/>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
        android:text="Forgot password?"
        android:gravity="end"/>
    <Button
        android:id="@+id/b1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="@drawable/bg_button"
        android:text="Login"
        android:layout_marginBottom="20dp"
        android:textAllCaps="false"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SignUp?"
        android:textColor="#01A9F4"
        android:textStyle="bold"/>
</LinearLayout>
</androidx.cardview.widget.CardView>
</LinearLayout>
```


Java Code:

```

package com.example.login2;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        getSupportActionBar().hide();

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

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

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Toast.makeText(MainActivity.this, "Successfully Logged in",

                Toast.LENGTH_SHORT).show();

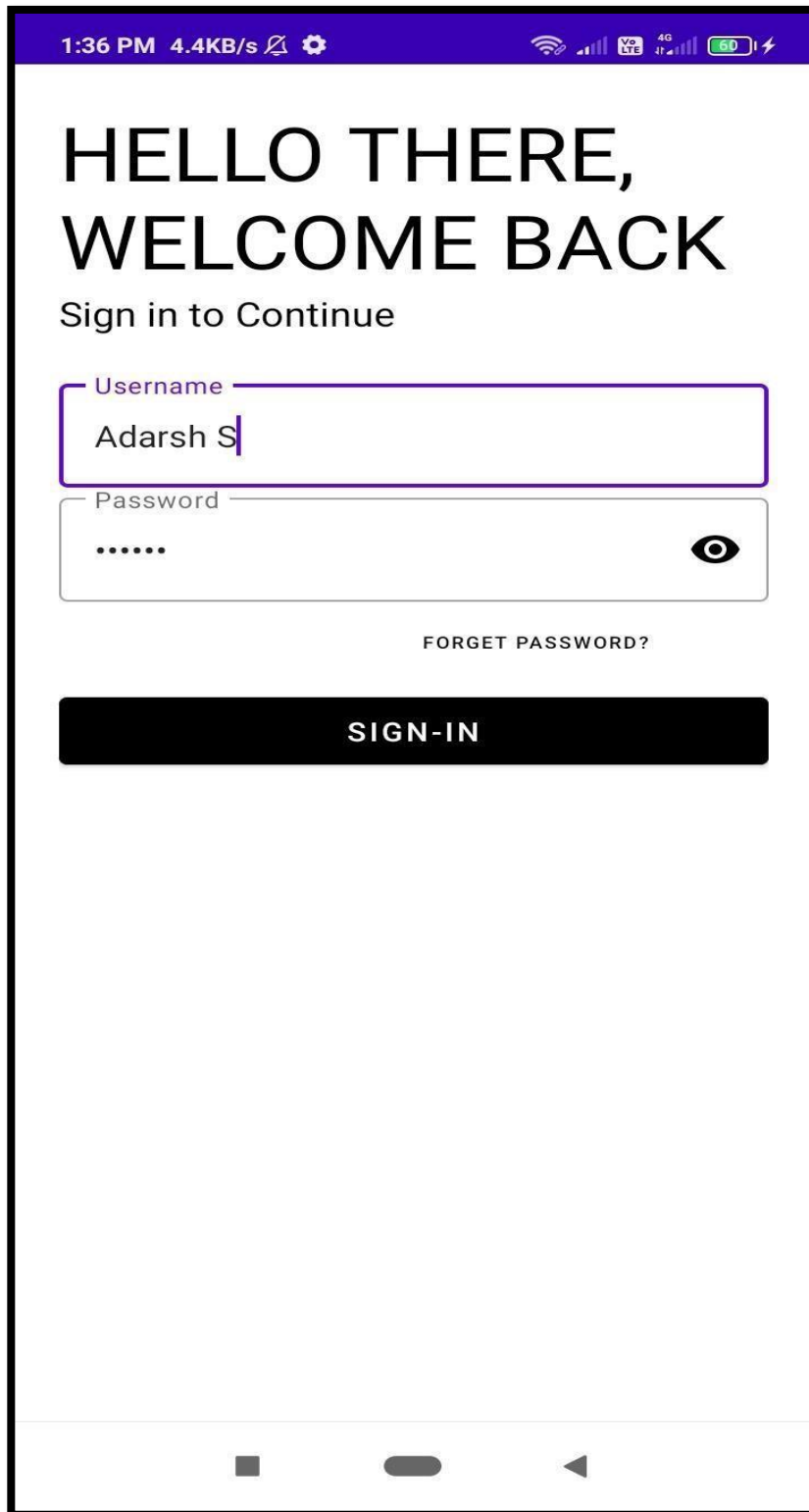
            }

        });

    }
}

```

Output:



A mobile application login screen mockup. The top status bar is purple and displays '1:36 PM', '4.4KB/s', a settings gear icon, Wi-Fi, cellular signal, 'VoLTE', '4G', and a battery icon at 60%. The main content area has a white background with the text 'HELLO THERE, WELCOME BACK' in large black font, followed by 'Sign in to Continue' in a smaller font. Below this are two input fields: 'Username' with the text 'Adarsh S' and 'Password' with masked dots. A toggle eye icon is to the right of the password field. A 'FORGET PASSWORD?' link is centered below the password field. A large black 'SIGN-IN' button is at the bottom of the form area. The bottom of the screen shows a white bar with three Android navigation icons: a square, a pill, and a triangle.

1:36 PM 4.4KB/s

HELLO THERE, WELCOME BACK

Sign in to Continue

Username

Adarsh S

Password

.....

FORGET PASSWORD?

SIGN-IN

Program no: 02**Aim:**

Program to display the content of EditText in TextView on buttonclick.

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=".MainActivity"
    android:layout_gravity="center"
    android:gravity="center"
    android:padding="30dp"
    android:background="#F44336">
    <androidx.cardview.widget.CardView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="25dp">
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:layout_gravity="center"
```

```
android:padding="25dp">
```

```
<EditText
```

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

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:hint="Enter"
```

```
    android:textColor="@color/black"
```

```
    android:layout_marginBottom="15dp"/>
```

```
<TextView
```

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

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:textColor="@color/black"
```

```
    style="@style/TextAppearance.AppCompat.Large"
```

```
    android:layout_marginBottom="15dp"/>
```

```
<Button
```

```
    android:id="@+id/b1"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Get Text"/>
```

```
</LinearLayout>
```

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

```
</LinearLayout>
```

Java Code:

```
package com.example.textview2;

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 org.w3c.dom.Text;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        getSupportActionBar().hide();

        EditText in =findViewById(R.id.in);

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

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

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                String input =in.getText().toString();

                out.setText(input);

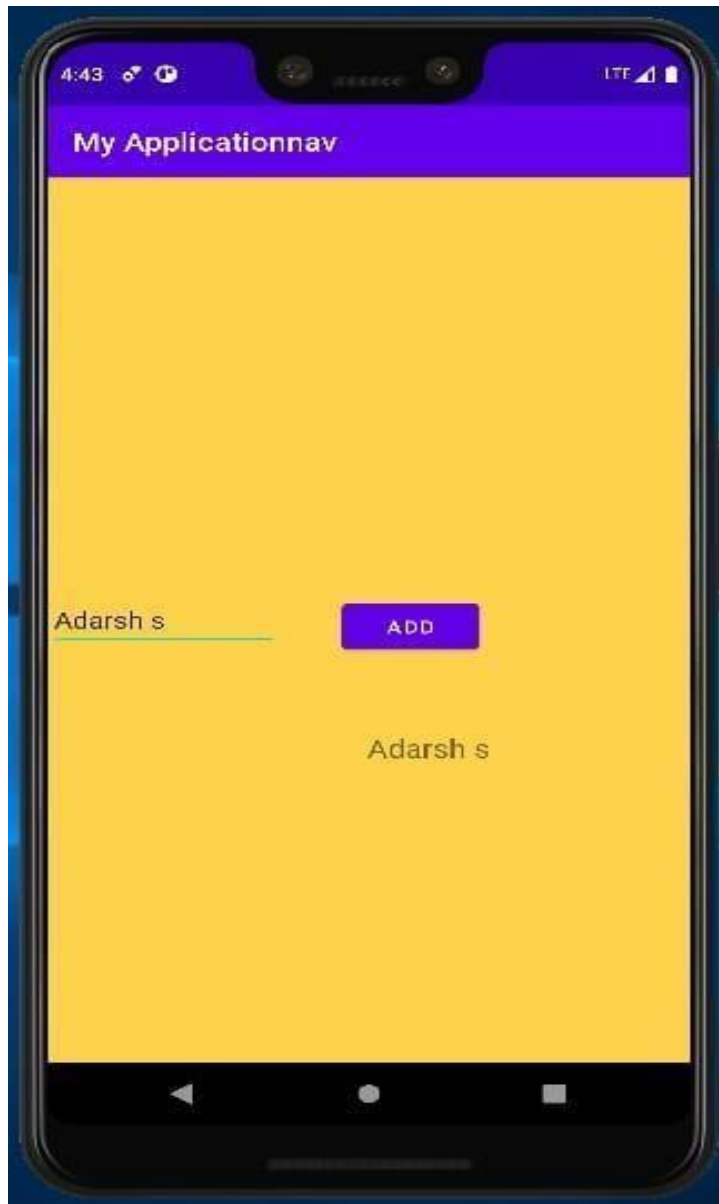
            }

        })

    }

}
```

```
});  
}  
}
```

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:background="#504B4B"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="center"
        android:gravity="left|center"
        android:orientation="vertical"
        android:padding="80dp">

        <androidx.cardview.widget.CardView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
```

```
        android:layout_marginBottom="40dp"
        app:cardCornerRadius="25dp">
        <ImageView
            android:layout_width="80dp"
            android:layout_height="64dp"
            android:layout_gravity="center"
            android:src="@drawable/login" />
    </androidx.cardview.widget.CardView>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
        android:text="Username"
        android:textColor="#A4BABA" />

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
```



```
        android:text="Password"
        android:textColor="#A4BABA" />
<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="20dp"
    android:inputType="textPassword" />
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="end"
    android:layout_marginBottom="20dp"
    android:text="Forgot Password?"
    android:textColor="#A4BABA" />

<Button
    android:id="@+id/b1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="20dp"
    android:background="@drawable/bg_button"
    android:text="Login"
    android:textAllCaps="false" />
```

<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:gravity="center"

android:orientation="horizontal">

<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_marginRight="15dp"

android:text="New User?"

android:textColor="#A4BABA" />

<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="SignUp?"

android:textColor="#48B34C"

android:textStyle="bold" />

</LinearLayout>

<EditText

android:layout_width="match_parent"

android:layout_height="wrap_content" />

```
</LinearLayout>

</LinearLayout>
```

Java Code:

```
package com.example.loginpage;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

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

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

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

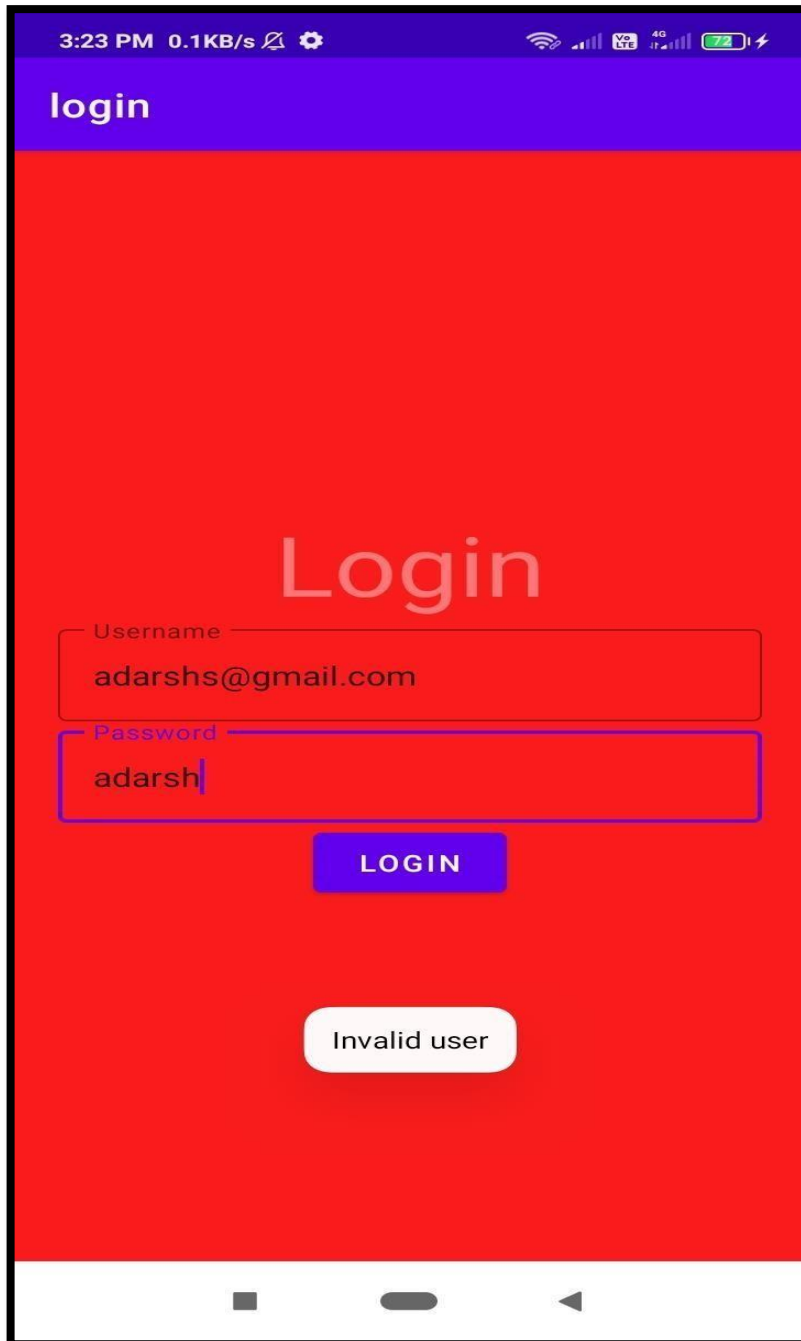
                String user=username.getText().toString();

                Toast.makeText(MainActivity.this, "Welcome "+user,

                Toast.LENGTH_LONG).show();
```

```
}  
});  
}  
}
```

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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center">

        <EditText
            android:id="@+id/op1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
```

```
android:hint="Operand 1" />
```

```
<EditText
```

```
    android:id="@+id/op2"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_margin="20dp"
```

```
    android:hint="Operand 2" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:gravity="center">
```

```
<Button
```

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

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginRight="10dp"
```

```
    android:text="+"
```

```
    android:textSize="20dp" />
```

```
<Button
    android:id="@+id/minus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginRight="10dp"
    android:text="-"
    android:textSize="20dp" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="25dp">
```

```
<Button
    android:id="@+id/mul"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginRight="10dp"
    android:text="*"
    android:textSize="20dp" />
```

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

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="/"
        android:textSize="20dp" />
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="25dp">
```

```
<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text=""
    android:textSize="20dp" />
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="30dp"
    android:gravity="center">
```



```

<TextView
    android:id="@+id/output"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Output"
    android:textSize="30dp" />
</LinearLayout>
</LinearLayout>

```

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;
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;

        }

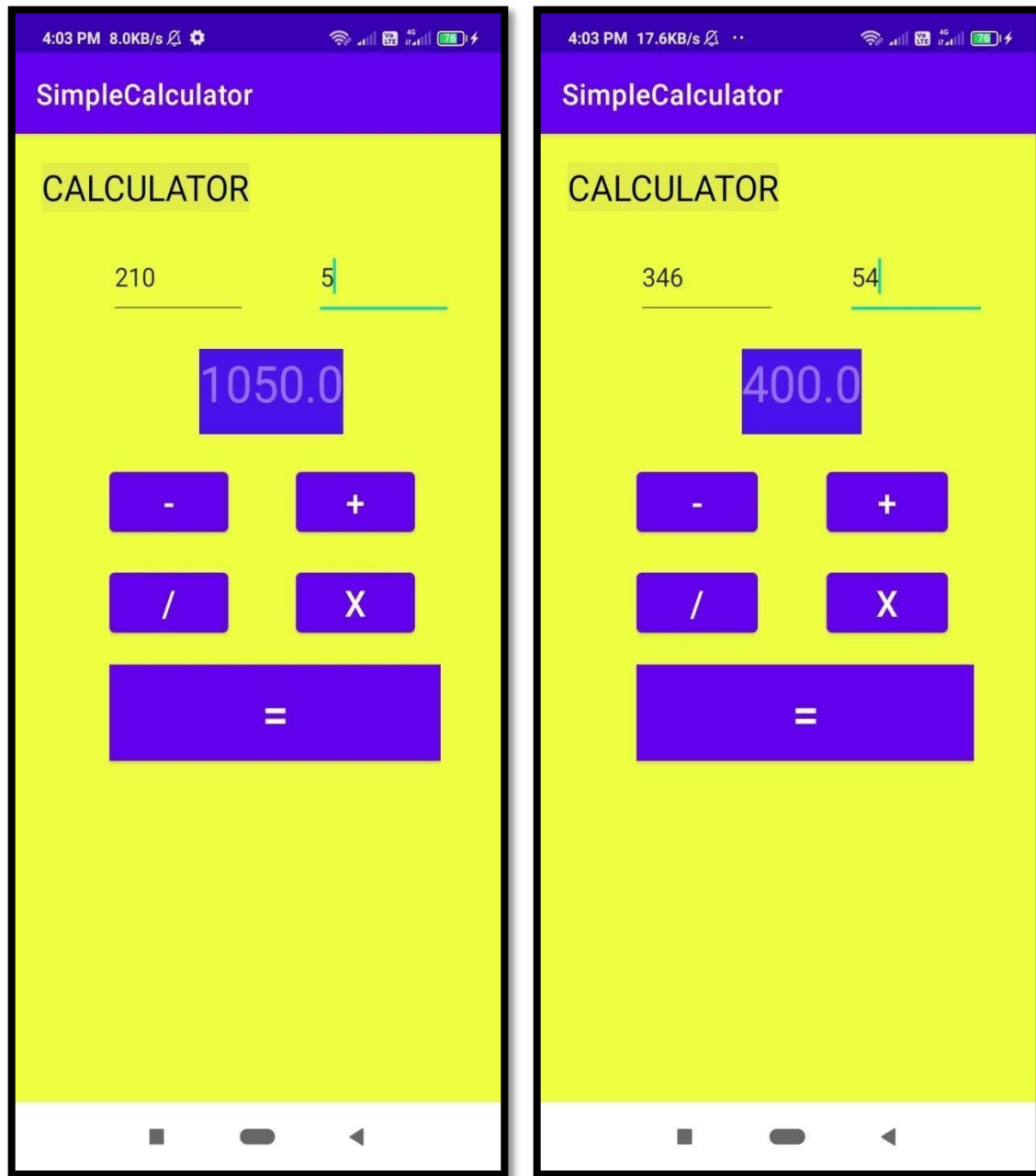
    });

    }

}

```

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.adaptor;

import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

```

```

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {

    Button bCancel, bProceed;

    EditText etFirstName, etLastName, etEmail, etPassword;

    boolean isAllFieldsChecked = false;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        bProceed = findViewById(R.id.proceedButton);

        bCancel = findViewById(R.id.cancelButton);

        etFirstName = findViewById(R.id.firstName);

        etLastName = findViewById(R.id.lastName);

        etEmail = findViewById(R.id.email);

        etPassword = findViewById(R.id.password);


        bProceed.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                if (isAllFieldsChecked) {

                    Intent i = new Intent(Ui_validation.this, Dashboard.class);

```

```

        startActivity(i);
    }
}

});

bCancel.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Ui_validation.this.finish();

        System.exit(0);

    }

});
}

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;  
    }  
    }  
}
```

Output

4:23 PM 2.0KB/s

UiControl

First Name

Last Name

Email

Password

PROCEED

This field is required

Detailed description: This is a mobile application interface for a registration form. The title bar is purple and contains the text 'UiControl'. Below the title bar, there are four text input fields labeled 'First Name', 'Last Name', 'Email', and 'Password'. The 'First Name' field is currently empty and has a red exclamation mark icon above it, indicating a validation error. A black tooltip box with the text 'This field is required' is positioned over the 'First Name' field. At the bottom right of the form, there is a black button with the text 'PROCEED' in white.

4:24 PM 51.8KB/s

UiControl

Adarsh

S

Email

Password

PROCEED

Email is required

Detailed description: This is a mobile application interface for a registration form, similar to the one on the left. The title bar is purple and contains the text 'UiControl'. Below the title bar, there are four text input fields. The 'First Name' field now contains the text 'Adarsh'. The 'Last Name' field contains the text 'S'. The 'Email' field is empty and has a red exclamation mark icon above it, indicating a validation error. A black tooltip box with the text 'Email is required' is positioned over the 'Email' field. At the bottom right of the form, there is a black button with the text 'PROCEED' in white.

Program no: 06

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

XML Code:

activity_main.xml

```
<?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:layout_gravity="center"

    android:orientation="vertical"

    tools:context=".MainActivity">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:text="Intent Form"

        android:textColor="#0A5D83"

        android:textSize="40dp" />

    <EditText

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

```
android:layout_width="150dp"  
android:layout_height="wrap_content"  
android:layout_gravity="center"  
android:layout_margin="40dp"  
android:hint="Name"  
android:textColor="@color/black" />
```

<EditText

```
android:id="@+id/ieemail"  
android:layout_width="150dp"  
android:layout_height="wrap_content"  
android:layout_gravity="center"  
android:layout_marginBottom="40dp"  
android:hint="email"  
android:textColor="@color/black" />
```

<TextView

```
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_gravity="center"  
android:text="SharedPreferences Form"  
android:textColor="#0A5D83"  
android:textSize="30dp" />
```


<EditText

```
    android:id="@+id/sname"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="40dp"
    android:hint="Name"
    android:textColor="@color/black" />
```

<EditText

```
    android:id="@+id/semail"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginBottom="40dp"
    android:hint="email"
    android:textColor="@color/black" />
```

<Button

```
    android:id="@+id/save"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="SAVE" />
```

</LinearLayout>

activity_main2.xml

<?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:layout_gravity="center"

android:orientation="vertical"

tools:context=".MainActivity2">

<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Intent Form"

android:textColor="#0A5D83"

android:textSize="40dp" />

<LinearLayout

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

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

```
<TextView
```

```
    android:layout_width="150dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_gravity="center"
```

```
    android:gravity="center"
```

```
    android:text="Name"
```

```
    android:textColor="@color/black" />
```

```
<TextView
```

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

```
    android:layout_width="150dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_gravity="center"
```

```
    android:layout_margin="40dp"
```

```
    android:textColor="@color/black" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
android:layout_gravity="center"  
android:orientation="horizontal">
```

```
<TextView  
    android:layout_width="150dp"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:gravity="center"  
    android:text="email"  
    android:textColor="@color/black" />
```

```
<TextView  
    android:id="@+id/ioemail"  
    android:layout_width="150dp"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:layout_margin="40dp"  
    android:textColor="@color/black" />
```

```
</LinearLayout>
```

```
<TextView
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:text="SharedPreferences Form"
android:textColor="#0A5D83"
android:textSize="30dp" />
```

<LinearLayout

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:orientation="horizontal">
```

<TextView

```
android:layout_width="150dp"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:gravity="center"
android:text="Name"
android:textColor="@color/black" />
```

<TextView

```
android:id="@+id/soname"
android:layout_width="150dp"
```

```
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:layout_margin="40dp"  
    android:textColor="@color/black" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:orientation="horizontal">
```

```
<TextView
```

```
    android:layout_width="150dp"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:gravity="center"  
    android:text="email"  
    android:textColor="@color/black" />
```

```
<TextView
```

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

```

        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="40dp"
        android:textColor="@color/black" />

```

```
</LinearLayout>
```

```
</LinearLayout>
```

Java Code:

MainActivity.java

```

package com.example.adaptor;

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 androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

```

```

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    EditText iname = findViewById(R.id.iname);

    EditText sname = findViewById(R.id.sname);

    EditText iemail = findViewById(R.id.iemail);

    EditText semail = findViewById(R.id.semail);

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

    save.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            Intent i1 = new Intent(MainActivity.this, MainActivity2.class);

            i1.putExtra("name", iname.getText().toString());

            i1.putExtra("email", iemail.getText().toString());

            SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
                MODE_PRIVATE);

            SharedPreferences.Editor myEdit = sharedPreferences.edit();

            myEdit.putString("name", sname.getText().toString());

            myEdit.putString("email", semail.getText().toString());

            myEdit.apply();

            startActivity(i1);

```



```

        }
    });
}
}

```

MainActivity2.java

```

package com.example.adaptor;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity2 extends AppCompatActivity {

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

        TextView ioname = findViewById(R.id.ioname);
        TextView ioemail = findViewById(R.id.ioemail);
        TextView soname = findViewById(R.id.soname);
        TextView soemail = findViewById(R.id.soemail);
    }
}

```

```
Intent i1 = getIntent();

ioname.setText(i1.getStringExtra("name"));

ioemail.setText(i1.getStringExtra("email"));

SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
    MODE_PRIVATE);

String Name = sharedPreferences.getString("name", "");

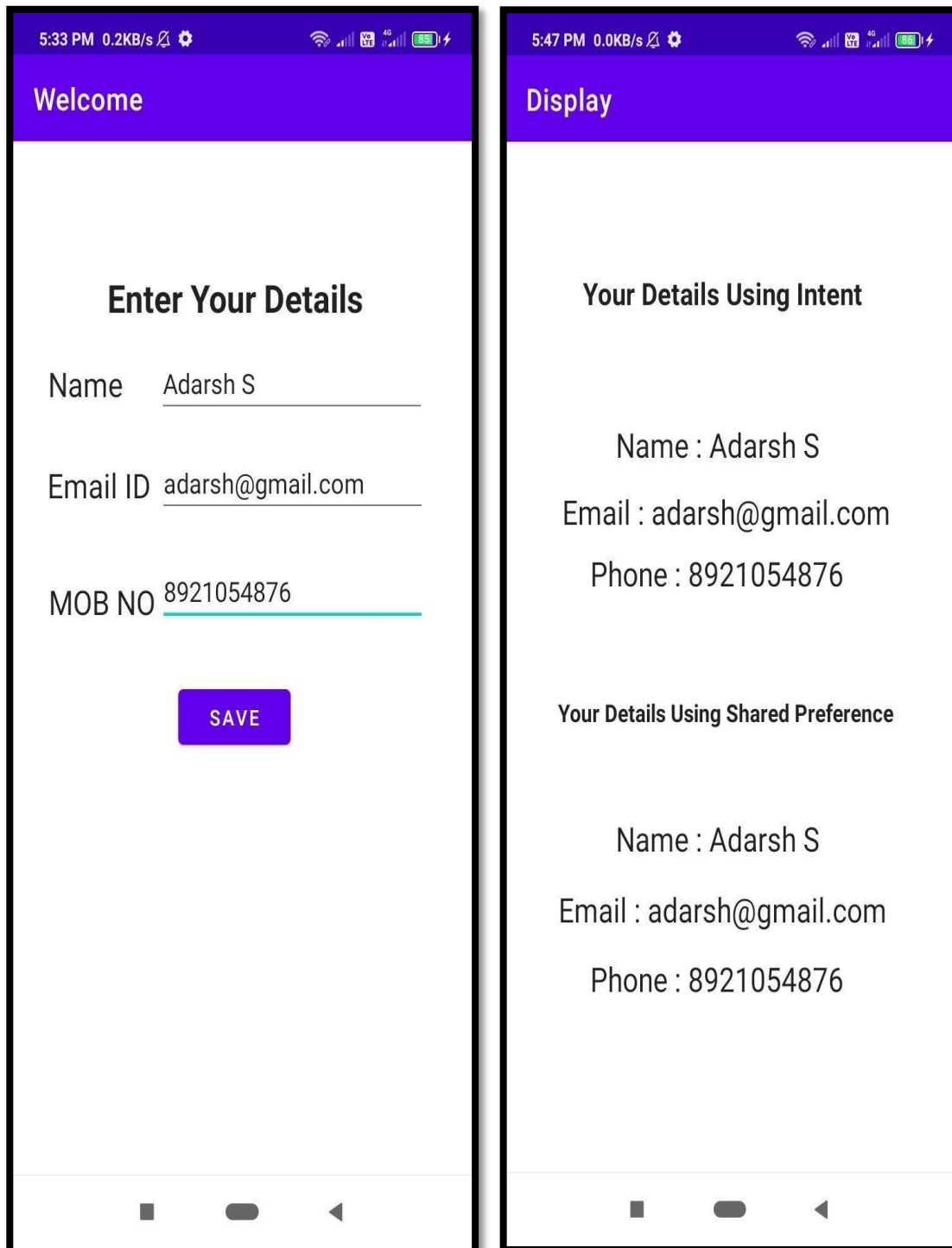
String Email = sharedPreferences.getString("email", "");

soname.setText(Name);

soemail.setText(Email);

}

}
```

Output:

Program no: 07**Aim:**

Design a simple calculator using Grid Layout 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=".MainActivity">

    <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="9+10"
```

```
    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="=19"
```

```
    android:textAlignment="textEnd"
```

```
    android:textColor="@color/white"
```

```
    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="wrap_content"  
    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="wrap_content"  
    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="wrap_content"
```

```
    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="wrap_content"  
    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="wrap_content"  
    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="wrap_content"  
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_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:background="@drawable/bg_button"
    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:background="@drawable/bg_button"
    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: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="wrap_content"  
    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="wrap_content"
        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="wrap_content"
        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.grid_layout;

import androidx.appcompat.app.AppCompatActivity;

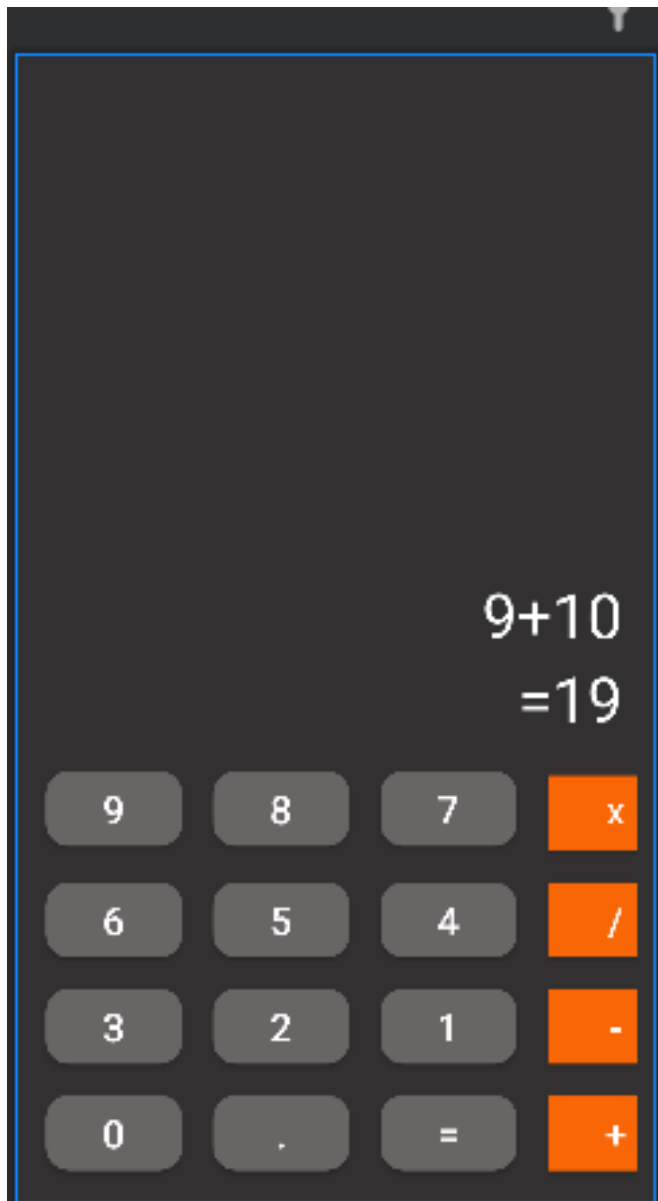
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

```

Output



Program no: 08

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=".MainActivity">
    <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/fb"  
    android:text="facebook"  
    android:textSize="36dp"  
    android:padding="10dp"  
    android:textColor="@color/white" />
```

```
</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"  
        android:background="@drawable/bg_box"/>
```


<EditText

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="30dp"
    android:background="@drawable/bg_box"
    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_marginRight="75dp"
    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="50dp"
    android:layout_weight="1"
    android:textStyle="bold"
    android:text="?"/>

```

```
</LinearLayout>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

Java code:

```
package com.example.facebook;

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);
        getSupportActionBar().hide();
    }
}
```

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.frame_layout;

import androidx.appcompat.app.AppCompatActivity;

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

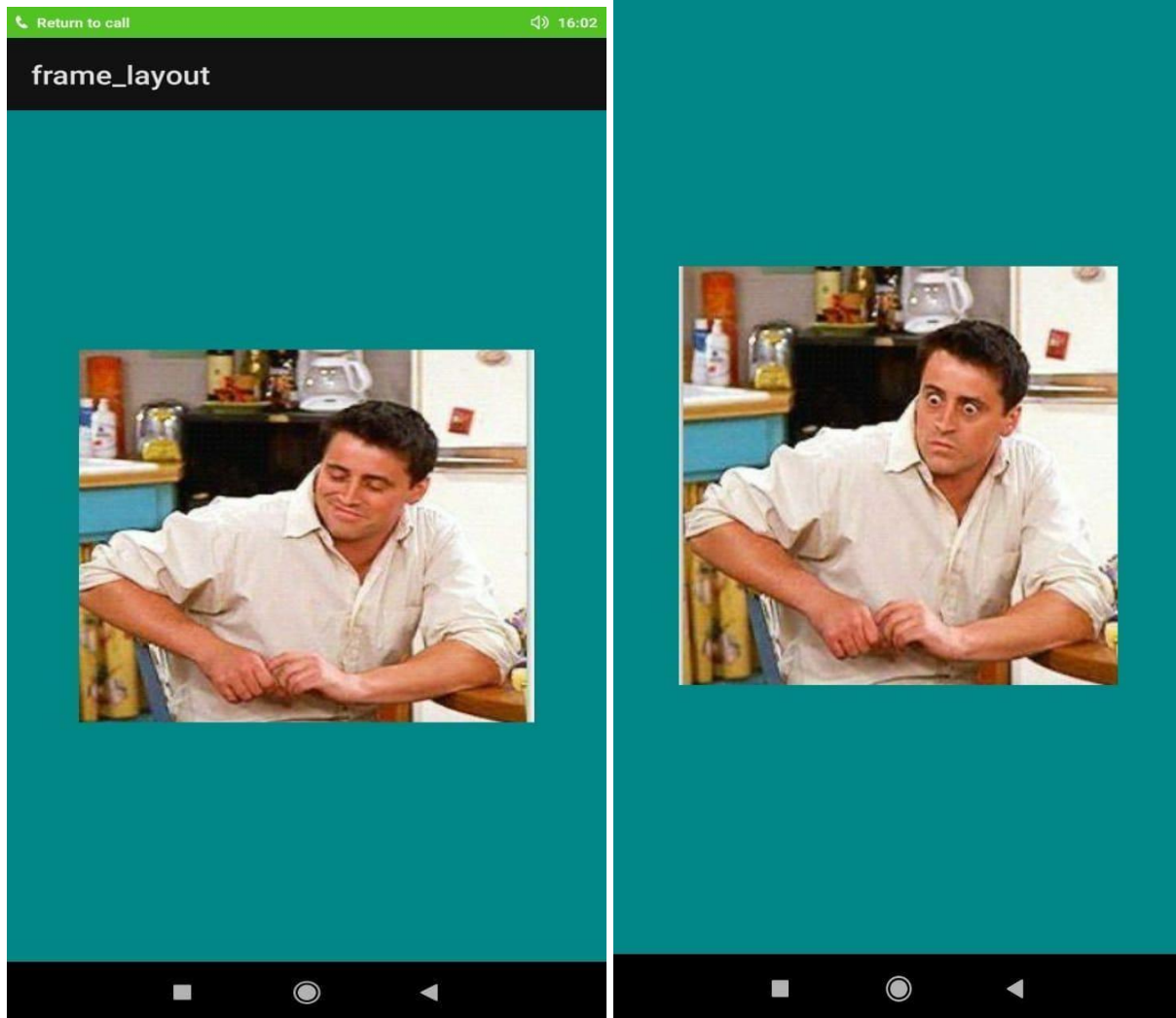
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
    ImageView img1,img2;

    @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"?>

<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=".exception">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView" />

</LinearLayout>
```

Java Code:

```
package com.example.exception;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```
import android.widget.TextView;

import android.widget.Toast;

public class exception extends AppCompatActivity {

    TextView textView;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_exception);

        try {

            textView.setText("Hello there...");

        } catch (Exception e) {

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

        }

    }

}
```

Output



Program no: 11**Aim:**

Implement Intent to navigate between multiple activities

XML Code:**Activity_main.xml**

```
<?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=".MainActivity"

    android:background="#4CAF50"

    android:gravity="center">

    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Page1 "

        android:textColor="@color/black"

        android:textSize="50dp" />

    <Button
```

```

        android:id="@+id/page1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Go to page 2" />

```

```
</LinearLayout>
```

Activity_main2.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:background="#FFEB3B"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Page2"
        android:textColor="@color/black"
        android:textSize="50dp" />

```

```

<Button
    android:id="@+id/page2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Go to page 1" />

```

```
</LinearLayout>
```

Java Code:

Main Activiy.java

```

package com.example.adaptor;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
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);

Button page1=findViewById(R.id.page1);

page1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Intent i1=new Intent(MainActivity.this,MainActivity2.class);

        startActivity(i1);

    }

});

}

}

```

Main Activiy2.java

```

package com.example.adaptor;

import androidx.appcompat.app.AppCompatActivity;

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

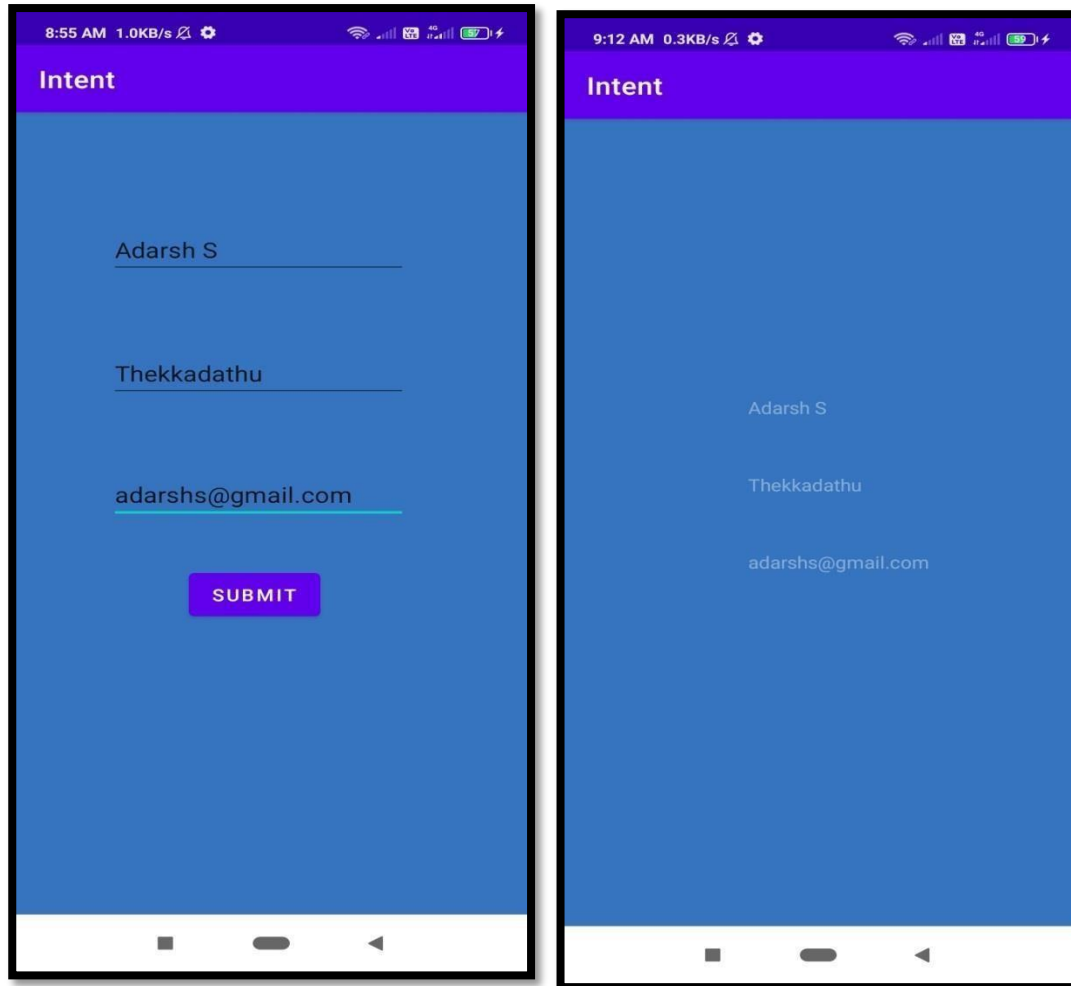
public class MainActivity2 extends AppCompatActivity {

    @Override

```

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main2);  
    Button page2 = findViewById(R.id.page2);  
    page2.setOnClickListener(new View.OnClickListener() {  
        @Override  
        public void onClick(View v) {  
            Intent i2 = new Intent(MainActivity2.this, MainActivity.class);  
            startActivity(i2);  
        }  
    });  
}
```


Output



Program no: 12

Aim: Develop an application that works with explicit intents

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=".MainActivity"

    android:background="#4CAF50"

    android:gravity="center">

    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Explicit Intent"

        android:textColor="@color/black"

        android:textSize="50dp" />

    <Button

        android:id="@+id/page1"

        android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"

        android:text="Go to Gooogle" />
</LinearLayout>

```

Java Code:

```

package com.example.adaptor;

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;

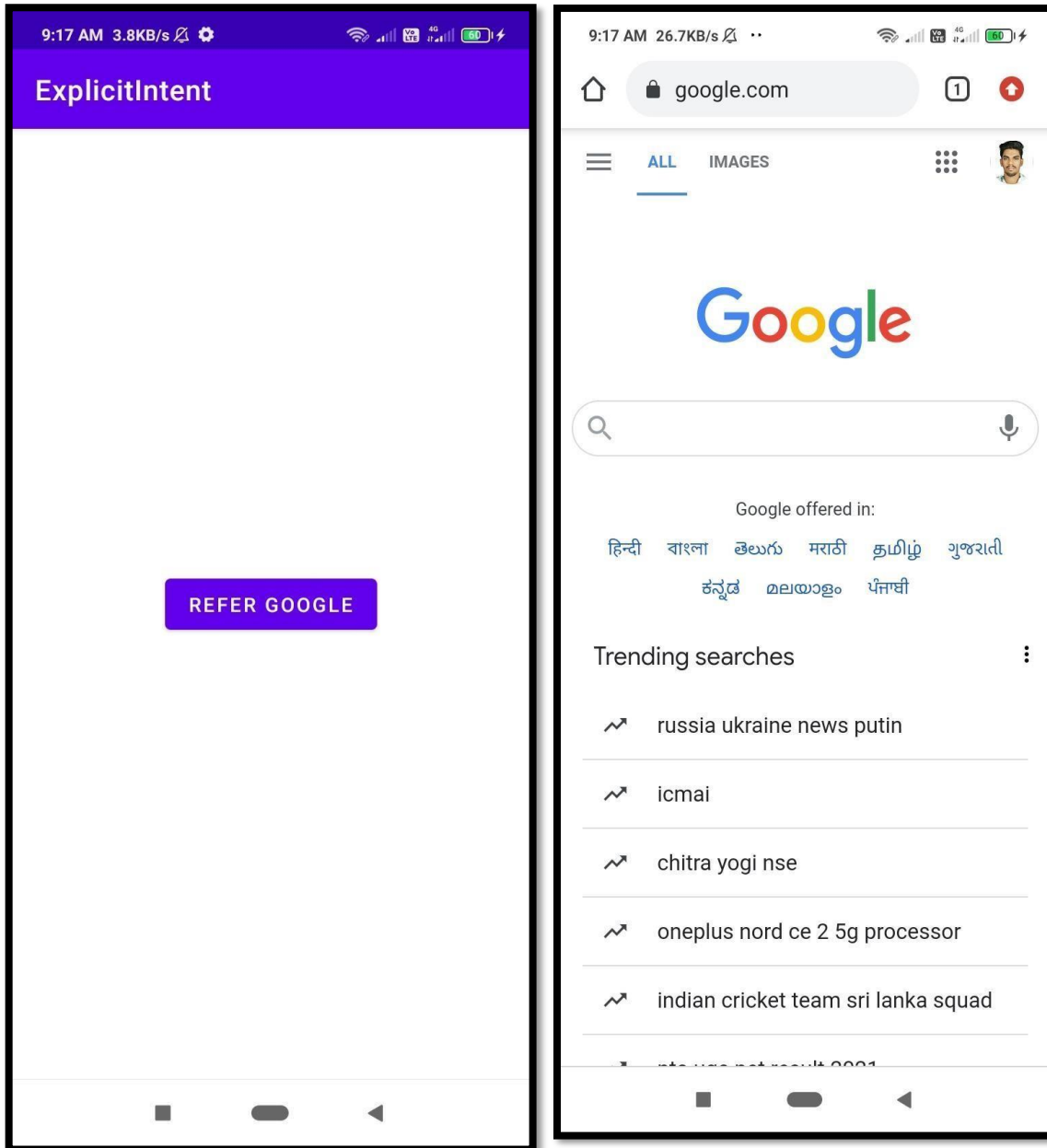
public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button page1=findViewById(R.id.page1);
        page1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

```

```
        Intent i1=new Intent(Intent.ACTION_VIEW, Uri.parse("https://www.google.com/"));
        startActivity(i1);
    }
});
}
}
```

Output:

Program no: 13

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:orientation="vertical"

    tools:context=".MainActivity">

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

Menu.xml

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

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

    <item

        android:title="Home page"

        android:id="@+id/op1"/>

    <item

        android:title="Login Page"

        android:id="@+id/op2"/>

    <item

        android:title="Registration Page"
```

```
android:id="@+id/op3"/>
```

```
</menu>
```

JavaCode:

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

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

```
import android.view.Menu;
```

```
import android.view.MenuInflater;
```

```
import android.view.MenuItem;
```

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

```
import androidx.annotation.NonNull;
```

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

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

```
    @Override
```

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

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

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

```
    }
```

@Override

```
public boolean onCreateOptionsMenu(Menu menu) {  
    MenuInflater menuInflater = getMenuInflater();  
    menuInflater.inflate(R.menu.example_menu, menu);  
    return true;  
}
```

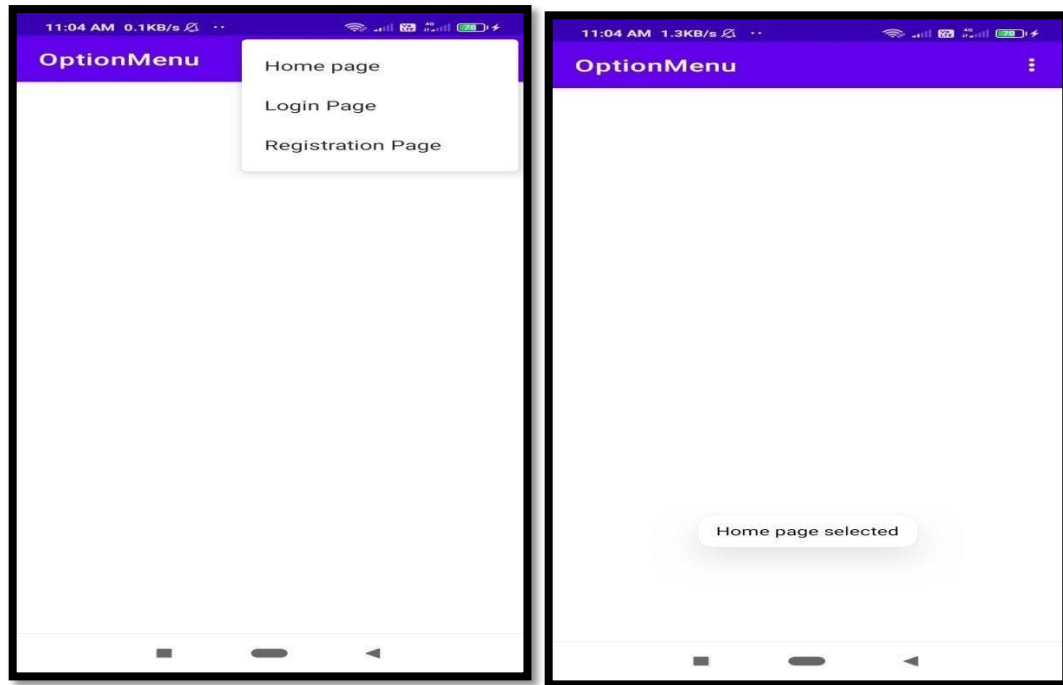
@Override

```
public boolean onOptionsItemSelected(@NonNull MenuItem item) {  
    switch (item.getItemId()){  
        case R.id.op1:  
            Toast.makeText(this, "Home page selected", Toast.LENGTH_SHORT).show();  
            break;  
        case R.id.op2:  
            Toast.makeText(this, "Login page selected", Toast.LENGTH_SHORT).show();  
            break;  
        case R.id.op3:  
            Toast.makeText(this, "Registration page selected", Toast.LENGTH_SHORT).show();  
            break;  
    }  
    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"?>

<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=".MainActivity">

    <ListView

        android:id="@+id/mobile_list"

        android:layout_width="match_parent"

        android:layout_height="wrap_content" >

    </ListView>

</LinearLayout>
```

Java Code:

```
package com.example.adaptor;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
```

```

import android.net.Uri;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

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

import android.widget.Button;

import android.widget.ListView;

import android.widget.TextView;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {

    ListView l;

    String[] days = {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday",
        "Saturday"};


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

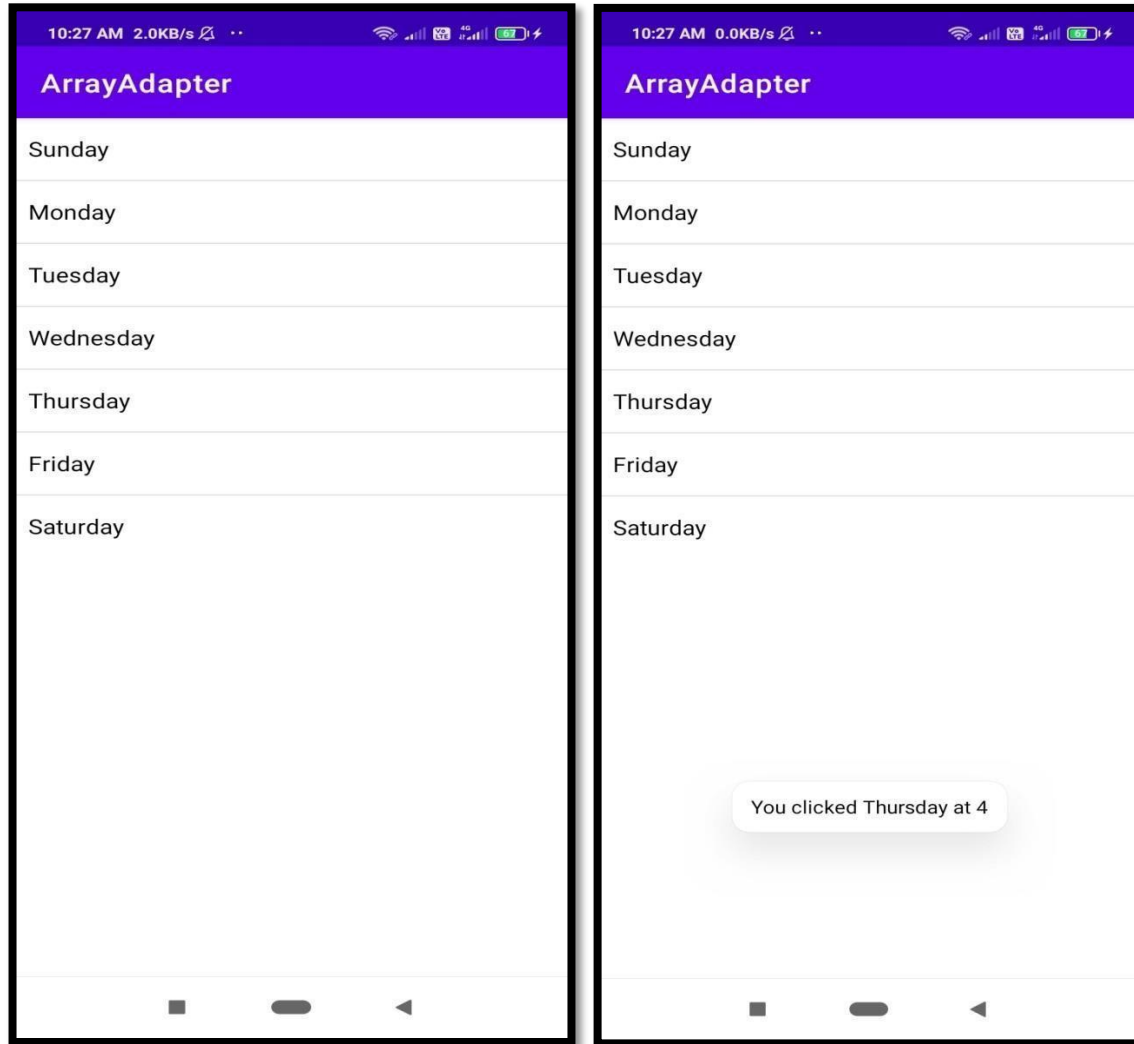
        l = findViewById(R.id.mobile_list);

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

        l.setAdapter(adapter);

```

```
l.setOnItemClickListener(this);  
}  
  
@Override  
public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {  
    TextView temp = (TextView) view;  
    Toast.makeText(this, "You clicked " + temp.getText() + " at " + i,  
        Toast.LENGTH_LONG).show();  
}  
}
```

Output:

Program no: 15

Aim: Develop an application that use GridView with images and display Alert box on selection

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="#B5A830"

    tools:context=".MainActivity">

    <GridView

        android:id="@+id/gridView"

        android:layout_width="fill_parent"

        android:layout_height="wrap_content"

        android:footerDividersEnabled="false"

        android:numColumns="3"

        android:padding="1dp" />

</LinearLayout>
```

ImageAdaptor.java

```
package com.example.pg15;

import android.content.Context;

import android.view.View;
```

```
import android.view.ViewGroup;

import android.widget.BaseAdapter;

import android.widget.GridView;

import android.widget.ImageView;


public class ImageAdapter extends BaseAdapter {

    private Context mContext;

    public ImageAdapter(Context c) {

        mContext = c;

    }

    public int getCount() {

        return thumbImages.length;

    }

    public Object getItem(int position) {

        return null;

    }

    public long getItemId(int position) {

        return 0;

    }

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

        ImageView imageView = new ImageView(mContext);

        imageView.setLayoutParams(new GridView.LayoutParams(200, 200));

        imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
```

```
imageView.setPadding(8, 8, 8, 8);  
imageView.setImageResource(thumbImages[position]);  
return imageView;  
}
```

```
public Integer[] thumbImages = {  
    R.drawable.cl1,  
    R.drawable.cl2,  
    R.drawable.cl3,  
    R.drawable.cl4,  
    R.drawable.cl5,  
    R.drawable.cl6  
};  
}
```

Java Code:

```
package com.example.pg15;  
  
import android.content.Context;  
import android.content.DialogInterface;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.GridView;
```



```

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

public class MainActivity extends AppCompatActivity {

    GridView gd;

    int logos[] = {R.drawable.cl1, R.drawable.cl2, R.drawable.cl3, R.drawable.cl4};

    String[] names = {"bird", "pup", "kitten", "nasa", "panda", "peacock",};

    final Context context = this;

    AlertDialog.Builder builder;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        GridView gv = (GridView) findViewById(R.id.gridView);

        gv.setAdapter(new ImageAdapter(this));

        builder = new AlertDialog.Builder(this);

        gv.setOnItemClickListener(new AdapterView.OnItemClickListener() {

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

                builder.setMessage("Name : " + String.valueOf(names[position]))

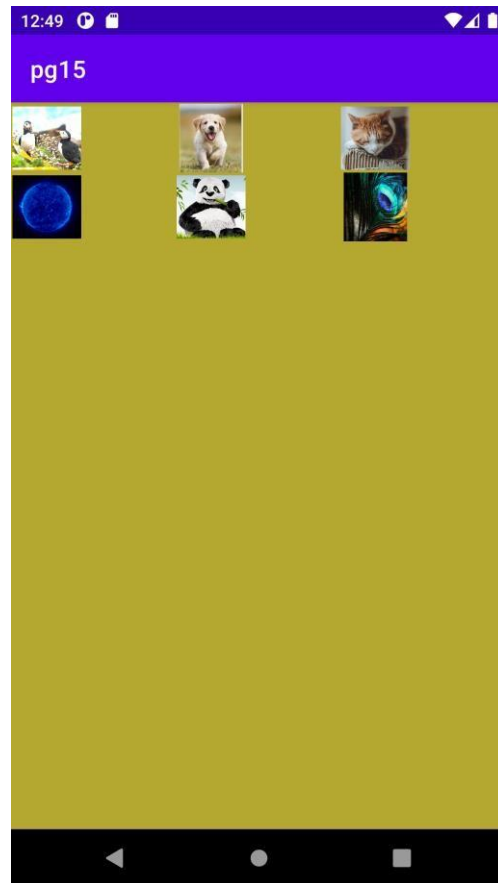
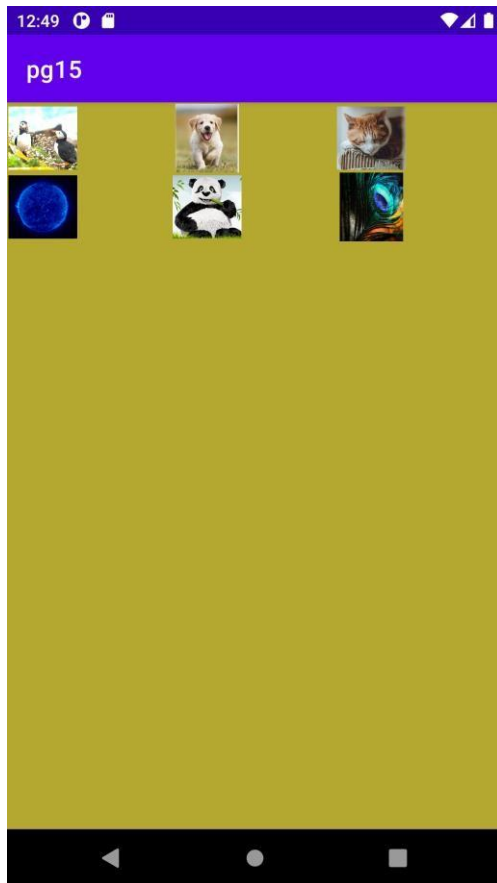
                    .setCancelable(false)

                    .setPositiveButton("Ok", new DialogInterface.OnClickListener() {

```

```
        public void onClick(DialogInterface dialog, int id) {  
            }  
        });  
  
        AlertDialog alert = builder.create();  
  
        alert.setTitle("Info Alert");  
        alert.show();  
    }  
  
});  
  
}  
}
```

Output



Program no: 16

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

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"

    android:gravity="center"

    android:background="#6F657C"

    tools:context=".MainActivity">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Spinner"

        android:textSize="30dp"

        android:textStyle="bold"

        android:textColor="@color/black"/>

    <LinearLayout

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="25dp"
```

```

        android:orientation="horizontal">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/white"
            android:textSize="25dp"
            android:text="Language " />

        <Spinner
            android:id="@+id/spinner"
            android:layout_width="160dp"
            android:layout_height="50dp" />
    </LinearLayout>
</LinearLayout>

```

Java code:

```

package com.example.recordremaining;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;

```

```

import android.widget.Spinner;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {


    String[] Languages = {"Python", "Java", "C++", "DJango", "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);


        //Creating the ArrayAdapter instance having the country list

        ArrayAdapter aa = new ArrayAdapter(this, android.R.layout.simple_spinner_item,
Languages);

        aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);

        //Setting the ArrayAdapter data on the Spinner

        spin.setAdapter(aa);

    }

```

```
//Performing action onItemSelected and onNothing selected

@Override

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

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

}

@Override

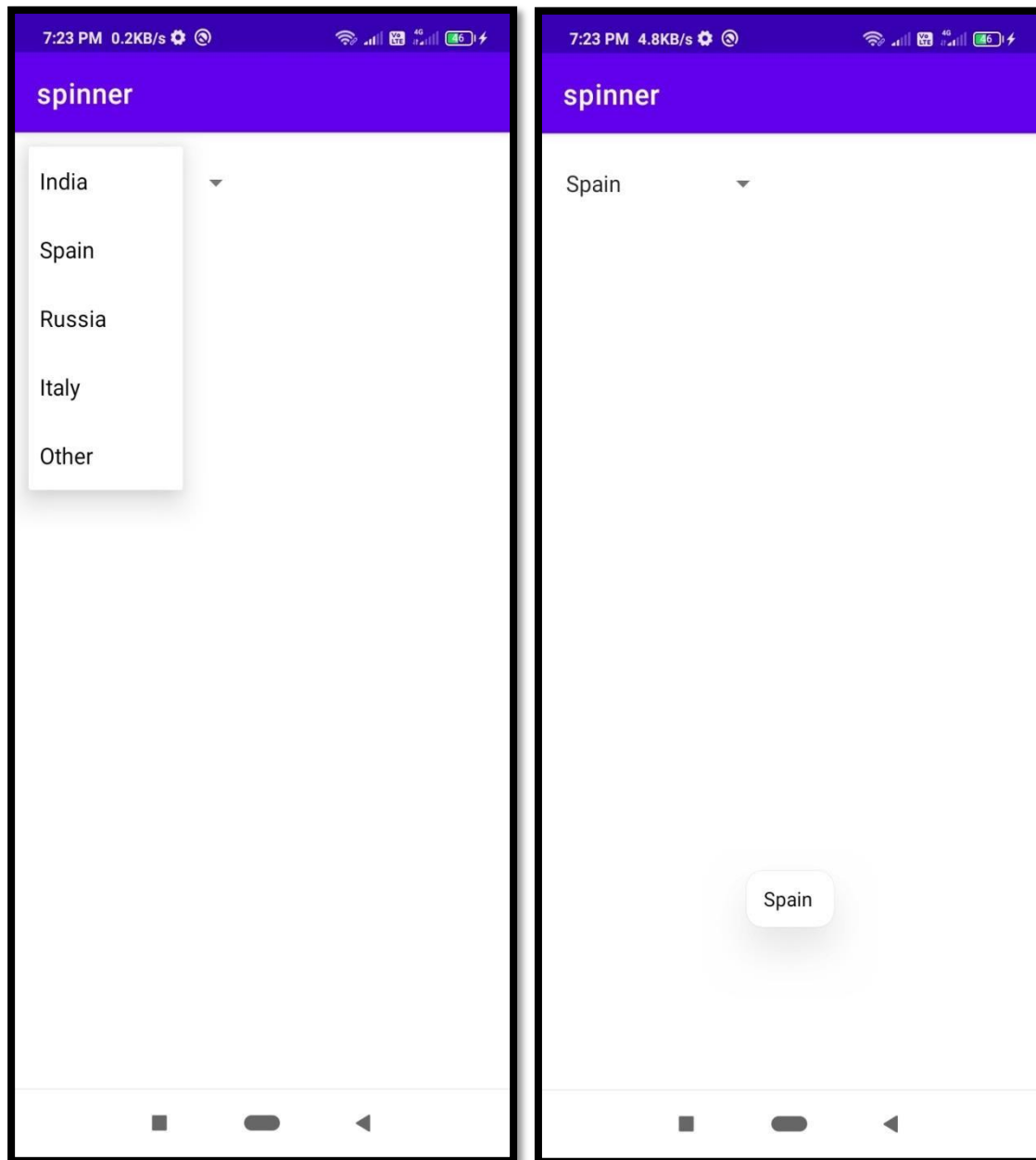
public void onNothingSelected(AdapterView<?> arg0) {

    // TODO Auto-generated method stub

}

}
```

Output



Program no: 17**Aim:** Apply themes via code and 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:orientation="vertical"

    android:gravity="center"

    android:background="#6F657C"

    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>

```

//colors.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.VaidyaKare"
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.vaidyakare">

```

```
<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.VaidyaKare">

    <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.recordremaining;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.Spinner;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override

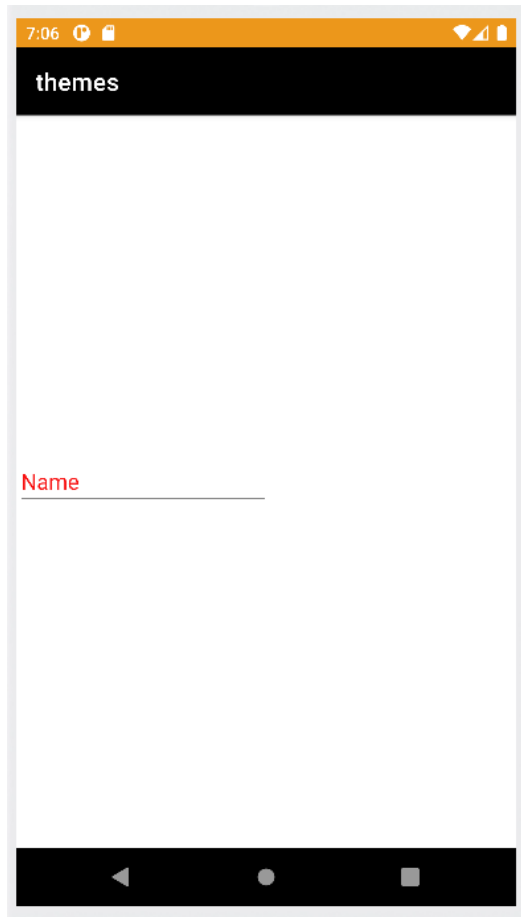
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }

}
```

Output:

Program no: 18

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:orientation="vertical"


    android:layout_height="match_parent"

    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="#000000"  
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="#0AFFDA"  
    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/teal_200"/>
```

```
</LinearLayout>
```

Fragement1.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"
    tools:context=".fragment1">

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:background="#1959bf"
        android:text="Fragment1"
        android:textSize="50dp" />

</RelativeLayout>
```

Fragement1.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"
        tools:context=".fragment2">
<!-- TODO: Update blank fragment layout -->
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:background="#5EBF19"
    android:text="Fragment2"
    android:textSize="50dp" />

```

```
</RelativeLayout>
```

Java code:

```

package com.example.pg19;

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();  
    FragmentTransaction fragmentTransaction = fragmentManager.beginTransaction();  
    fragmentTransaction.replace(R.id.frameLayout, fragment);  
    fragmentTransaction.commit();  
}  
}
```

Fragment1.java

```
package com.example.pg19;  
  
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.activity_fragment1, container, false);

}
}

```

Fragment2.java

```

package com.example.pg19;

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) {

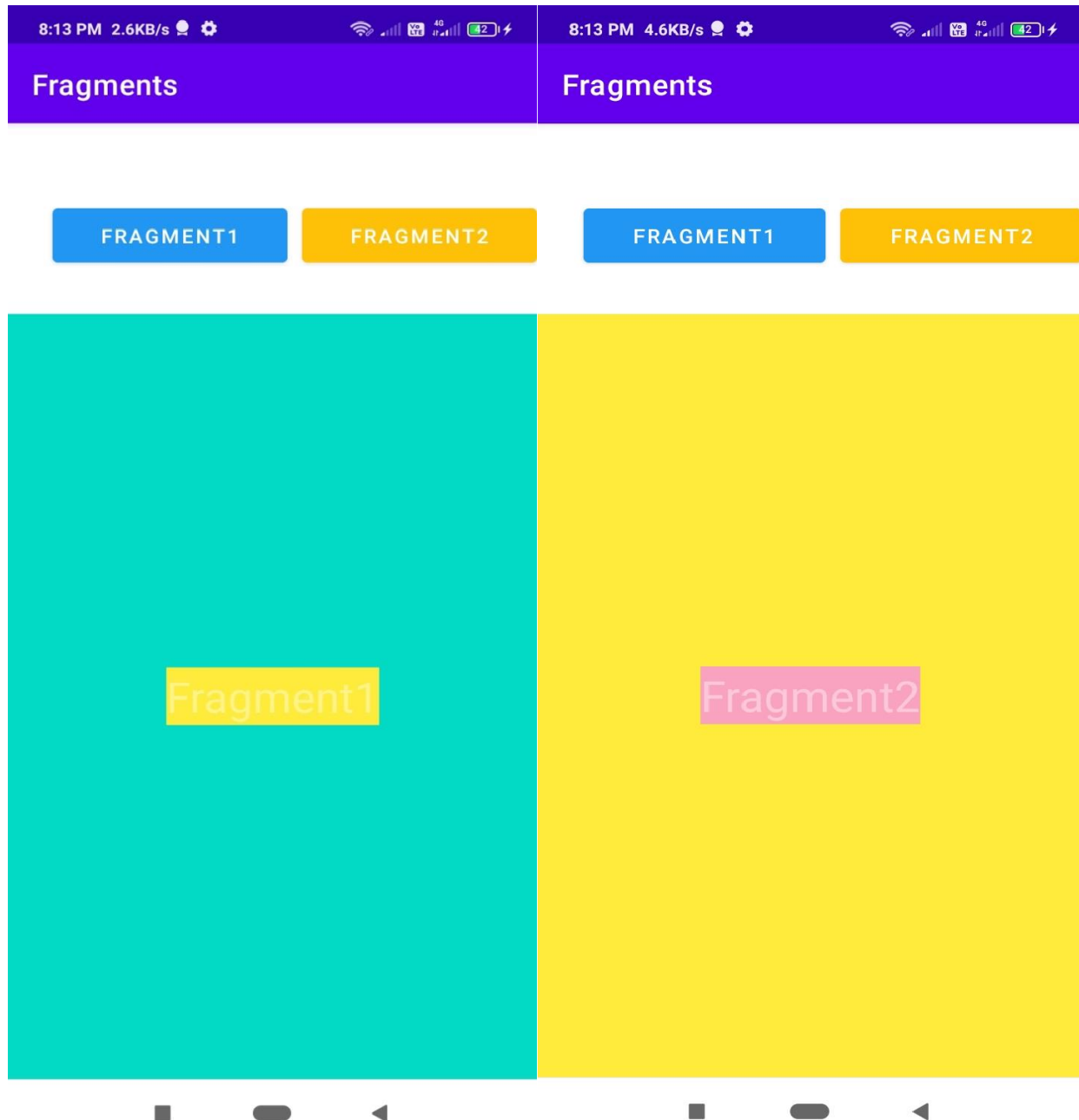
        // Inflate the layout for this fragment

        return inflater.inflate(R.layout.activity_fragment2, container, false);
    }
}

```

```
}  
}
```

Output



Program no: 19**Aim:** 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:id="@+id/drawer"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:background="#6A6363"

    tools:context=".MainActivity">

    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="match_parent">

        <TextView

            android:layout_width="match_parent"

            android:layout_height="match_parent"

            android:text="Navigation bar"

            android:textColor="@color/white"

            android:textSize="30dp"></TextView>

        </LinearLayout>

```

```

<com.google.android.material.navigation.NavigationView
    android:id="@+id/navigation_view"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="start"
    app:menu="@menu/menu"></com.google.android.material.navigation.NavigationView>
</androidx.drawerlayout.widget.DrawerLayout>

```

menu.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/account"
        android:title="User Page"/>
    <item
        android:id="@+id/profile"
        android:title="Cart"/>
    <item
        android:id="@+id/logout"
        android:title="log out"/>
</menu>

```

Java Code:

```
package com.example.program20;
```

```

import androidx.annotation.NonNull;

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 MainActivity extends AppCompatActivity implements

    NavigationView.OnNavigationItemSelectedListener {

    public DrawerLayout drawerLayout;

    public ActionBarDrawerToggle actionBarDrawerToggle;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        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);

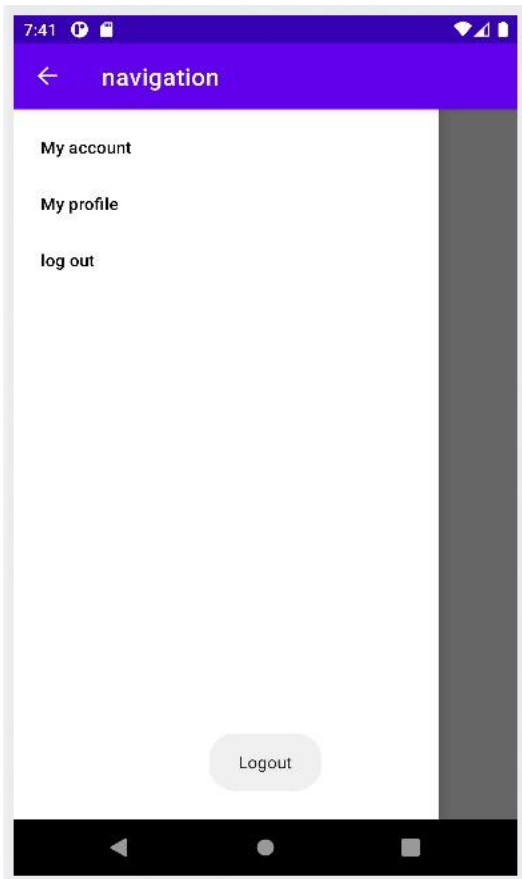
        NavigationView navigationView = findViewById(R.id.navigation_view);

        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, "User", Toast.LENGTH_SHORT).show();  
    }  
    if(id == R.id.profile){  
        Toast.makeText(this, "Cart",  
            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:

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="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:

MainActivity.Java:

```
package com.example.lifecycle;
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.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","onPause");
}
```

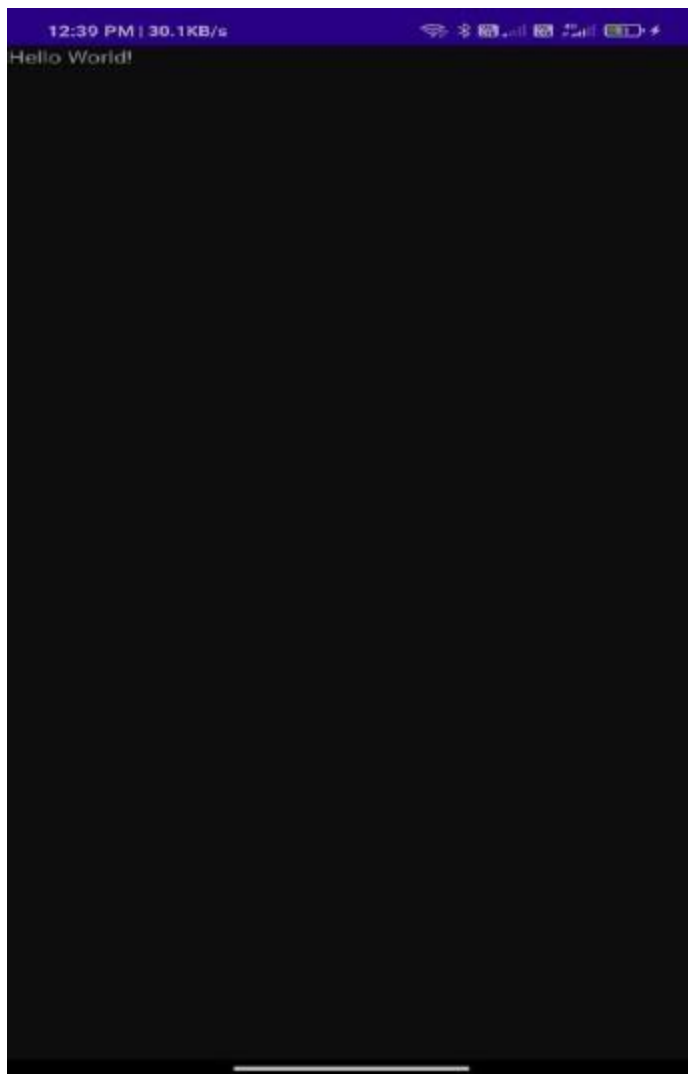
```
@Override
protected void onRestart() {
    super.onRestart();
    Log.i("State","onRestart");
}
```

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

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

Output:

```
2022-02-26 12:38:19.502 13856-13856/com.example.lifecycle D/lifecycle: onRestart invoked
2022-02-26 12:38:19.504 13856-13856/com.example.lifecycle D/lifecycle: onStart invoked
2022-02-26 12:38:19.507 13856-13856/com.example.lifecycle D/lifecycle: onResume invoked
2022-02-26 12:38:22.426 13856-13856/com.example.lifecycle W/ActivityThread: SCHED: com.example.
2022-02-26 12:38:22.426 13856-13856/com.example.lifecycle D/lifecycle: onPause invoked
2022-02-26 12:38:22.467 13856-13856/com.example.lifecycle D/lifecycle: onStop invoked
2022-02-26 12:38:22.946 13856-13856/com.example.lifecycle D/lifecycle: onDestroy invoked
```



Program no: 21

Aim: Program to Perform INSERT UPDATE,DELETE and VIEW 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="#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="SQLite"
                android:textColor="#3F51B5"
                android:textSize="40dp"
                android:textStyle="bold" />
```

```
<EditText
    android:id="@+id/uid"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:hint="id" />
```

```
<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:hint="name"/>
```

```
<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:hint="email"/>
```

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

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

```
<Button
    android:id="@+id/delete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
```



```

        android:text="delete" />
    <Button
        android:id="@+id/view"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="view" />

```

```
</LinearLayout>
```

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

```
</LinearLayout>
```

Java code:

```

package com.example.adaptor;

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 Happened",
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, "Data deleted",
Toast.LENGTH_LONG).show();

}

else {

    Toast.makeText(MainActivity.this, "Nothing Happened",
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 Exist",
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:

```

package com.example.adaptor;

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: