20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

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Reg. No.: AJC20MCA-2078

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

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CERTIFICATE

This is to certify that the lab report, "**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB"** is the bonafide work of **TANIA MARGRET SEBASTIAN(Reg.No:AJC20MCA-2078)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

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Program 1

Aim: Program to design a Login Form with username and password using LinearLayout and toast valid credentials.

XML Code:

```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"
    xmlns:card_view="http://schemas.android.com/apk/res-auto"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:background="#000">

    <androidx.cardview.widget.CardView
        android:layout_margin="64dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        card_view:cardCornerRadius="8dp"
        card_view:cardElevation="8dp"
        android:background="#fff">


        <LinearLayout android:layout_width="match_parent"


            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:padding="24dp">


            <TextView android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="Login" android:textSize="36sp"
                android:textAlignment="center"
                android:layout_gravity="center_horizontal" />


            <TextView android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:textSize="22sp" android:text="username"
                android:textColor="@color/black"/>


            <EditText android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:inputType="text"
                android:id="@+id/activity_main_usernameEditText" />
```

```xml
        <TextView android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="22sp" android:text="password"
            android:textColor="@color/black"/>

        <EditText android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:inputType="textPassword"
            android:id="@+id/activity_main_passwordEditText" />

        <Button

            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:id="@+id/activity_main_loginButton"
            android:text="login" android:textSize="22sp"/>
    </LinearLayout>

  </androidx.cardview.widget.CardView>

 </LinearLayout>
```

Java Code:

```java
package com.example.myapplication;

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 {private

    EditText usernameEditText;

    private EditText passwordEditText;

    private Button loginButton;
```

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


        usernameEditText = findViewById(R.id.activity_main_usernameEditText);
        passwordEditText = findViewById(R.id.activity_main_passwordEditText);
        loginButton = findViewById(R.id.activity_main_loginButton);


        loginButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (usernameEditText.getText().length() > 0 &&
passwordEditText.getText().length() > 0) {
                    String toastMessage = "Username: " +
usernameEditText.getText().toString() + ", Password: " +
passwordEditText.getText().toString();
                    Toast.makeText(getApplicationContext(), toastMessage,
Toast.LENGTH_SHORT).show();
                } else {
                    String toastMessage = "Username or Password are not populated";
                    Toast.makeText(getApplicationContext(), toastMessage,
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```
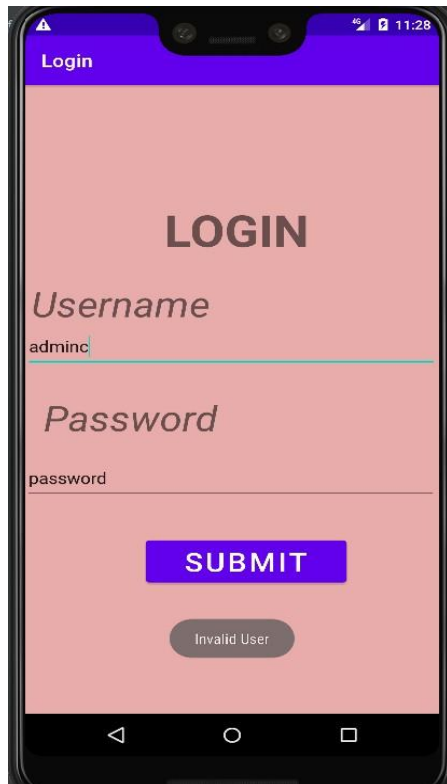
Output:

Program: 2

Aim : Write a program that demonstrates Activity Lifecycle.

XML File

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

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

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

Java File

```java
package com.example.activitylifecycle;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("Lifecycle", "onCreate invoked");
    }
    @Override
    protected void onStart() {
        super.onStart();
```

```java
    Log.d("Lifecycle", "onStart Invoked");
  }
  @Override
  protected void onResume() {
    super.onResume();
    Log.d("Lifecycle", "onStart Invoked");
  }
  @Override
  protected void onPause() {
    super.onPause();
    Log.d("Lifecycle", "onPause Invoked");
  }
  @Override
  protected void onStop() {
    super.onStop();
    Log.d("Lifecycle", "onStop Invoked");
  }
  @Override
  protected void onRestart() {
    super.onRestart();
    Log.d("Lifecycle", "onRestart Invoked");
  }
  @Override
  protected void onDestroy() {
    super.onDestroy();
    Log.d("Lifecycle", "onDestroy Invoked");
  }
}
```

Program no: 3

Aim: Implementing basic arithmetic operations of a simple calculator

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent" android:layout_height="match_parent"
tools:context=".MainActivity"
android:padding="20dp"
android:orientation="vertical"
android:background="@color/pastel">

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

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

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

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

</LinearLayout>

<LinearLayout
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:orientation="horizontal"
android:layout_marginBottom="20dp">

<TextView
android:textSize="35sp"
android:id="@+id/answer"
android:layout_width="102dp"
android:layout_height="59dp"
android:layout_marginHorizontal="50dp"
android:hint="ans" />

</LinearLayout>

<LinearLayout
android:orientation="vertical"
android:layout_marginLeft="250dp"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="30dp">

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

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

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

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

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

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

</LinearLayout>
```

Java Code:

```java
package com.example.calculator;
```

```java
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 MainActivity 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_main);
        // 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);
```

```java
// 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
```

```java
            = 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;

        }

    }

});
            else

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

        }

    }

});

equal.setOnClickListener(new View.OnClickListener() {

    @Override
```

```java
public void onClick(View v) { String ans1

    = String.valueOf(ans);

    answer.setText(ans1);

    ans= 0;

    }

});

}

}

    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();

            }
        }

    });
```
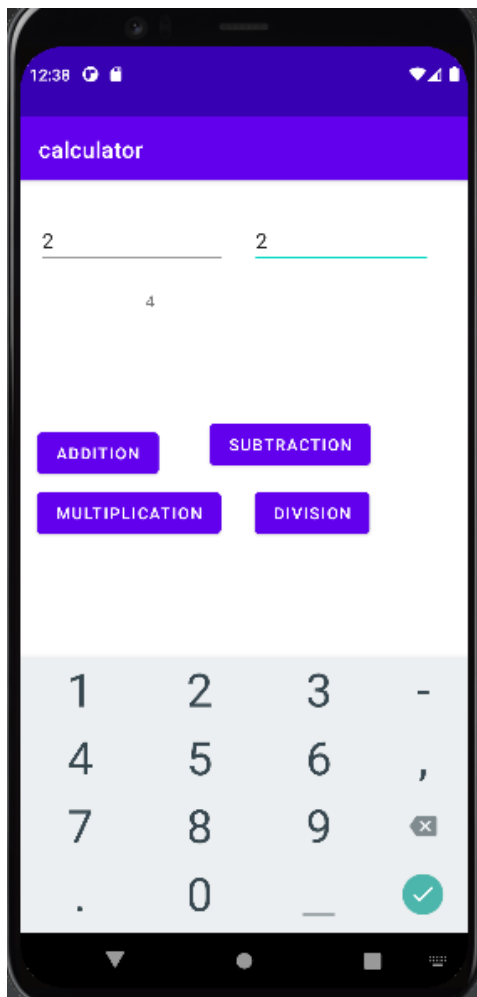
```java
equal.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) { String ans1

        = String.valueOf(ans);

        answer.setText(ans1);

        ans= 0;

    }

});
}
```

Output:

Program no: 4

Aim Implement validations on various UI controls

XML Code:
```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"
    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.validation;
 import androidx.appcompat.app.AppCompatActivity;import

 android.content.Intent;

 import android.os.Bundle; import

 android.view.View; import

 android.widget.Button; import

 android.widget.EditText;


 public class MainActivity extends AppCompatActivity {


    // two buttons
    Button bCancel, bProceed;
    // four text fields


    EditText etFirstName, etLastName, etEmail, etPassword;
```

```java
// one boolean variable to check whether all the text fields
// are filled by the user, properly or not.

boolean isAllFieldsChecked = false;

@Override
protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);


    // register buttons with their proper IDs. bProceed =

    findViewById(R.id.proceedButton);bCancel =

    findViewById(R.id.cancelButton);


    // register all the EditText fields with their IDs.

    etFirstName = findViewById(R.id.firstName);

    etLastName = findViewById(R.id.lastName); etEmail

    = findViewById(R.id.email); etPassword =

    findViewById(R.id.password);

    // handle the PROCEED button bProceed.setOnClickListener(new

    View.OnClickListener() {

        @Override

        public void onClick(View v) {

            // store the returned value of the dedicated function which checks
            // whether the entered data is valid or if any fields are left blank.

            isAllFieldsChecked = CheckAllFields();


            // the boolean variable turns to be true then
            // only the user must be proceed to the activity2if

            (isAllFieldsChecked) {

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

                startActivity(i);
```

```
                }
            }
        });

        // if user presses the cancel button then close the
        // application or the particular activity. bCancel.setOnClickListener(new

        View.OnClickListener() {

            @Override
            public void onClick(View v) {

                MainActivity.this.finish();

                System.exit(0);

            }
        });
    }
    // function which checks all the text fields
    // are filled or not by the user.
    // when user clicks on the PROCEED button
    // this function is triggered.
    private boolean CheckAllFields() {if

        (etFirstName.length() == 0) {

            etFirstName.setError("This field is required");return

            false;

        }

        if (etLastName.length() == 0) {

            etLastName.setError("This field is required");return

            false;

        }

        if (etEmail.length() == 0) {

            etEmail.setError("Email is required");return

            false;

        }

        if (etPassword.length() == 0) {

            etPassword.setError("Password is required");
```

```
        return false;
    } else if (etPassword.length() < 8) { etPassword.setError("Password must be

        minimum 8 characters");return false;

    }

    // after all validation return true.

    return true;

    }
}
```

Output:

Program 5

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

Activity_Main.xml

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

    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Please enter your name"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.283"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.321" />

    <EditText
        android:id="@+id/et1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.393" />

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

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.559" />


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

Acivity_Main2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/tv2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        android:textSize="40dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.122" />

    <TextView
        android:id="@+id/tv"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        android:textSize="40dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Data using Shared Preference"
    android:textSize="25dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.351"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.089" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Data using Intents"
    android:textSize="25dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.351"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.449" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.share;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {

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

```java
    EditText et1 = findViewById(R.id.et1);
    TextView tv1 = findViewById(R.id.tv1);
    Button b = findViewById(R.id.b1);
    SharedPreferences session=getSharedPreferences("start",MODE_PRIVATE);
    b.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        String val=et1.getText().toString();
        session.edit().putString("star",val).commit();
        Intent it=new Intent(MainActivity.this, MainActivity2.class);
        it.putExtra("name", val);
        startActivity(it);
      }
    });
  }
}
```

MainActivity2.xml

```java
package com.example.intends;

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 {
  TextView tv2,tv;

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


    tv=findViewById(R.id.tv);
    tv2=findViewById(R.id.tv2);
    SharedPreferences session=getSharedPreferences("start",MODE_PRIVATE);

    tv2.setText(session.getString("star","no data found"));

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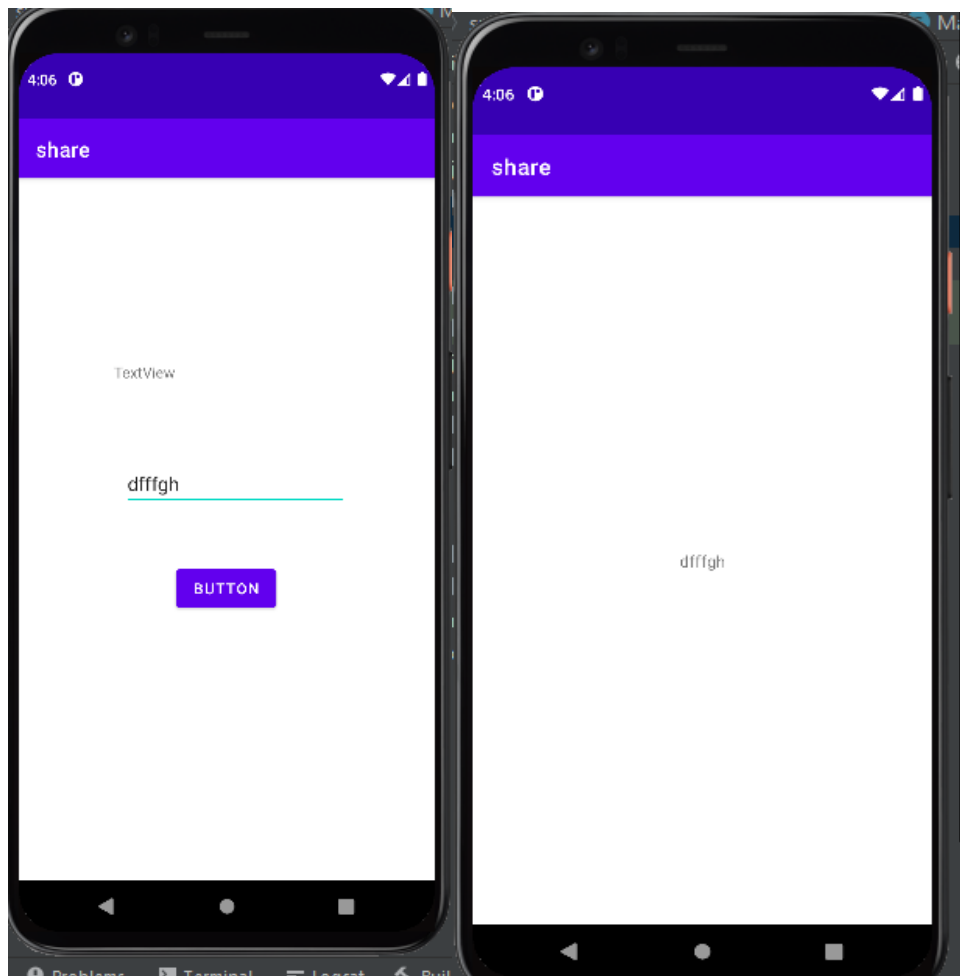
```
    String val=j.getStringExtra("name");
    tv.setText("Welcome : "+val);



   }
}
```

Output

Program no: 6

Aim: Design a simple Calculator using GridLayout and Cascaded LinearLayout

XML Code:

```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="#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>
```

```xml
<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" />
```

```xml
<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" />
```

```xml
<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:

```java
package com.example.myapplication;

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); }                }
```

bg_button.xml:

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

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

    <corners android:radius="100dp"/>

</shape>
```

Output

Program no: 7

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

Activity_main.xml

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

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

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

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

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

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

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="105dp"
        android:layout_marginTop="430dp"
        android:text="Don't have an account? Sign Up."
        android:textAlignment="center"/>
    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="150dp"
        android:layout_marginTop="408dp"
        android:text="Forgot password"
        android:textAlignment="center"/>


</RelativeLayout>
```

MainActivity.java

```java
package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
```

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


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

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


        });

    }
}
```

Activity_main2.xml

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

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

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

MainActivity2.java

```
package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

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

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

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

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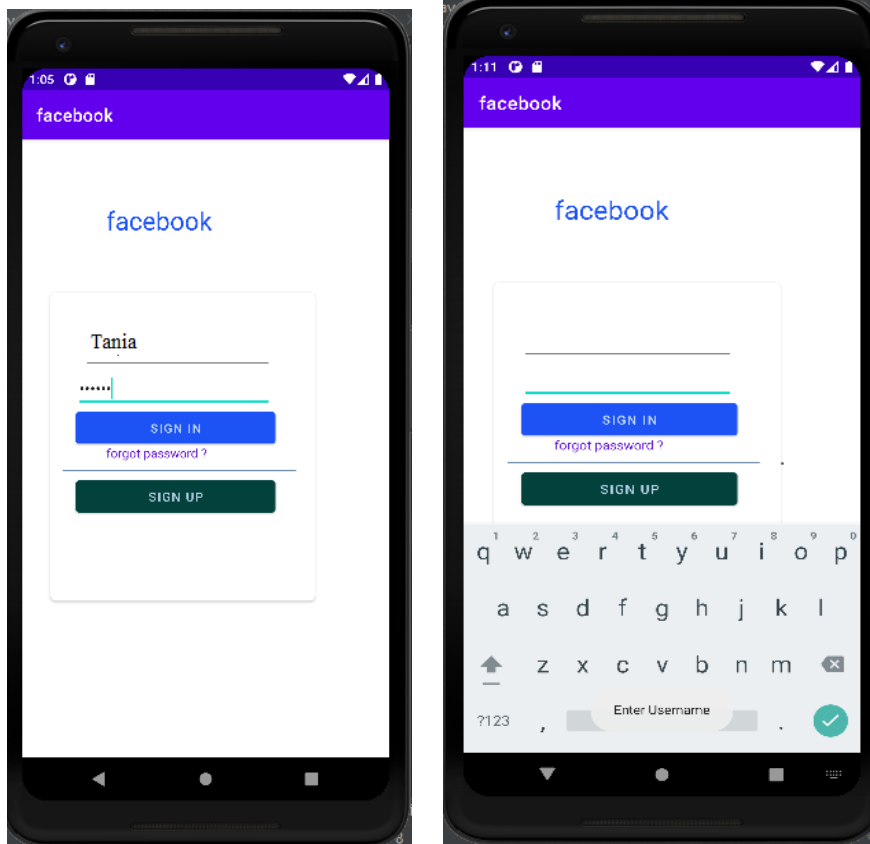
Output

Program no: 8

Aim: Develop an application that toggles image using FrameLayout

Activity_main.xml

```xml
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <ImageView
        android:id="@+id/iv1"
        android:src = "@drawable/img_1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />
    <ImageView
        android:id="@+id/iv2"
        android:src = "@drawable/img"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />

</FrameLayout>
```

MainActivity.java

```java
package com.example.toggle1;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ImageView iv1=findViewById(R.id.iv1);
        ImageView iv2=findViewById(R.id.iv2);

        iv1.setOnClickListener(new View.OnClickListener() {
```
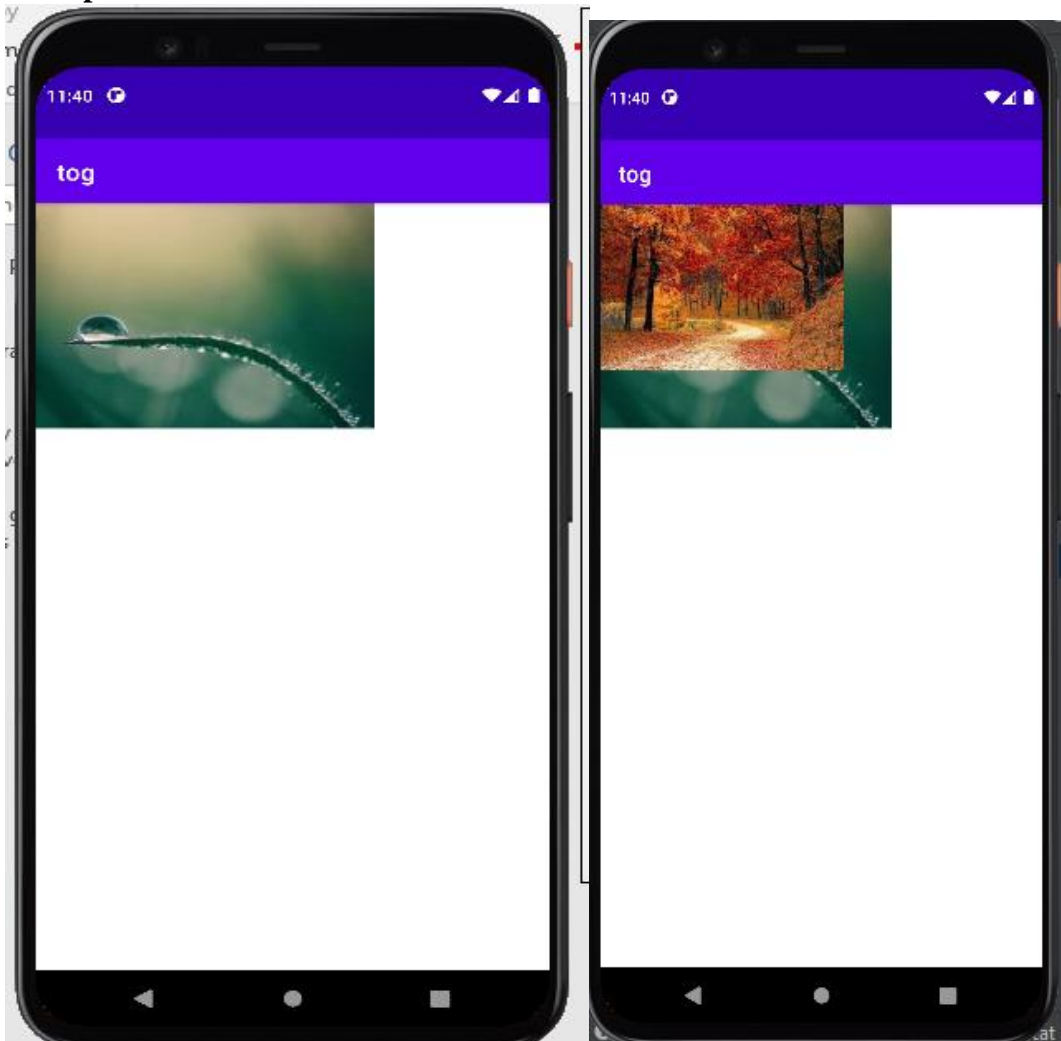
```
            @Override
            public void onClick(View v) {
                iv2.bringToFront();
            }
        });
        iv2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                iv1.bringToFront();
            }
        });
    }
}
```

Output

Program 9

Aim : Implement Adapters and perform exception handling

Activity_Main.xml

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

    <ListView
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        tools:ignore="MissingConstraints" />

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

MainActivity.java

```java
package com.example.exception;

import androidx.appcompat.app.AppCompatActivity;

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

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

public class MainActivity extends AppCompatActivity {
    List<String> list=new ArrayList<>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        list.add("A");
        list.add("B");
```
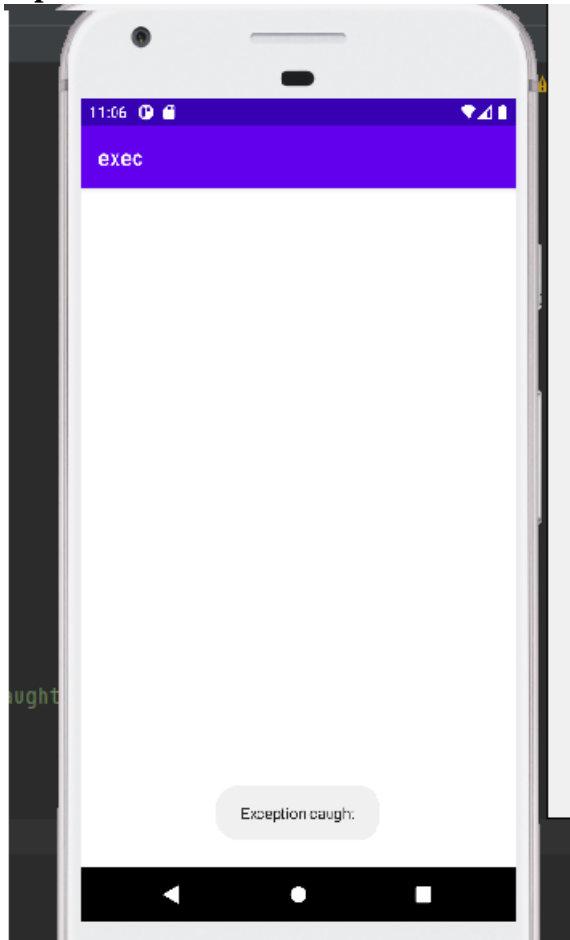
```
    list.add("C");
    list.add("D");

    for(int i=0;i<5;i++){
      try{
        list.get(i);
      }
      catch (Exception e){
        Toast.makeText(this, "Exception Caught", Toast.LENGTH_LONG).show();
      }
    }

  }
}
```

Output

Program no: 10

Aim: Implement Intent to navigate between multiple activities

XML Code:

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

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

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


    <Button

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

Java Code:

```java
package com.example.myapplication; import

androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;import

android.content.Intent;

import android.net.Uri;

import android.net.UrlQuerySanitizer;

import android.os.Bundle;

import android.view.View; import

android.widget.Button;
```

```java
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main); ActionBar
        b=getSupportActionBar(); b.setTitle("Go To Browser");
        Button click=findViewById(R.id.cm); click.setOnClickListener(new
        View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent j=new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com/"));

                startActivity(j);
            }
        });
    }
}
```
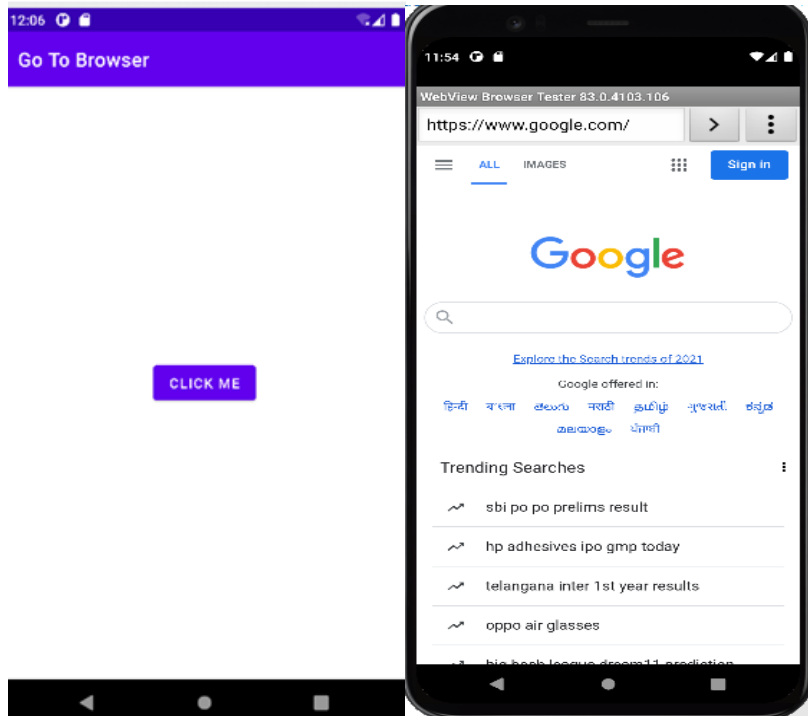
Output

Program no: 11

Aim: Develop application that works with explicit intents

Activity_main.xml

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

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

    <EditText
        android:id="@+id/et1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.042" />

    <EditText
        android:id="@+id/et2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="email"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.141" />

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

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

MainActivity.java

```java
package com.example.a1512_2;

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

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

import java.util.jar.Attributes;

public class MainActivity extends AppCompatActivity {
    Button b1;
    EditText et1,et2,et3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        ActionBar ab = getSupportActionBar();
        ab.setTitle("Page One");

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

```
et1 = findViewById(R.id.et1);
et2 = findViewById(R.id.et2);
et3 = findViewById(R.id.et3);

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent intent = new Intent(MainActivity.this,MainActivity2.class);

        String val1 = et1.getText().toString();
        String val2 = et2.getText().toString();
        String val3 = et3.getText().toString();
        intent.putExtra("Username", val1);
        intent.putExtra("email", val2);
        intent.putExtra("phonenumber", val3);

        startActivity(intent);
    }
});
    }
}
```

Activity_main2.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/tv4"
        android:layout_width="359dp"
        android:layout_height="223dp"
        android:text=" "
        android:textSize="15sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.124" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity2.java

```java
package com.example.a1512_2;

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

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

public class MainActivity2 extends AppCompatActivity {
    TextView tv4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        tv4 = findViewById(R.id.tv4);
        ActionBar ab = getSupportActionBar();
        ab.setTitle("Page Two");

        Intent intent = getIntent();
        String s1 = intent.getStringExtra("Username");
        String s2 = intent.getStringExtra("email");
        String s3 = intent.getStringExtra("phonenumber");
        tv4.setText("Username :"+s1+"\nEmail :"+s2+"\nPhone Number :"+s3);
    }
```

Output
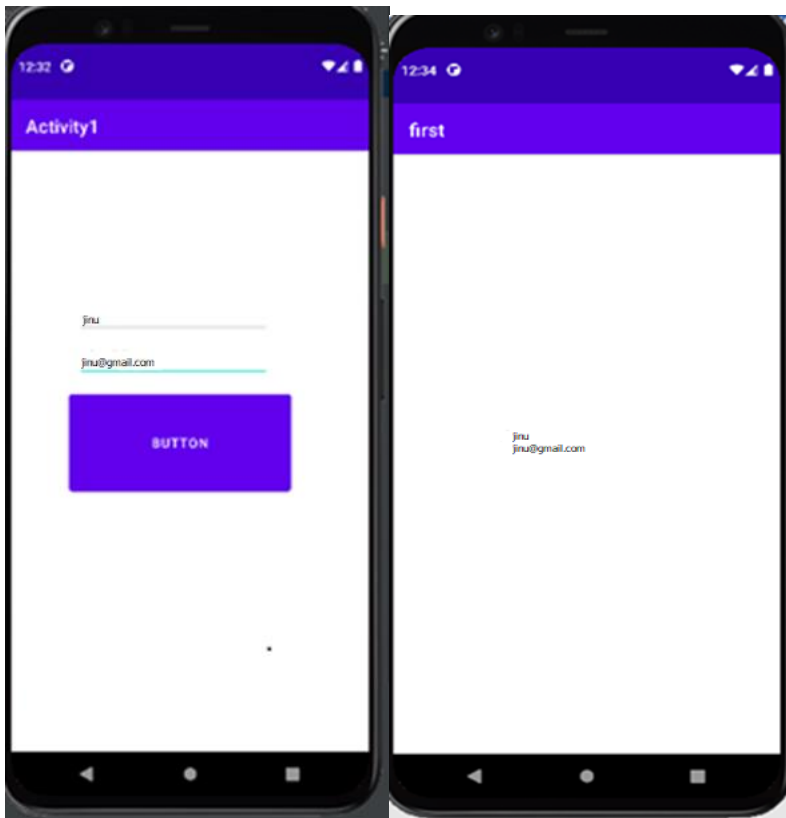
Program no: 12

Aim: Implement Options Menu to navigate to activities

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/item1" android:title="about"
android:icon="@drawable/download"/>
    <item android:id="@+id/item2" android:title="help"/>
</menu>
```

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

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

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


    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        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:

```java
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;import

android.annotation.SuppressLint;

import android.os.Bundle; import
```

```
android.view.Menu; import

android.view.MenuItem;import

android.widget.Toast;

public class MainActivity extends

AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }

    @Override

    public boolean onCreateOptionsMenu(Menu menu) {

        getMenuInflater().inflate(R.menu.menuu, menu); return

        true;

    }

    @Override

    public boolean onOptionsItemSelected(MenuItem item){switch

        (item.getItemId()){

            case R.id.item1:

                Toast.makeText(getApplicationContext(), "about",
Toast.LENGTH_SHORT).show();

                return true; case

            R.id.item2:

                Toast.makeText(getApplicationContext(), "help",
Toast.LENGTH_SHORT).show();

                return true;

            default:
```

```
        return super.onOptionsItemSelected(item);

}}
```

Output
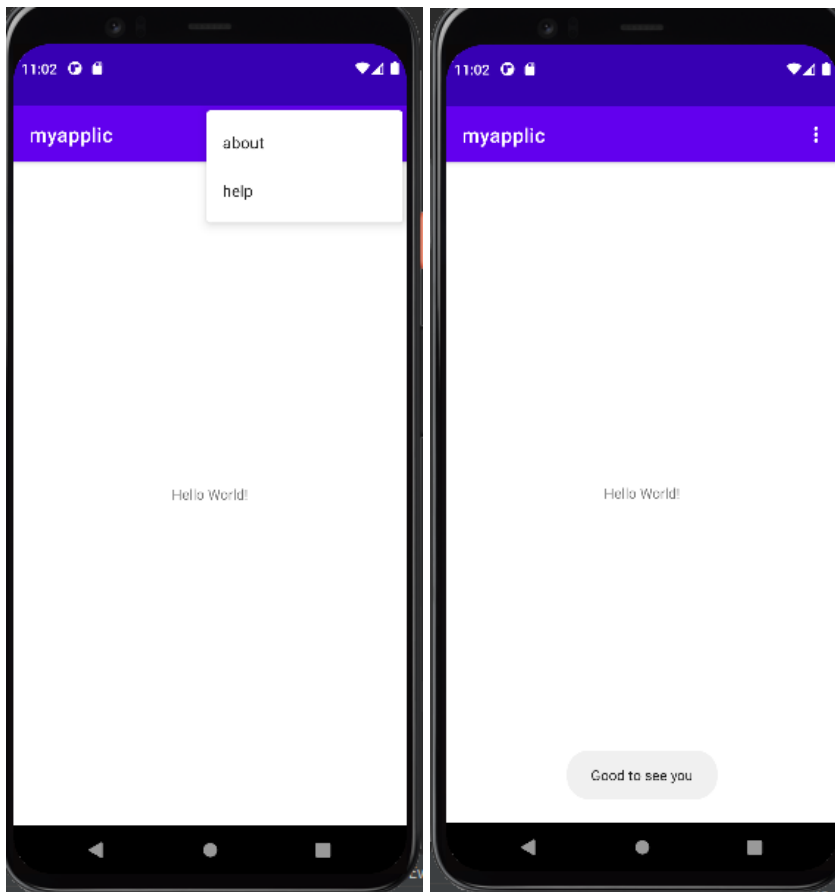
Program no: 13

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

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

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


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

    </ListView>


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

Java Code:

```java
package com.example.adapter;

import androidx.appcompat.app.AppCompatActivity;import

android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;import

android.widget.ArrayAdapter;import

android.widget.ListView; import

android.widget.TextView; import

android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
```

```java
AdapterView.OnItemClickListener {

ListView l;

String[] flowers={"rose","jasmin","sunflower"};

    @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,R.layout.support_simple_spinner_dropdown_item,flower
s);

        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();

    }

}
```
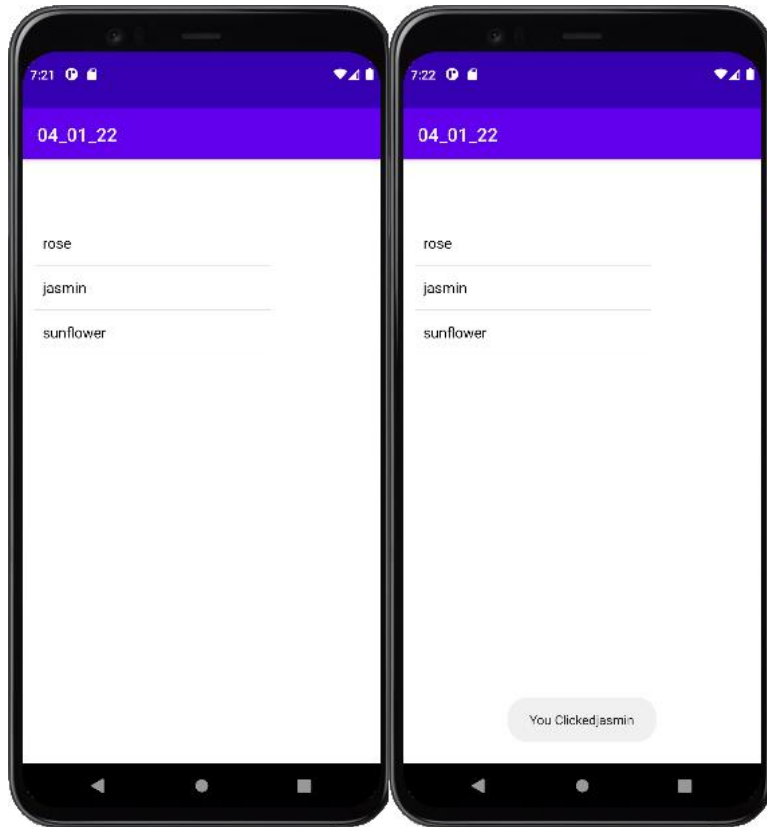
Output

Program no: 14

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

XML CODE

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

    <GridView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/gridview"
        android:numColumns="3">

    </GridView>

</LinearLayout>
```

Java Code

```java
package com.example.grid;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.GridView;

public class MainActivity extends AppCompatActivity {

    GridView g1;

    String arr[]={"a1","a2","a3","a4","a5","a6","a7","a8"};
    int
img[]={R.drawable.f1,R.drawable.f2,R.drawable.f3,R.drawable.f4,R.drawable.f5,R.drawable.f6,R.
drawable.f7,R.drawable.f8};
```

```
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     g1=findViewById(R.id.gridview);

     CustomAdapter customAdapter=new CustomAdapter(MainActivity.this,arr,img);
     g1.setAdapter(customAdapter);
  }
}
```

Customadapter.java

```
package com.example.grid;

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

public class CustomAdapter extends BaseAdapter {

  Context context;
  String str[];
  int im[];
  LayoutInflater layoutInflater;
  public CustomAdapter(MainActivity mainActivity, String[] arr, int[] img) {
     this.context=mainActivity;
     this.str=arr;
     this.im=img;
     layoutInflater=(layoutInflater.from(mainActivity));
  }

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

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

  @Override
```

```
public long getItemId(int i) {
   return 0;
}

@Override
public View getView(int i, View view, ViewGroup viewGroup) {
   view=layoutInflater.inflate(R.layout.gridview,null);

   TextView textview=(TextView)view.findViewById(R.id.t1);
   ImageView imageView=(ImageView)view.findViewById(R.id.img1);

   textview.setText(str[i]);
   imageView.setImageResource(im[i]);
   return view;
}
}
```

Gridview.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.appcompat.widget.LinearLayoutCompat
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical">

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

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/t1"
      android:textSize="25sp">

   </TextView>

</androidx.appcompat.widget.LinearLayoutCompat>
```
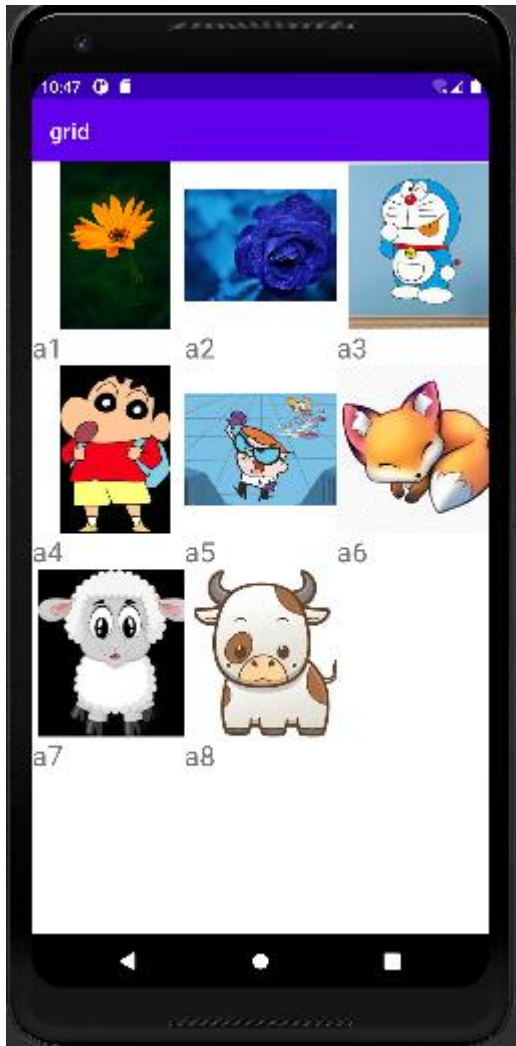
Output:

Program no: 15

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

Activity_Main.xml

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

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:spinnerMode="dropdown"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:ignore="MissingConstraints"></Spinner>

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

Java Code

```java
package com.example.spinner1;

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 {
    Spinner spinner;
    String[] courses={"MCA", "MTech", "BTech"};
```

```java
    @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     spinner=findViewById(R.id.spinner);


     ArrayAdapter a=new
ArrayAdapter(this,R.layout.support_simple_spinner_dropdown_item,courses);
     spinner.setAdapter(a);

     spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
        @Override
        public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {
           Toast.makeText(getApplicationContext(), "You Have Clicked"+courses[position],
Toast.LENGTH_LONG).show();
        }

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

        }
     });



  }

}
```

Output
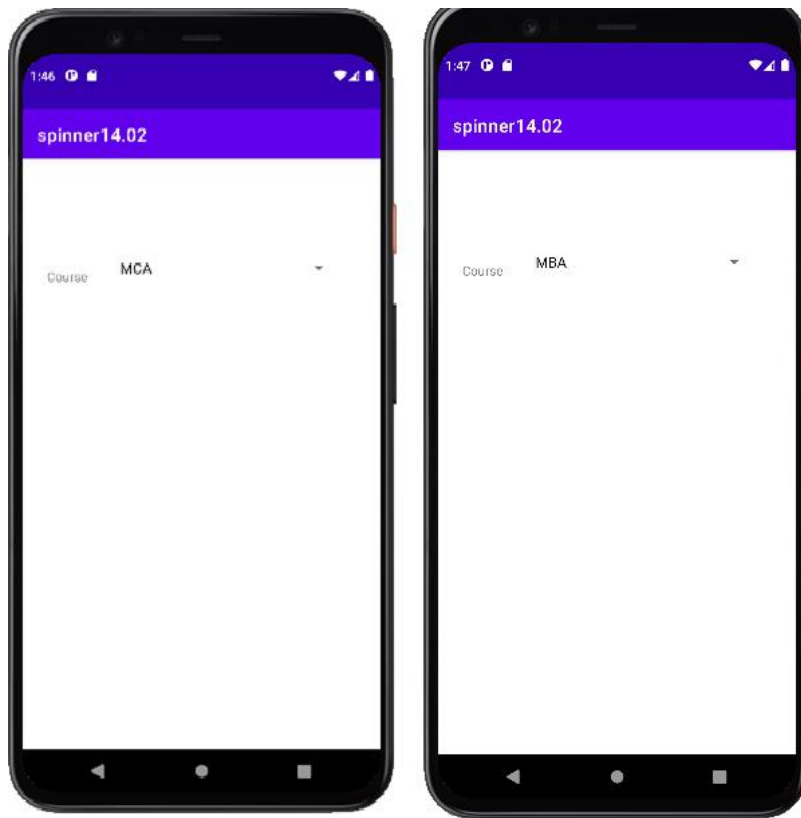
Program no: 16

Aim: Apply themes via code and manifest file

XML Code:

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

  <EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:layout_editor_absoluteX="100dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

AndroidManifest.xml

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

  <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.newstyle">
    <activity
```

```
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.newstyle"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <item name="colorPrimary">@color/black</item>
        <item name="colorPrimaryDark">@color/yellow</item>
        <item name="colorAccent">@color/teal</item>
        <item name="android:textColorPrimary">@color/red</item>
    </style>
</resources>
```

colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#B30707</color>
    <color name="white">#FFFFFFFF</color>
    <color name="teal">#FF018786</color>

    <color name="yellow">#6377E4</color>
    <color name="red">#F80F0F</color>

</resources>
```

Java Code:

```
package com.example.myappp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

Output

Program no: 17

Aim: Develop application using Fragments

Activity_main.xml

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


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

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

        >

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

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

```
        android:layout_marginBottom="30dp"
        android:text="Fragment2" />
    </RelativeLayout>
</LinearLayout>
```

Fragment_1.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/white"
    tools:context=".fragment1">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment 1"
        android:layout_centerInParent="true"
        android:textSize="30dp"/>

</RelativeLayout>
```

Fragment_2.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/black"
    tools:context=".fragment2">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment 2"
        android:textColor="@color/white"
        android:layout_centerInParent="true"
        android:textSize="30dp"/>

</RelativeLayout>
```

MainActivity.java

```java
package com.example.fram;

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.text.style.TtsSpan;
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 b1=findViewById(R.id.b1);
        Button 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.fl,fragment);
        fragmentTransaction.commit();
    }
}
```

fragment1.java

```
package com.example.fram;

import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;


public class fragment1 extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                  Bundle savedInstanceState) {
      // Inflate the layout for this fragment
      return inflater.inflate(R.layout.fragment_1, container, false);
    }
}
```

fragment2.java

```
package com.example.fram;

import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;


public class fragment2 extends Fragment {

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                  Bundle savedInstanceState) {
      // Inflate the layout for this fragment
      return inflater.inflate(R.layout.fragment_2, container, false);
    }
}
```
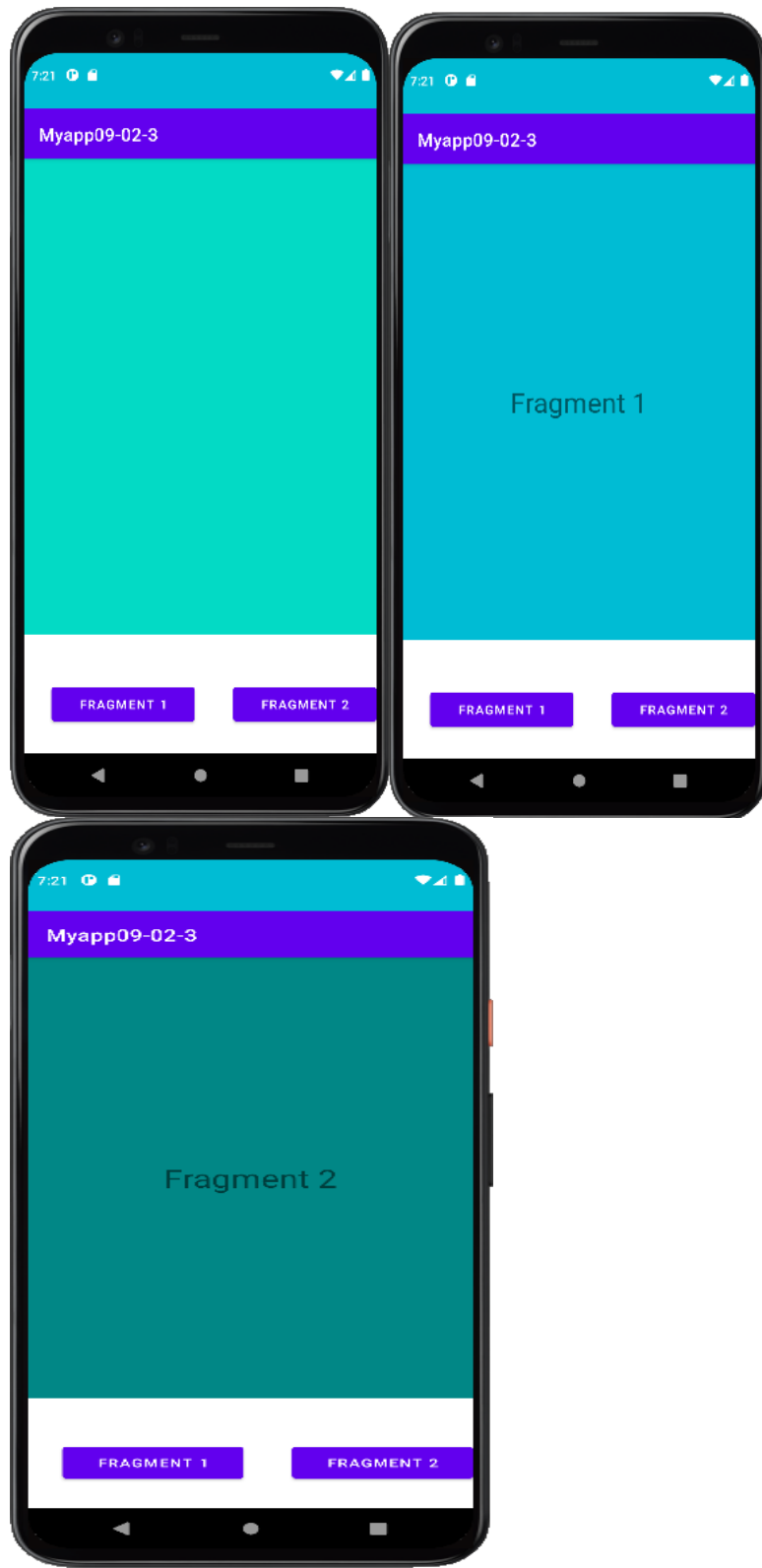
Output:

Program no: 18

Aim: Implement Navigation drawer

Activity_Main. xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.drawerlayout.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/nav_bar"
    tools:context=".MainActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <TextView
            android:layout_width="match_parent"
            android:layout_height="741dp"
            android:text="Navigation Bar"
            android:textAlignment="center"
            android:textColor="@color/black"
            android:textSize="30dp" />
    </LinearLayout>
    <com.google.android.material.navigation.NavigationView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="start"
        app:menu="@menu/menu"
        />
</androidx.drawerlayout.widget.DrawerLayout>
```

Java Code

```java
package com.example.navview;
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;

public class MainActivity extends AppCompatActivity {
    DrawerLayout drawerLayout;
```

```
ActionBarDrawerToggle actionBarDrawerToggle;

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

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

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

        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if(actionBarDrawerToggle.onOptionsItemSelected(item))
        {
            return true;
        }
        return super.onOptionsItemSelected(item);

    }

}
```

Strings.xml

```
<resources>
    <string name="app_name">navView</string>
    <string name="nav_open">open</string>
    <string name="nav_close">close</string>
</resources>
```

Menu.xml
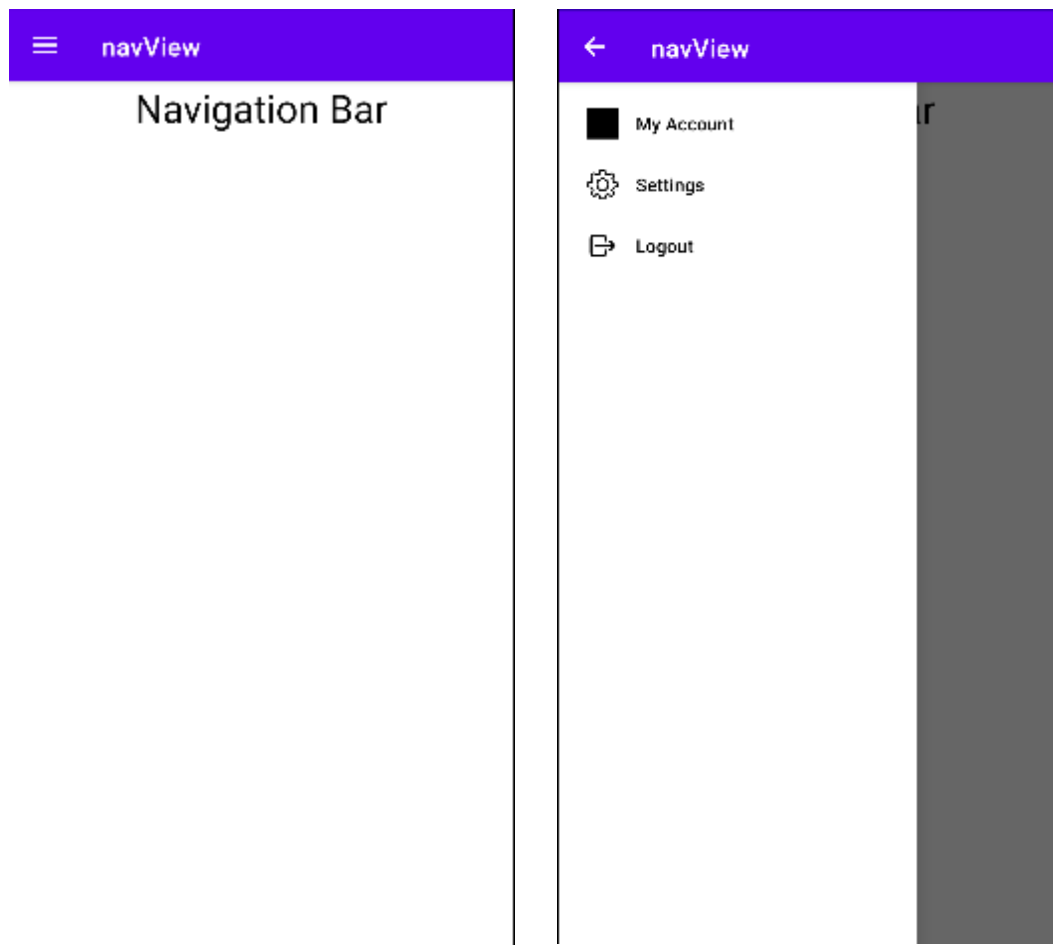
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">

    <item
        android:id="@+id/i1"
        android:title="My Account"
        android:icon="@drawable/img"
        />
    <item
```

```
      android:id="@+id/i2"
      android:title="Settings"
      android:icon="@drawable/img_1"
      />
   <item
      android:id="@+id/i3"
      android:title="Logout"
      android:icon="@drawable/img_2"
      />

</menu>
```

Output:

Program 19

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

Activity_main.xml

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

  <TextView
    android:id="@+id/t1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="First Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.16"
    tools:ignore="MissingConstraints" />

  <EditText
    android:id="@+id/e1"
    android:layout_width="411dp"
    android:layout_height="40dp"
    android:layout_weight="1"
    android:ems="10"
    android:inputType="textPersonName"

    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.193"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="0dp" />

  <TextView
    android:id="@+id/t2"
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="Last Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.265"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="0dp" />

<EditText
    android:id="@+id/e2"
    android:layout_width="407dp"
    android:layout_height="42dp"
    android:ems="10"
    android:inputType="textPersonName"

    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.301"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="2dp" />

<Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Insert"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.049"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.377" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="Helvetica "
    android:text="Enter your name."
    android:textColor="#3b5998"
    android:textSize="40dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.022" />

<Button
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="View"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.922"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.377" />

<TextView
    android:id="@+id/t3"
    android:layout_width="383dp"
    android:layout_height="329dp"
    android:text="DATA"
    android:textSize="12dp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.571"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.99" />

<Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Delete"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.925"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.471"
    tools:ignore="MissingConstraints" />

<Button
    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
      android:text="Update"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.377"
      tools:ignore="MissingConstraints" />

   <EditText
      android:id="@+id/e3"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:ems="10"
      android:inputType="textPersonName"
      android:hint="Enter sid"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.079"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.45" />

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

MainActivity.java

```java
package com.example.dbse;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    TextView t1,t2,t3;
    EditText e1,e2,e3;
    Button b1,b2,b3,b4;
    Dbse db1=new Dbse(this);
    StringBuffer sb=new StringBuffer();

    @Override
```

```java
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    t1=findViewById(R.id.t1);
    t2=findViewById(R.id.t2);
    t3=findViewById(R.id.t3);
    e1=findViewById(R.id.e1);
    e2=findViewById(R.id.e2);
    e3=findViewById(R.id.e3);
    b1=findViewById(R.id.b1);
    b2=findViewById(R.id.b2);
    b3=findViewById(R.id.b3);
    b4=findViewById(R.id.b4);


    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String fn=e1.getText().toString();
            String ln=e2.getText().toString();
            db1.insert(fn, ln);

            Toast.makeText(getApplicationContext(), "Data Entered Successfully",
Toast.LENGTH_LONG).show();
        }
    });
    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor cu=db1.view();
            while(cu.moveToNext()){
                sb.append("Id :"+cu.getString(0)+"\n");
                sb.append("First Name : "+cu.getString(1)+"\n");
                sb.append("Last Name : "+cu.getString(2)+"\n");
            }
            // Toast.makeText(getApplicationContext(),sb.toString(),
Toast.LENGTH_LONG).show();
            t3.setText(sb.toString());


        }
    });
    b3.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String val=e3.getText().toString();
            db1.delete(val);
```

```
        }
    });

    b4.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            String fn=e1.getText().toString();
            String ln=e2.getText().toString();

            String val=e3.getText().toString();
            db1.update(fn, ln,val);
        }
}
```

Dbse.java

```java
package com.example.dbse;

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

import androidx.annotation.Nullable;

public class Dbse extends SQLiteOpenHelper {

    SQLiteDatabase db;
    private static String dataBaseName="Name";
    private static int dbVersion=1;
    public Dbse(Context context) {
        super(context, dataBaseName,null, dbVersion);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("Create table name_tbl(sid integer Primary key autoincrement , fn varchar(20),
ln varchar(20))");

    }

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

    }
    public void insert(String name, String name1){
```

```
        db=getWritableDatabase();
        ContentValues cv=new ContentValues();
        cv.put("fn", name);
        cv.put("ln", name1);
        db.insert("name_tbl",null,cv);

    }
    public Cursor view(){
        db=getReadableDatabase();
        Cursor cu=db.rawQuery("Select * from name_tbl",null);
        return cu;
    }
    public void delete(String val){
        db=getWritableDatabase();
        db.delete("name_tbl","sid=?",new String[]{val});
    }}
```

Output

Insert   **View**

Delete   **Update**