20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

FREDDY JENSON

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

AMAL JYOTHI COLLEGE OF ENGINEERING

KANJIRAPPALLY

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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 **FREDDY JENSON (Reg.No:AJC20MCA-2038)** 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. Nimmy Francis
Staff In-Charge

CONTENT

Program no: 01

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

GUI components for Login Page creation.

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"
 tools:context=".MainActivity"
 android:orientation="vertical">
<TextView
 android:id="@+id/l"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:ems="10"
 android:gravity="center"
 android:text="Login"
 android:textColor="#630DFB"
 android:textSize="50dp"
tools:layout_editor_absoluteX="31dp"
 tools:layout_editor_absoluteY="39dp" />
<EditText
 android:id="@+id/e1"
 android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

android:minHeight="48dp"

android:text="User Name" />

<EditText

android:id="@+id/e2"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPassword"

android:minHeight="48dp"

android:text="Password" />

<Button

android:id="@+id/b1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="right"

android:text="Login" />

</LinearLayout>
```

Java Code:

```
package com.example.login;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.Button;

import android.widget.EditText;
```

```java
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

 private TextView l;

 private EditText e1;

 private EditText e2;

 private Button b1;

 @Override

 protected void onCreate(Bundle savedInstanceState) {

 super.onCreate(savedInstanceState);

 setContentView(R.layout.activity_main);

b1=findViewById(R.id.b1);

 e1=findViewById(R.id.e1);

 e2=findViewById(R.id.e2);

 }

}
```

Output:
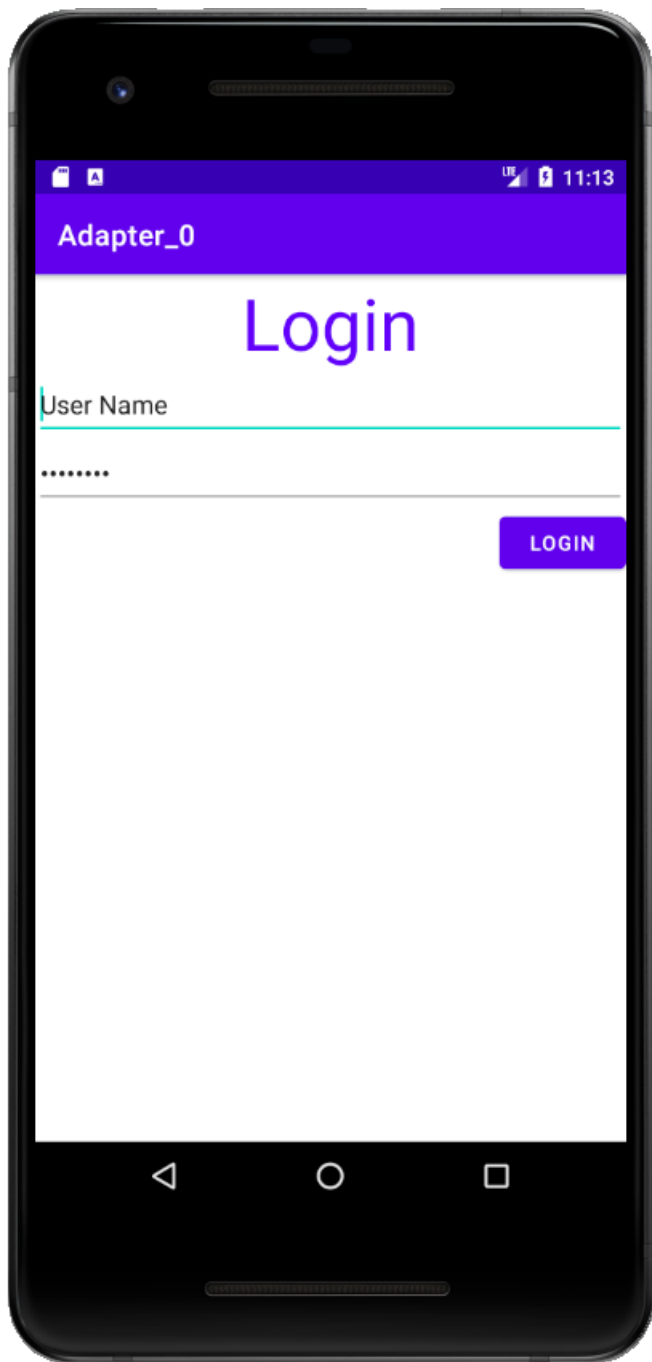
Program no: 02

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

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:orientation="vertical"
 android:background="#DFF6C4">
 <EditText
 android:id="@+id/text1"
 android:layout_width="261dp"
 android:layout_height="78dp"
 android:background="@color/teal_700"
 android:hint="Write here!"
 android:textSize="25dp"
app:layout_constraintBottom_toBottomOf="parent"
 app:layout_constraintLeft_toLeftOf="parent"
 app:layout_constraintRight_toRightOf="parent"
 app:layout_constraintTop_toTopOf="parent" />
 <Button
```

```xml
        android:id="@+id/button"

        android:layout_width="match_parent"

        android:layout_height="71dp"

        android:gravity="center"

        android:text="Print" />

    <TextView

        android:id="@+id/textView2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintLeft_toLeftOf="parent"

        app:layout_constraintRight_toRightOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

</LinearLayout>
```

Java Code:

```java
package com.example.textview;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private EditText t1;

    private TextView t2;

    private Button b1;
```

```
@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

t1=findViewById(R.id.text1);

t2=findViewById(R.id.textView2);

b1=findViewById(R.id.button);

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String value = t1.getText().toString();

t2.setText(String.valueOf(value));

 }

 });

 }

}
```

Output:
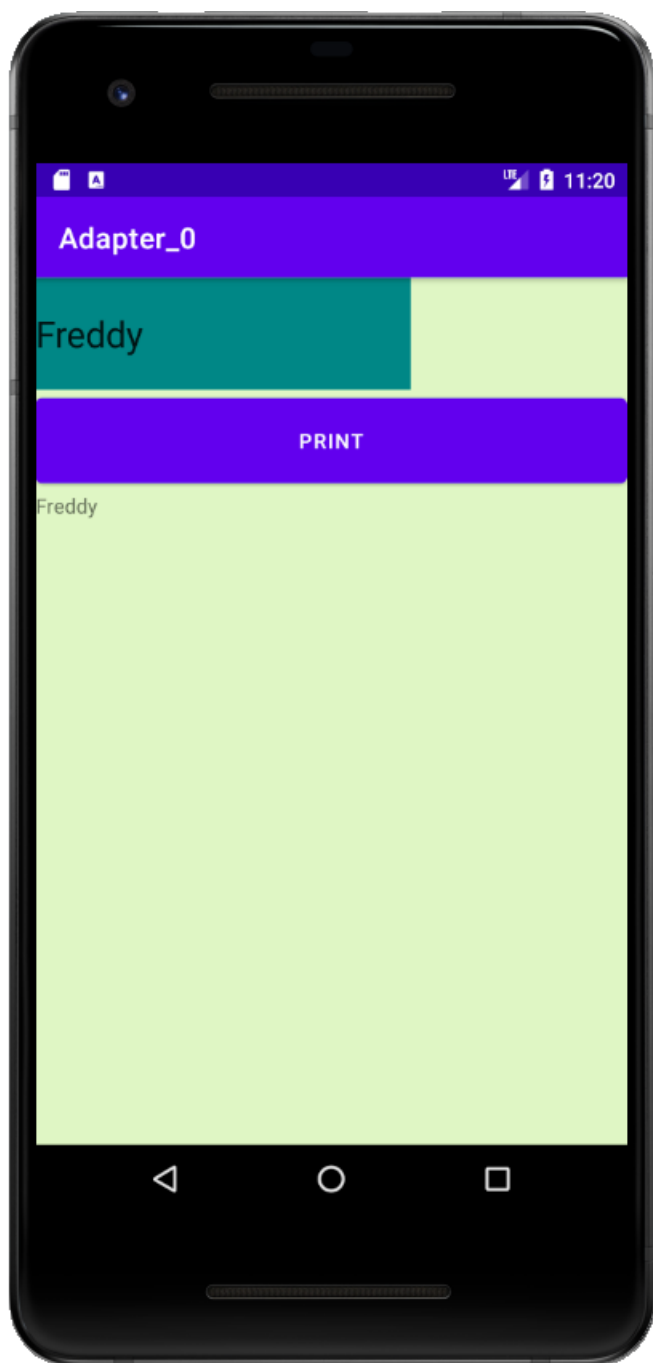
Program no: 03

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

XML Code:

```xml
<?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"
```

```xml
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" />


<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:

```
package com.example.androidloginform;

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;
```

```java
public class MainActivity extends AppCompatActivity {

    private EditText usernameEditText;

    private EditText passwordEditText;

    private Button loginButton;


    @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:
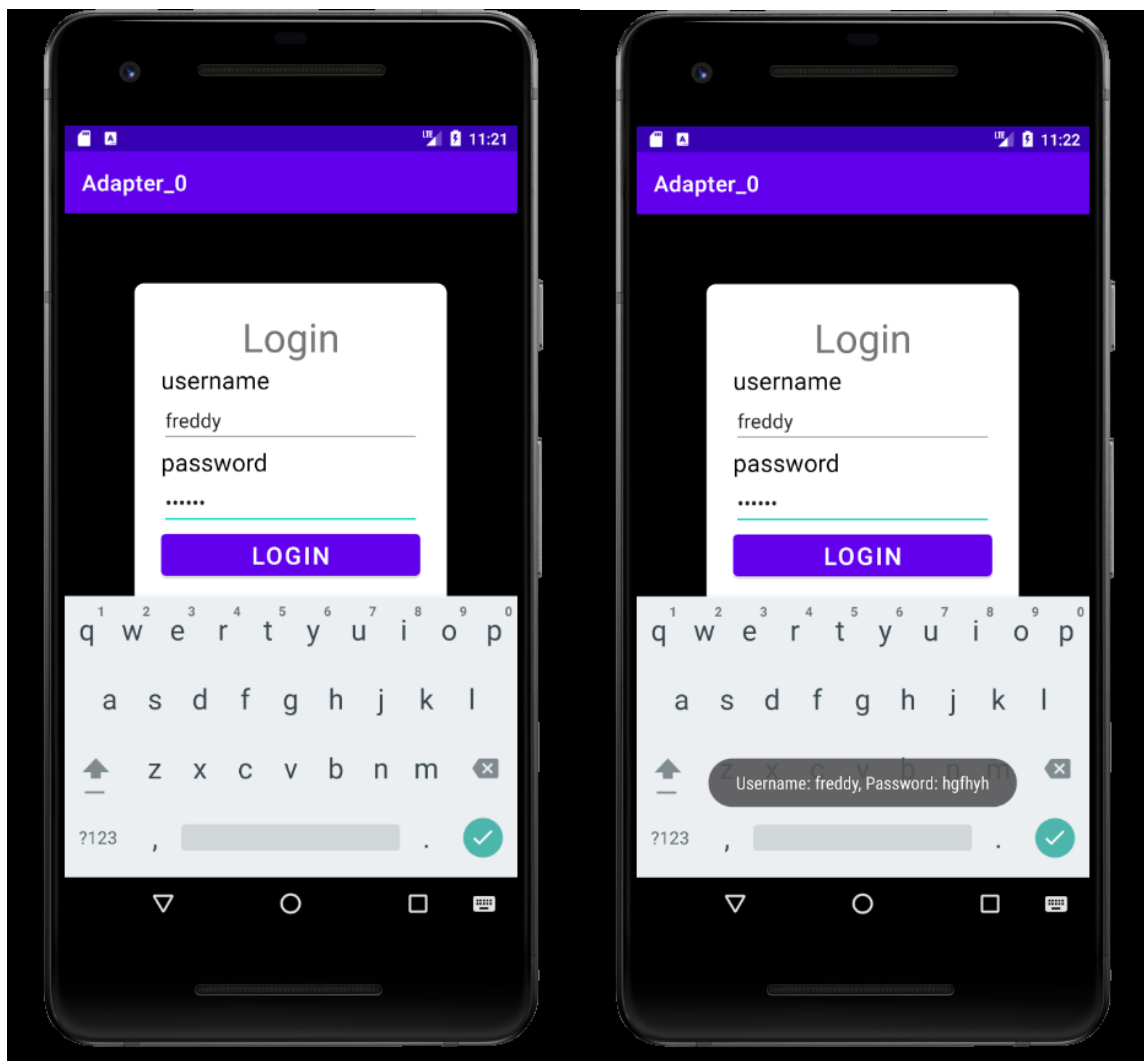
Program no: 04

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" />

<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"

android:text="-"

android:textSize="25sp"

android:layout_marginBottom="16dp" />

<Button

android:id="@+id/add"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

```xml
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;

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);

// 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();
```

```java
        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;

            }

        }
```

```java
        });

    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:
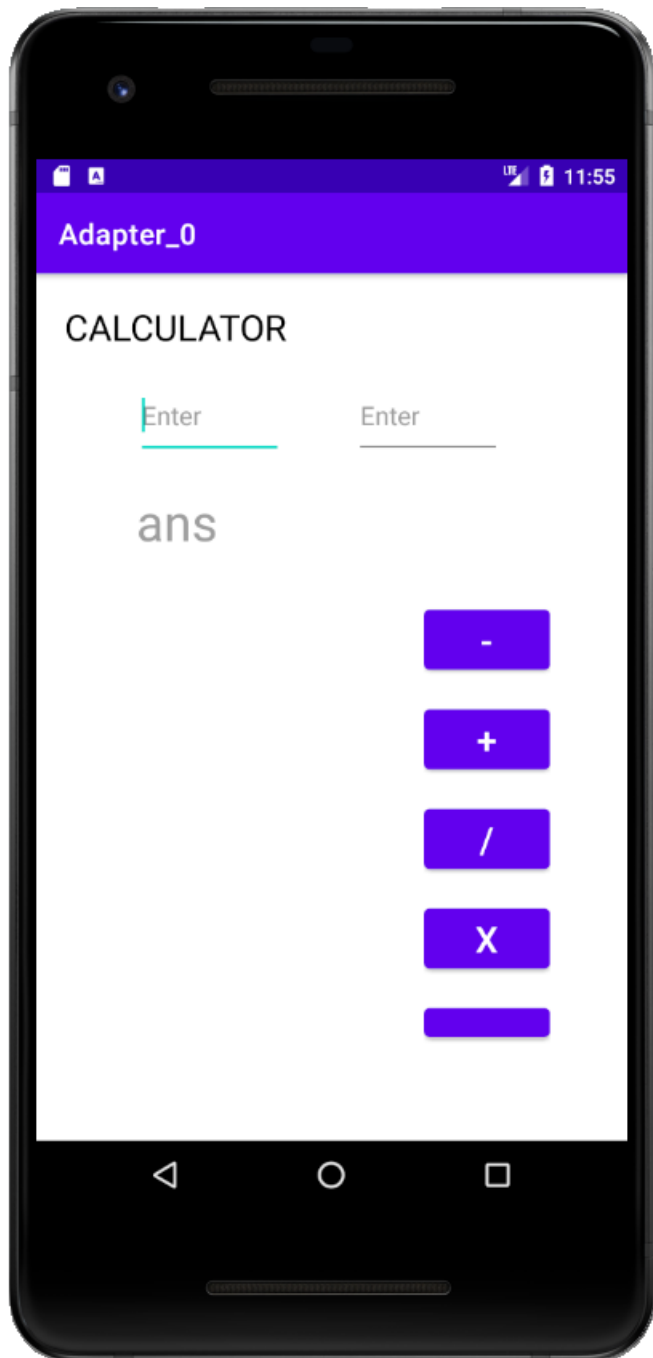
Program no: 05

Aim Implement validations on various UI controls

XML Code:

```xml
<?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"
```

```xml
    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" />
```

```xml
<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:

```java
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;


    // 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);
```

```java
// register buttons with their proper IDs.
bProceed = findViewById(R.id.proceedButton);

bCancel = findViewById(R.id.cancelButton);


// register all the EditText fields with their IDs.
etFirstName = findViewById(R.id.firstName);

etLastName = findViewById(R.id.lastName);

etEmail = findViewById(R.id.email);

etPassword = findViewById(R.id.password);


// handle the PROCEED button
bProceed.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {


        // store the returned value of the dedicated function which checks
        // whether the entered data is valid or if any fields are left blank.
        isAllFieldsChecked = CheckAllFields();


        // the boolean variable turns to be true then
        // only the user must be proceed to the activity2
        if (isAllFieldsChecked) {
            Intent i = new Intent(MainActivity.this, MainActivity2.class);
            startActivity(i);
        }
    }
});
```

```java
// 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 no: 06

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

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=".explicit_intent">


    <TextView

        android:id="@+id/textView3"

        android:layout_width="60dp"

        android:layout_height="17dp"

        android:text="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.091"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.222" />


    <EditText
```

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

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.756"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.215" />


<TextView

    android:id="@+id/textView4"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Email ID"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.096"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.325" />


<EditText

    android:id="@+id/em"

    android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.761"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.319" />


<TextView

    android:id="@+id/textView5"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Phone No."

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.09"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.435" />


<EditText

    android:id="@+id/ph"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:ems="10"
```

```
android:inputType="number"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.761"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.431" />


<Button

    android:id="@+id/sav"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="SAVE"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.413"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.562" />


<TextView

    android:id="@+id/textView6"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Enter Your Details"

    android:textSize="25sp"

    android:textStyle="bold"
```

```
        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.464"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.133" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

Display

```
<?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=".display">


    <TextView

        android:id="@+id/textView2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Your Details Using Intent"

        android:textStyle="bold"

        android:textSize="20sp"

        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="0.146" />


<TextView

    android:id="@+id/dis"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:textStyle="italic"

    android:textSize="15sp"

    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="0.233" />


<TextView

    android:id="@+id/textView3"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Your Details Using Shared Preference"

    android:textSize="20sp"

    android:textStyle="bold"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.771"
```

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.467" />

<TextView

android:id="@+id/dis1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:textSize="15sp"

android:textStyle="italic"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintHorizontal_bias="0.527"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.571" />

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code:

package com.example.sharedpreference;

import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

```
import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

  @Override

  protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    ActionBar a=getSupportActionBar();

    a.setTitle("Welcome");

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

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

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

    EditText phone=findViewById(R.id.ph);

    sub.setOnClickListener(new View.OnClickListener() {

      @Override

      public void onClick(View view) {

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

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

        i.putExtra("Name",user);

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

        i.putExtra("Email",E_mail);

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

        i.putExtra("Phone",Phones);

        startActivity(i);

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

        SharedPreferences.Editor myEdit = sharedPreferences.edit();
```

```
            myEdit.putString("name", nam.getText().toString());

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

            myEdit.putString("phone", phone.getText().toString());

            myEdit.apply();

        }

      });

   }

}
```

Display

```
package com.example.sharedpreference;


import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.widget.TextView;

public class display extends AppCompatActivity {

   @Override

   protected void onCreate(Bundle savedInstanceState) {

      super.onCreate(savedInstanceState);

      setContentView(R.layout.activity_display);

      ActionBar a=getSupportActionBar();

      a.setTitle("Display");

      TextView diss=findViewById(R.id.dis);

      TextView diss1=findViewById(R.id.dis1);

      Intent i=getIntent();
```

```
String name=i.getStringExtra("Name");

String email=i.getStringExtra("Email");

String phone=i.getStringExtra("Phone");

diss.setText("Name : "+name+"\nEmail : "+email+"\nPhone : "+phone);

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

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

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

String Phone=sharedPreferences.getString("phone","");

diss1.setText("Name : "+Name+"\nEmail : "+Email+"\nPhone : "+Phone);


    }

}
```
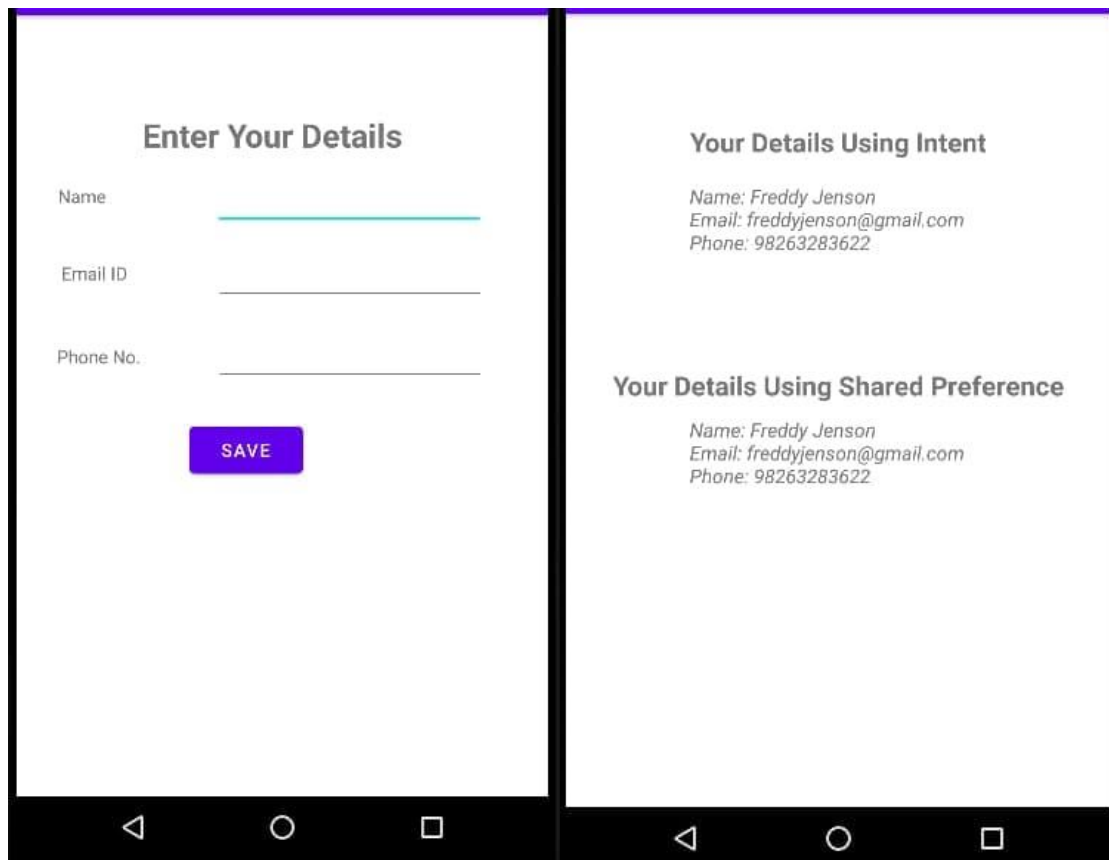
Output:

Program no: 07

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">
```

```xml
<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" />
```

```xml
<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" />
```

```xml
<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.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;


public class MainActivity extends AppCompatActivity {

    double input1 = 0, input2 = 0;

    TextView edt1;

    boolean Addition, Subtract, Multiplication, Division, mRemainder, decimal;

    Button button0, button1, button2, button3, button4, button5, button6, button7, button8,
button9, buttonAdd, buttonSub,

        buttonMul, buttonDivision, buttonEqual, buttonDel, buttonDot, Remainder;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        button0 = (Button) findViewById(R.id.button0);
```

```
button1 = (Button) findViewById(R.id.button1);

button2 = (Button) findViewById(R.id.button2);

button3 = (Button) findViewById(R.id.button3);

button4 = (Button) findViewById(R.id.button4);

button5 = (Button) findViewById(R.id.button5);

button6 = (Button) findViewById(R.id.button6);

button7 = (Button) findViewById(R.id.button7);

button8 = (Button) findViewById(R.id.button8);

button9 = (Button) findViewById(R.id.button9);

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

buttonAdd = (Button) findViewById(R.id.buttonadd);

buttonSub = (Button) findViewById(R.id.buttonsub);

buttonMul = (Button) findViewById(R.id.buttonmul);

buttonDivision = (Button) findViewById(R.id.buttondiv);

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

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

buttonEqual = (Button) findViewById(R.id.buttoneql);

edt1 = (TextView) findViewById(R.id.display);

button1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        edt1.setText(edt1.getText() + "1");

    }

});

button2.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {
```

```java
        edt1.setText(edt1.getText() + "2");
      }
    });
    button3.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        edt1.setText(edt1.getText() + "3");
      }
    });
    button4.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        edt1.setText(edt1.getText() + "4");
      }
    });
    button5.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        edt1.setText(edt1.getText() + "5");
      }
    });
    button6.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        edt1.setText(edt1.getText() + "6");
      }
    });
```

```java
button7.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        edt1.setText(edt1.getText() + "7");

    }

});

button8.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        edt1.setText(edt1.getText() + "8");

    }

});

button9.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        edt1.setText(edt1.getText() + "9");

    }

});

button0.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        edt1.setText(edt1.getText() + "0");

    }

});

buttonAdd.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {
```

```java
        if (edt1.getText().length() != 0) {

            input1 = Float.parseFloat(edt1.getText() + "");

            Addition = true;

            decimal = false;

            edt1.setText(null);

        }

    }

});

buttonSub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        if (edt1.getText().length() != 0) {

            input1 = Float.parseFloat(edt1.getText() + "");

            Subtract = true;

            decimal = false;

            edt1.setText(null);

        }

    }

});


buttonMul.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        if (edt1.getText().length() != 0) {

            input1 = Float.parseFloat(edt1.getText() + "");

            Multiplication = true;

            decimal = false;
```

```java
                edt1.setText(null);

            }

        }

    });

    buttonDivision.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            if (edt1.getText().length() != 0) {

                input1 = Float.parseFloat(edt1.getText() + "");

                Division = true;

                decimal = false;

                edt1.setText(null);

            }

        }

    });

    Remainder.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            if (edt1.getText().length() != 0) {

                input1 = Float.parseFloat(edt1.getText() + "");

                mRemainder = true;

                decimal = false;

                edt1.setText(null);

            }

        }

    });

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

```java
@Override
public void onClick(View v) {

    if (Addition  Subtract  Multiplication  Division  mRemainder) {

        input2 = Float.parseFloat(edt1.getText() + "");

    }
    if (Addition) {


        edt1.setText(input1 + input2 + "");

        Addition = false;

    }
    if (Subtract) {


        edt1.setText(input1 - input2 + "");

        Subtract = false;

    }
    if (Multiplication) {

        edt1.setText(input1 * input2 + "");

        Multiplication = false;

    }


    if (Division) {

        edt1.setText(input1 / input2 + "");

        Division = false;

    }
    if (mRemainder) {

        edt1.setText(input1 % input2 + "");

        mRemainder = false;
```

```java
                }

            }

        });

        buttonDel.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                edt1.setText("");

                input1 = 0.0;

                input2 = 0.0;

            }

        });

        buttonDot.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                if (decimal) {

                    //do nothing or you can show the error

                } else {

                    edt1.setText(edt1.getText() + ".");

                    decimal = true;

                }

            }

        });

    }

    public void onClick(View view) {

    }

}
```

Output:

Program no: 08

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

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="@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">
```

```xml
<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"
```

```xml
            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:
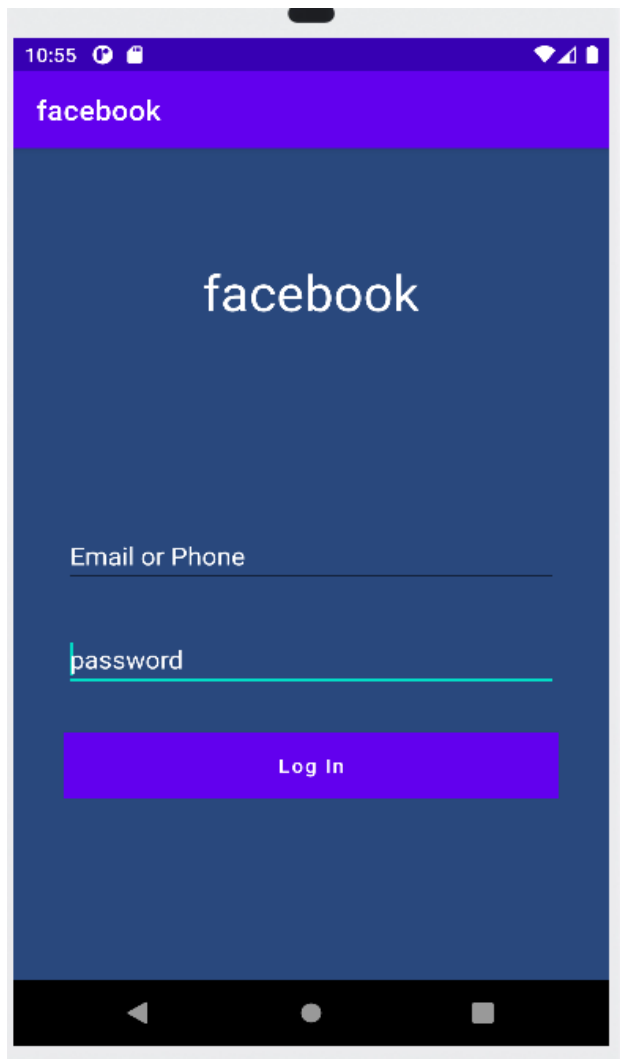
Program no: 09

Aim: Develop an application that toggles image using FrameLayout

XML Code:

```xml
<?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:

```java
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:
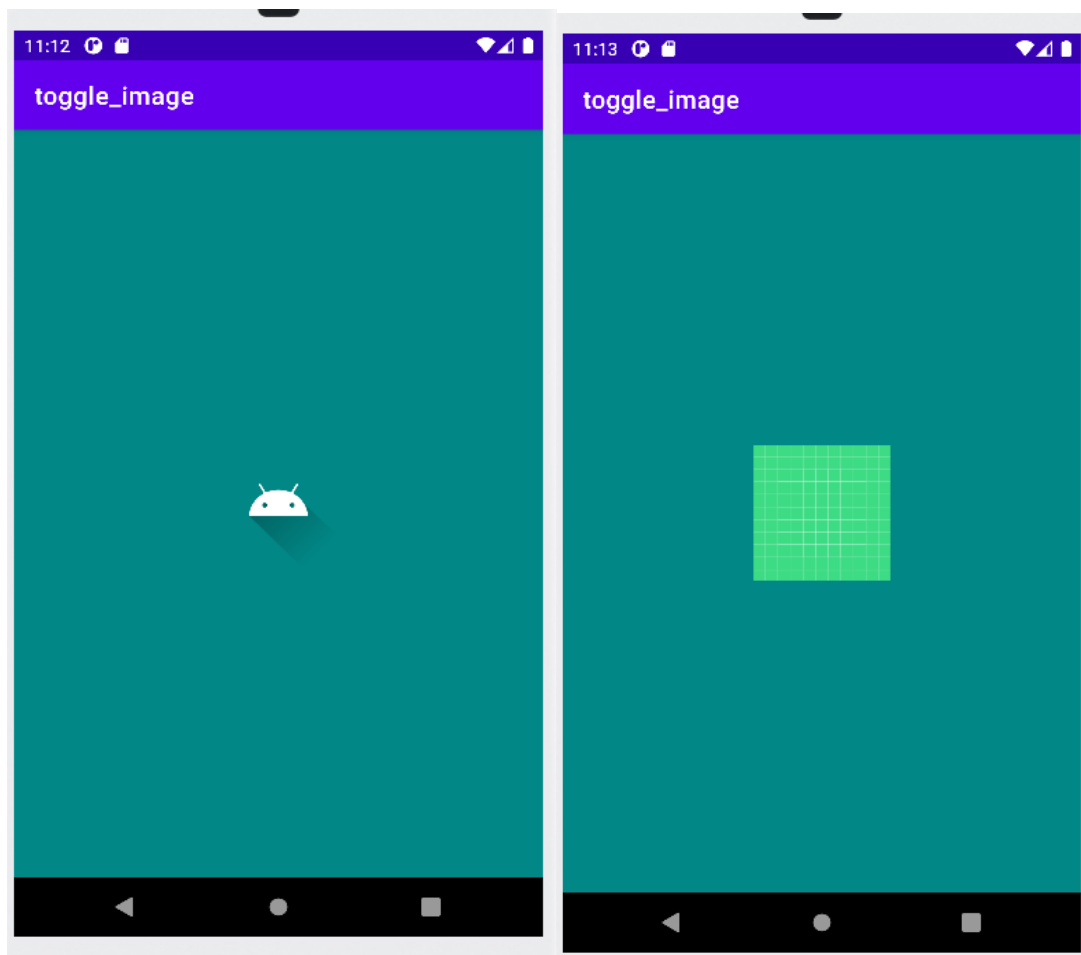
Program no: 10

Aim: Implement Adapters and perform exception handling

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout

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

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

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">

    <ListView

        android:layout_width="409dp"

        android:layout_height="354dp"

        tools:layout_editor_absoluteX="1dp"

        tools:layout_editor_absoluteY="1dp"

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

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

Java Code:

```java
package com.example.adapter_fj;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```java
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
AdapterView.OnItemClickListener {

    ListView l1;


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

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

        try {

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

            l1.setAdapter(adapter);

            l1.setOnItemClickListener(this);

        } catch (Exception e) {


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

        }

    }
```

```
    @Override

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

        TextView tem = (TextView) view;

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

    }

}
```

Output:

Program no: 11

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

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"
android:onClick="callActivity"
tools:context=".intent_activity">

<EditText android:id="@+id/name"

android:layout_width="wrap_content" android:layout_height="wrap_content"
android:ems="10"  android:hint="Name" android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"

 app:layout_constraintVertical_bias="0.148" />

<EditText android:id="@+id/address"

android:layout_width="wrap_content" android:layout_height="wrap_content"
android:ems="10"  android:hint="Address" android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.313" />

<EditText android:id="@+id/email"

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

android:ems="10" android:hint="Email" android:inputType="textPersonName"

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"

 app:layout_constraintTop_toTopOf="parent" app:layout_constraintVertical_bias="0.475"

/> <Button

android:id="@+id/button" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:text="Submit" android:onClick="callActivity"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.454"
app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.609" />

</androidx.constraintlayout.widget.ConstraintLayout>

Display.xml

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

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

xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent"
android:layout_height="match_parent" tools:context=".intent_act2">

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

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.398" />

<TextView android:id="@+id/view1" android:layout_width="189dp"
android:layout_height="36dp" android:textAlignment="center"

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.22" />

<TextView android:id="@+id/view2" android:layout_width="189dp"

 android:layout_height="36dp" android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.306" />

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code:

```java
package com.example.vaidyakare;

import androidx.appcompat.app.AppCompatActivity;

 import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button; import  android.widget.EditText;

public class intent_activity extends AppCompatActivity { Button b1;

 @Override

protected void onCreate(Bundle savedInstanceState) {

 super.onCreate(savedInstanceState); setContentView(R.layout.activity_intent);

 }

public void callActivity(View view) {

Intent i = new Intent(intent_activity.this, intent_act2.class); final EditText
editText1 =  (EditText)findViewById(R.id.name);

String msg = editText1.getText().toString();

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

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

i.putExtra("Value1", msg); i.putExtra("Value2", add); i.putExtra("Value3", em);

 startActivity(i); }

Display.java

package com.example.vaidyakare;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.TextView;

 public class intent_act2 extends AppCompatActivity { TextView

view1; TextView view2; TextView view3;

 @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
setContentView(R.layout.activity_intent_act2);

view1 = (TextView) findViewById(R.id.view1); view2 = (TextView)
findViewById(R.id.view2); view3 = (TextView)

findViewById(R.id.view3); Bundle extras = getIntent().getExtras();

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

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

 }

 }

Output:
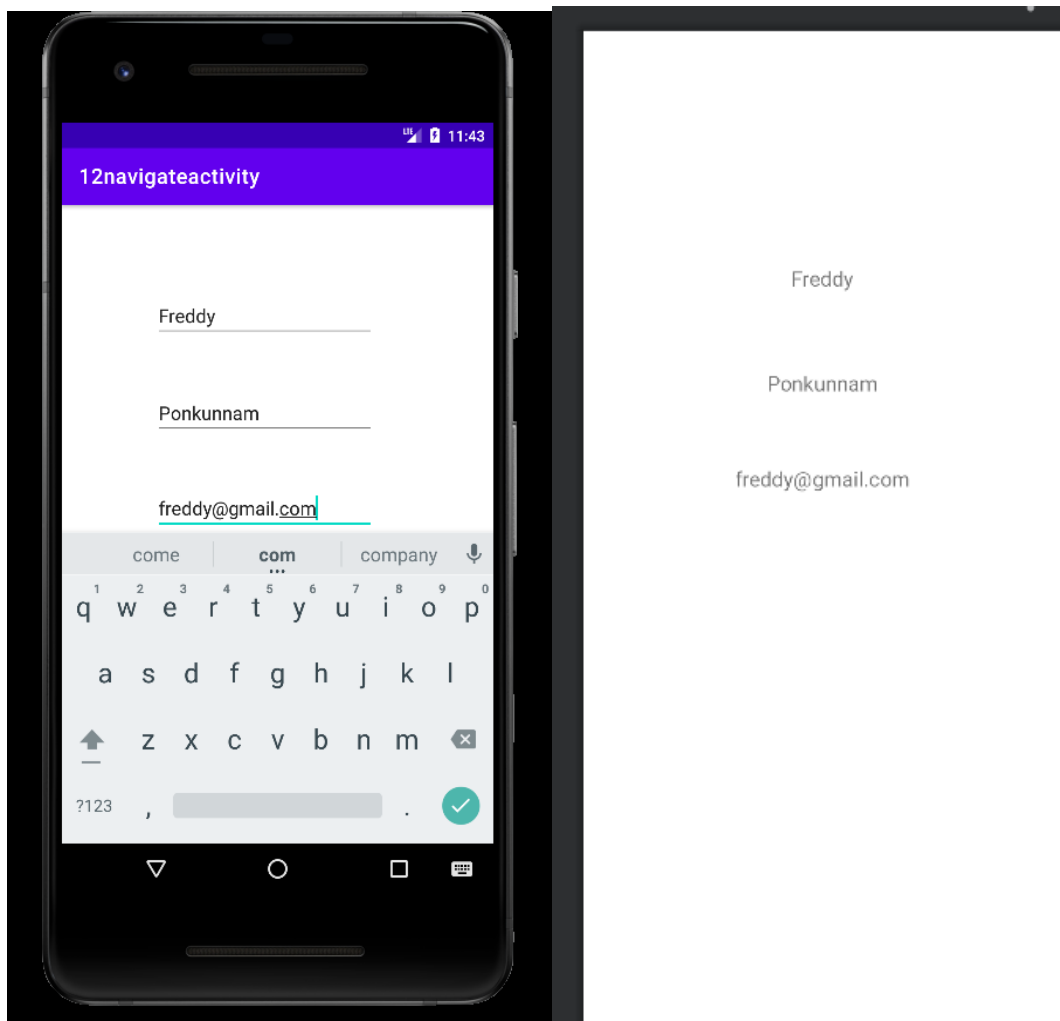
Program no: 12

Aim: Program to develop an application that works with Implicit intents.

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayo

ut

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

s/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="Refer Google"


app:layout_constraintBottom_toBottomOf="parent

"

    app:layout_constraintEnd_toEndOf="parent"
```

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

/>

</androidx.constraintlayout.widget.ConstraintLayo

ut>

Java Code:

```java
package com.example.a13explicit;
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;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button click = findViewById(R.id.cm);
        click.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent j = new Intent(Intent.ACTION_VIEW,
                    Uri.parse("https://www.google.com/"));
                startActivity(j);
            }
```

```
        });
    }
}
```

Output:
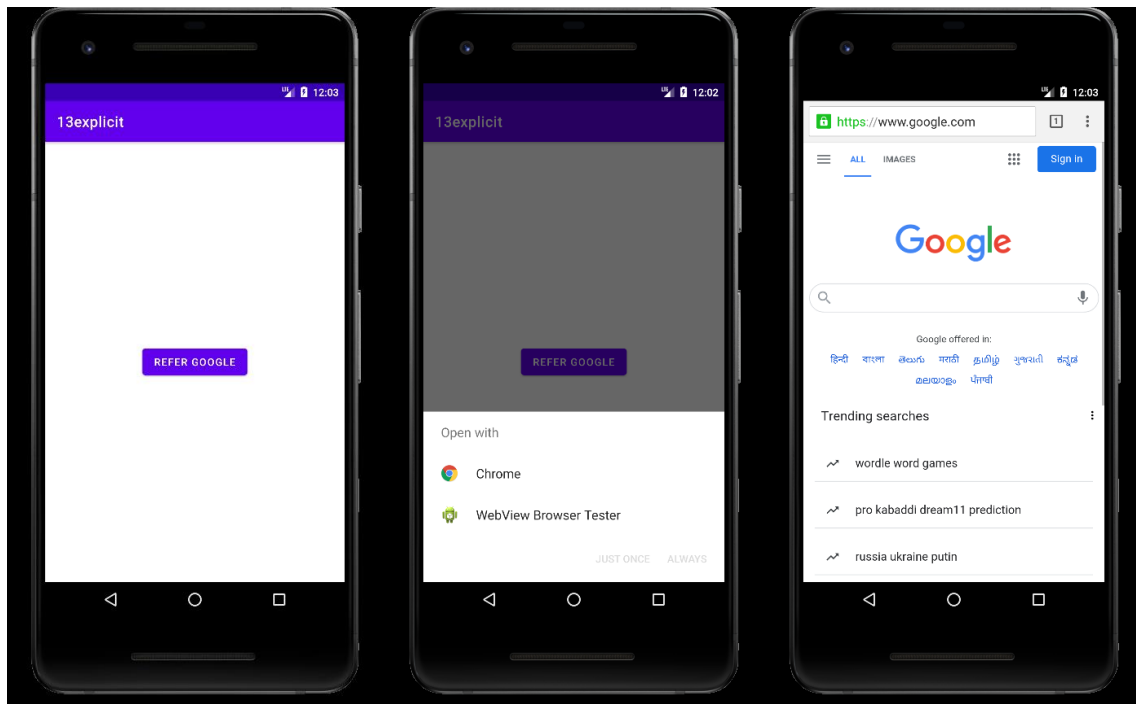
Program no: 13

Aim: Implement Options Menu to navigate to activities

XML Code:

```xml
<?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 Home..!"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintLeft_toLeftOf="parent"

    app:layout_constraintRight_toRightOf="parent"

    app:layout_constraintTop_toTopOf="parent" />

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

menulist.xml

```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="Home"/>
```

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

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

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

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

Java Code:

```java
package com.example.a13explicit;

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.menu_list, menu);

        return true;

    }

    @Override

    public boolean onOptionsItemSelected(MenuItem item) {
```

```java
switch (item.getItemId()) {

    case R.id.item1:

        Toast.makeText(getApplicationContext(), "Home clicked",

            Toast.LENGTH_SHORT).show();

        return true;

    case R.id.item2:

        Toast.makeText(getApplicationContext(), "Settings clicked",

            Toast.LENGTH_SHORT).show();

        return true;

    case R.id.item3:

        Toast.makeText(getApplicationContext(), "About clicked",

            Toast.LENGTH_SHORT).show();

        return true;

    case R.id.item4:

        Toast.makeText(getApplicationContext(), "Help clicked",

            Toast.LENGTH_SHORT).show();

        return true;

    case R.id.item5:

        Toast.makeText(getApplicationContext(), "Logout clicked",

            Toast.LENGTH_SHORT).show();

        return true;

    default:

        return super.onOptionsItemSelected(item);

    }

  }

}
```

Output:
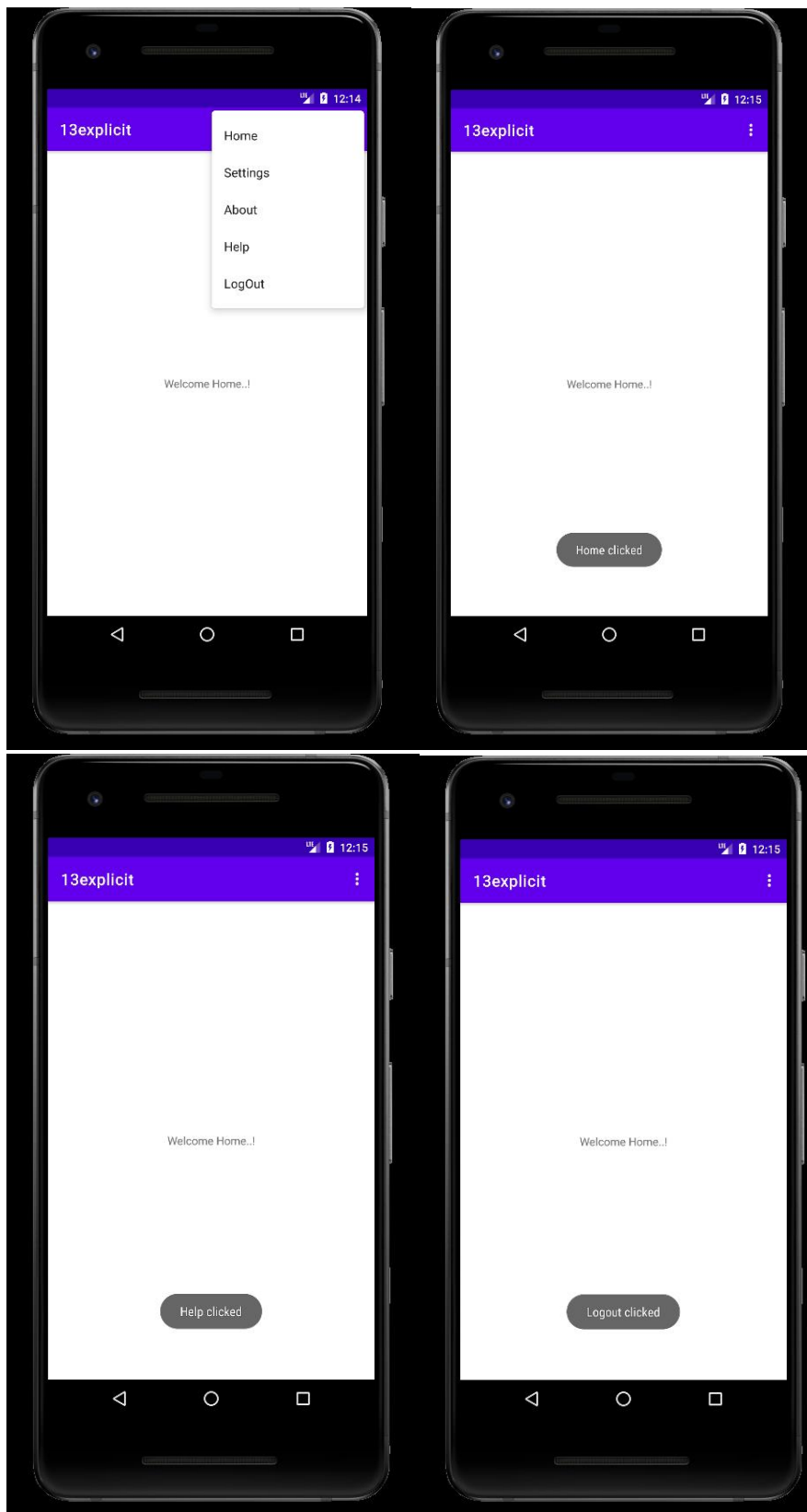
Program no: 14

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

```xml
<?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;
```

```java
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,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:
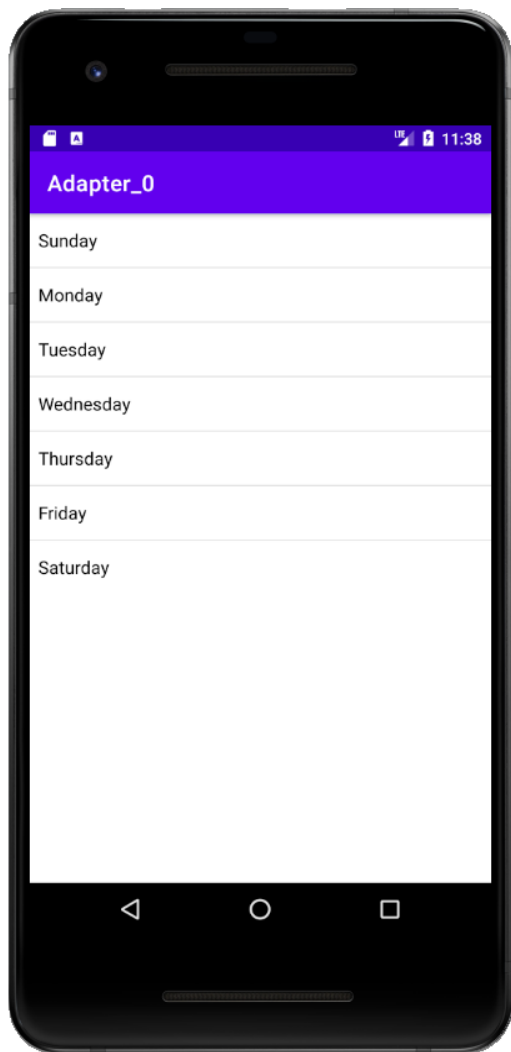
Program no: 15

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

XML Code:

Activity_main.xml:

```
<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"

tools:context=".MainActivity" >

<GridView

android:numColumns="auto_fit"

android:gravity="center"

android:columnWidth="100dp"

android:stretchMode="columnWidth"

android:layout_width="fill_parent"

android:layout_height="fill_parent"

android:id="@+id/grid"

/>

</LinearLayout>
```

grid_single.xml:

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

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

android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"

android:padding="5dp" >

<ImageView

android:id="@+id/grid_image"

android:layout_width="50dp"

android:layout_height="50dp">

</ImageView>

<TextView

android:id="@+id/grid_text"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_marginTop="15dp"

android:textSize="9sp" >

</TextView>

</LinearLayout>
```

Java Code:

```
package com.example.sqliteapplication;

import android.os.Bundle;

import android.app.Activity;

import android.view.View;

import android.widget.AdapterView;

import android.widget.GridView;

import android.widget.Toast;

import com.example.sqliteapplication.CustomGrid;

import com.example.sqliteapplication.R;

public class MainActivity extends Activity {
```

```
GridView grid;

String[] web = {

"Apple",

"Smasung",

"Redmi",

"vivo",

} ;

int[] imageId = {

R.drawable.a,

R.drawable.b,

R.drawable.c,

};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

CustomGrid adapter = new CustomGrid(MainActivity.this, web, imageId);

grid=(GridView)findViewById(R.id.grid);

grid.setAdapter(adapter);

grid.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

public void onItemClick(AdapterView<?> parent, View view,

int position, long id) {

Toast.makeText(MainActivity.this, "You Clicked at " +web[+

position], Toast.LENGTH_SHORT).show();

}
```

```
});
 }
}
```

customGrid

```
package com.example.sqliteapplication;

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 CustomGrid extends BaseAdapter{

 private Context mContext;

 private final String[] web;

 private final int[] Imageid;

 public CustomGrid(Context c,String[] web,int[] Imageid ) {

mContext = c;

this.Imageid = Imageid;

this.web = web;

 }

 @Override

 public int getCount() {

// TODO Auto-generated method stub

 return web.length;

 }

 @Override
```

```
public Object getItem(int position) {

// TODO Auto-generated method stub

return null;

}

@Override

public long getItemId(int position) {

// TODO Auto-generated method stub

return 0;

}

@Override

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

// TODO Auto-generated method stub

View grid;

LayoutInflater inflater = (LayoutInflater) mContext

.getSystemService(Context.LAYOUT_INFLATER_SERVICE);

if (convertView == null) {

grid = new View(mContext);

grid = inflater.inflate(R.layout.grid_single, null);

TextView textView = (TextView) grid.findViewById(R.id.grid_text);

ImageView imageView =

(ImageView)grid.findViewById(R.id.grid_image);

textView.setText(web[position]);

imageView.setImageResource(Imageid[position]);

} else {

grid = (View) convertView;

}

return grid;
```

```
    }
}
```

Output
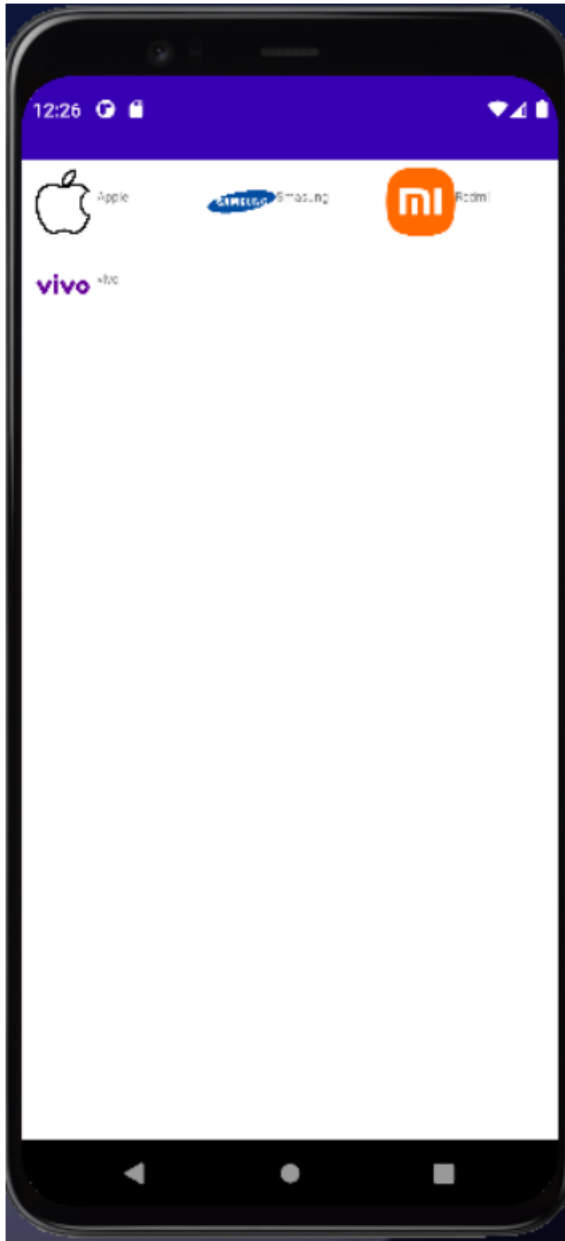
Program no:16

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

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">


    <Spinner
        android:id="@+id/spinner"
        android:layout_width="149dp"
        android:layout_height="40dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.498" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code:

```java
package com.example.spinner;

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.OnItemSelectedListener {
  String[] Countries = { "India", "China", "USA", "Canada", "UK"};


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


    Spinner spin = (Spinner) findViewById(R.id.spinner);
    spin.setOnItemSelectedListener(this);


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


  }
```

@Override

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

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

}

@Override

public void onNothingSelected(AdapterView<?> arg0) {

}

}

Output
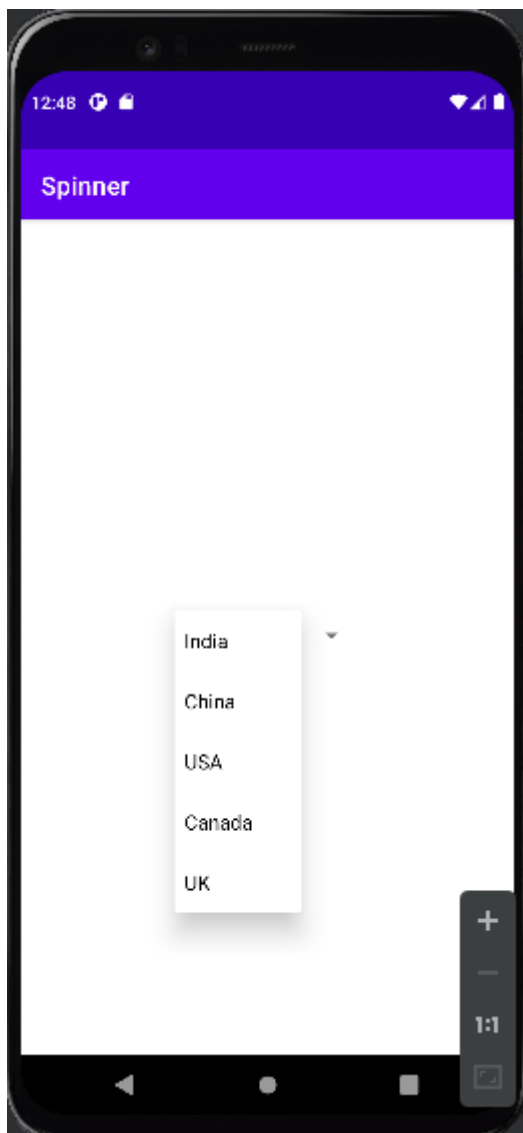
Program no:17

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

XML Code:

```xml
<?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:layout_width="387dp"
        android:layout_height="177dp"
        android:text="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.081"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.057" />

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

Java Code:

```java
package com.example.themes_fj;
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);
    }
}
```

#colors.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="colorPrimary">#35947d</color>
    <color name="colorSec">#779435</color>
    <color name="colorTh">#793594</color>
    <color name="colorFou">#ea5d18</color>
</resources>
```

#new_style.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <!-- Base application theme. -->
    <style name="Theme.new_style"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">


        <item name="colorPrimary">@color/colorPrimary</item>
        <item name="colorSecondary">@color/colorSec</item>
        <item name="colorPrimaryDark">@color/colorTh</item>
```

```
<item name="colorAccent">@color/colorFou</item>

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

<item name="android:textSize">40dp</item>

    </style>

</resources>
```

#values\themes.xml

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

   <!-- Base application theme. -->

   <!-- Base application theme. -->

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


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

      <item name="colorSecondary">@color/colorSec</item>

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

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

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

      <item name="android:textSize">40dp</item>

   </style>

</resources>
```

#AndroidMainfest.xml

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

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

   package="com.example.themes_fj">


   <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.new_style">
        <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>
```

#night\themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Themes_fj"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">

        <item name="colorPrimary">@color/colorPrimary</item>
        <item name="colorSecondary">@color/colorSec</item>
        <item name="colorPrimaryDark">@color/colorTh</item>
        <item name="colorAccent">@color/colorFou</item>
        <item name="android:textSize">40dp</item>

    </style>
</resources>
```

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:layout_height="match_parent"

android:orientation="vertical"

tools:context=".MainActivity">

<Button

android:id="@+id/firstFragment"

android:layout_width="match_parent"

android:layout_height="101dp"

android:background="@color/design_default_color_primary_variant"

android:insetLeft="8dp"

```
android:insetTop="5dp"

android:insetRight="8dp"

android:insetBottom="10dp"

android:text="First Fragment"

android:textColor="@color/white"

android:textSize="20sp"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.231" />

<Button

android:id="@+id/secondFragment"

android:layout_width="418dp"

android:layout_height="101dp"

android:background="@color/design_default_color_primary_variant"

android:insetLeft="8dp"

android:insetTop="5dp"

android:insetRight="8dp"

android:insetBottom="10dp"
```

```
android:text="Second Fragment"

android:textColor="@color/white"

android:textSize="20sp"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintVertical_bias="0.45" />


<FrameLayout

android:id="@+id/frameLayout"

android:layout_width="match_parent"

android:layout_height="530dp"

app:layout_constraintTop_toBottomOf="parent"

tools:layout_editor_absoluteX="-68dp">


</FrameLayout>


</LinearLayout>
```

MainActivity.java

```java
package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.app.Fragment;

import android.app.FragmentManager;

import android.app.FragmentTransaction;

import android.view.View;

import android.widget.Button;


public class MainActivity extends AppCompatActivity {


    Button firstFragment, secondFragment;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

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

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


        firstFragment.setOnClickListener(new View.OnClickListener() {

            @Override
```

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

        loadFragment(new FirstFragment());

}

    });

secondFragment.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {


        loadFragment(new SecondFragment());

}

    });



}

private void loadFragment(Fragment fragment) {


    FragmentManager fm = getFragmentManager();



FragmentTransaction fragmentTransaction = fm.beginTransaction();



fragmentTransaction.replace(R.id.frameLayout, fragment);
```

fragmentTransaction.commit(); // save the changes

}

}

FirstFragment.java

package com.example.fragment;

import android.app.Fragment;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.Toast;

public class FirstFragment extends Fragment {

   View view;

Button firstButton;

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

view = inflater.inflate(R.layout.*fragment_first*, container, false);

firstButton = (Button) view.findViewById(R.id.*firstButton*);

```java
firstButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

        Toast.makeText(getActivity(), "First Fragment", Toast.LENGTH_LONG).show();

}

    });

    return view;

}

}
```

fragment_first.xml

```xml
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context="com.example.fragment.FirstFragment">


<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_centerHorizontal="true"
```

```
android:layout_marginTop="100dp"

android:text="First Fragment"

android:textColor="@color/black"

android:textSize="25sp" />


<Button

android:id="@+id/firstButton"

android:layout_width="fill_parent"

android:layout_height="wrap_content"

android:layout_centerInParent="true"

android:layout_marginLeft="20dp"

android:layout_marginRight="20dp"

android:background="@color/design_default_color_primary_variant"

android:text="First Fragment"

android:textColor="@color/black"

android:textSize="20sp"

android:textStyle="bold" />

</RelativeLayout>
```

SecondFragment.java

package com.example.fragment;

import android.app.Fragment;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.Toast;

public class SecondFragment extends Fragment {

   View view;

Button secondButton;

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

view = inflater.inflate(R.layout.*fragment_second*, container, false);

secondButton = (Button) view.findViewById(R.id.*secondButton*);

secondButton.setOnClickListener(new View.OnClickListener() {

```
@Override

public void onClick(View v) {

        Toast.makeText(getActivity(), "Second Fragment",

Toast.LENGTH_LONG).show();

}

    });

    return view;

}

}
```

fragment_second.xml

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context="com.example.fragment.SecondFragment">


<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_centerHorizontal="true"
```

android:layout_marginTop="100dp"

android:text="Second Fragment"

android:textColor="@color/black"

android:textSize="25sp" />

<Button

android:id="@+id/secondButton"

android:layout_width="fill_parent"

android:layout_height="wrap_content"

android:layout_centerInParent="true"

android:layout_marginLeft="20dp"

android:layout_marginRight="20dp"

android:background="@color/design_default_color_primary_variant"

android:text="Second Fragment"

android:textColor="@color/white"

android:textSize="20sp"

android:textStyle="bold" />

</RelativeLayout>

Output

Program no:19

Aim: Program to 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"

    tools:context=".MainActivity"


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


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="match_parent">

        <TextView

            android:layout_width="match_parent"

            android:layout_height="match_parent"

            android:text="WELCOME"

            android:textSize="10dp"></TextView>


    </LinearLayout>

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

```
android:layout_width="match_parent"

android:layout_height="match_parent"

app:menu="@menu/navigation_menu"

android:layout_gravity="start"

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




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




</androidx.drawerlayout.widget.DrawerLayout>
```

navigation_menu.xml

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

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

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


  <item

    android:id="@+id/nav_ac"

    android:title="Account" />

  <item

    android:id="@+id/nav_set"

    android:title="Settings" />

  <item

    android:id="@+id/nav_log"

    android:title="Logout" />
```

</menu>

strings.xml

<resources>

    <string name="app_name">navigationdrawer_fj</string>

    <string name="nav_open">Open</string>

    <string name="nav_close">Close</string>

</resources>

Java code

```
package com.example.navigationdrawer_fj;

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.NavigationBarView;

import com.google.android.material.navigation.NavigationView;


public class MainActivity extends AppCompatActivity implements
NavigationView.OnNavigationItemSelectedListener{
```

```java
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.nav_ac){

            Toast.makeText(this, "This is Account Page", Toast.LENGTH_LONG).show();

        }


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

            Toast.makeText(this, "This is Logout Page", Toast.LENGTH_LONG).show();

        }


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

            Toast.makeText(this, "This is Settings Page", Toast.LENGTH_LONG).show();

        }


        return false;

    }

}
```

OUTPUT
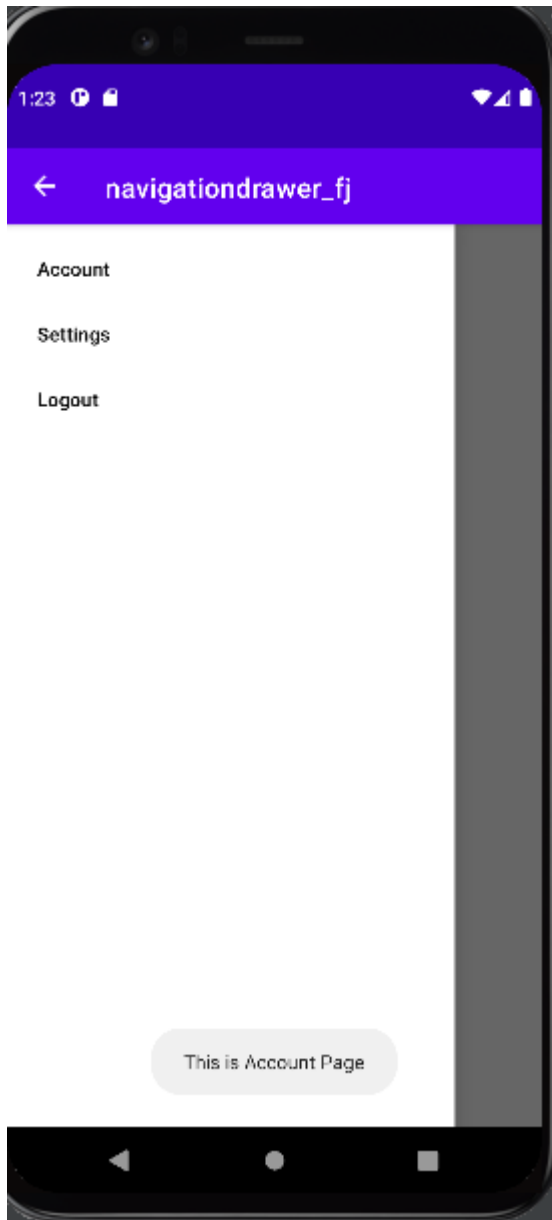
Program no:20

Aim: Program to implement activity lifecycle.

XML Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://sche
mas.androi .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="example.javatpoint.com.activitylifecycle.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" />
</android.support.constraint.ConstraintLayout>
```

Java Code:

```java
package example.javatpoint.com.activitylifecycle;

import android.app.Activity;

import android.os.Bundle;

import android.util.Log;

public class MainActivity extends Activity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

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

}

@Override

protected void onStart() {

super.onStart();

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

}

@Override

protected void onResume() {

super.onResume();

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

}

@Override

protected void onPause() {

super.onPause();

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

}
```

```
@Override

protected void onStop() {

super.onStop();

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

}

@Override

protected void onRestart() {

super.onRestart();

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

}

@Override

protected void onDestroy() {

super.onDestroy();

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

}

}
```

Output

Program no:21

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

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:padding="10dp"

    tools:context=".MainActivity">


    <TextView

        android:id="@+id/texttitle"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="20dp"

        android:text="Please enter the details below"

        android:textSize="24dp" />


    <EditText

        android:id="@+id/name"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"
```

```xml
        android:hint="Name"

        android:textSize="24dp"

        android:layout_below="@+id/texttitle"

        android:inputType="textPersonName"

        />

    <EditText

        android:id="@+id/contact"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Contact"

        android:textSize="24dp"

        android:layout_below="@+id/name"

        android:inputType="number"

        />

    <EditText

        android:id="@+id/dob"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:hint="Date of birth"

        android:textSize="24dp"

        android:layout_below="@+id/contact"

        android:inputType="number"

        />

    <Button

        android:id="@+id/buttonInsert"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"
```

```
    android:textSize="24dp"

    android:text="Insert new Data"

    android:layout_marginTop="30dp"

    android:layout_below="@+id/dob"

    />

<Button

    android:id="@+id/buttonUpdate"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:textSize="24dp"

    android:text="Update Data"

    android:layout_below="@+id/buttonInsert"

    />

<Button

    android:id="@+id/buttondelete"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:textSize="24dp"

    android:text="Delete existing data"

    android:layout_below="@+id/buttonUpdate"

    />

<Button

    android:id="@+id/buttonView"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:textSize="24dp"

    android:text="View data"
```

```
    android:layout_below="@+id/buttondelete"

    />
```

</RelativeLayout>

DBHelper.java

```java
package com.example.sqlite_app;

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 DBHelper extends SQLiteOpenHelper {

    public DBHelper(Context context) {

        super(context, "Userdata", null, 1);

    }


    @Override

    public void onCreate(SQLiteDatabase DB) {

        DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob
TEXT)");


    }
```

```
@Override

public void onUpgrade(SQLiteDatabase DB, int oldVersion, int newVersion) {

    DB.execSQL("drop Table if exists Userdetails");

}

public Boolean insertuserdata(String name, String contact, String dob){

    SQLiteDatabase DB=this.getWritableDatabase();

    ContentValues contentValues=new ContentValues();

    contentValues.put("name",name);

    contentValues.put("contact",contact);

    contentValues.put("dob",dob);

    long result=DB.insert("Userdetails", null, contentValues);

    if(result==-1){

        return false;

    }else{

        return true;

    }

}

public Boolean updateuserdata(String name, String contact, String dob){

    SQLiteDatabase DB=this.getWritableDatabase();

    ContentValues contentValues=new ContentValues();

    contentValues.put("contact",contact);

    contentValues.put("dob",dob);

    Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?", new
String[]{name});

    if(cursor.getCount()>0) {

        long result = DB.update("Userdetails", contentValues, "name=?", new
String[]{name});

        if (result == -1) {
```

```
                return false;

            } else {

                return true;

            }

        }else{

            return false;

        }

    }

    public Boolean deletedata(String name){

        SQLiteDatabase DB=this.getWritableDatabase();

        Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?", new
String[]{name});

        if(cursor.getCount()>0) {

            long result = DB.delete("Userdetails", "name=?", new String[]{name});

            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;
```

```
    }
}
```

Main.java

```java
package com.example.sqlite_app;

import androidx.appcompat.app.AlertDialog;

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.Toast;

public class MainActivity extends AppCompatActivity {

    EditText name, contact, dob;

    Button insert, update, delete, view;

    DBHelper DB;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        name=findViewById(R.id.name);

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

```java
dob=findViewById(R.id.dob);

insert=findViewById(R.id.buttonInsert);

update=findViewById(R.id.buttonUpdate);

delete=findViewById(R.id.buttondelete);

view=findViewById(R.id.buttonView);

DB=new DBHelper(this);


insert.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

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

        String contactTXT=contact.getText().toString();

        String dobTXT=dob.getText().toString();


        Boolean checkinsertdata=DB.insertuserdata(nameTXT,contactTXT,dobTXT);

        if(checkinsertdata==true)

            Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();

        else

            Toast.makeText(MainActivity.this, "unable to insert",
Toast.LENGTH_SHORT).show();

    }

});

update.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

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

        String contactTXT=contact.getText().toString();
```

```
        String dobTXT=dob.getText().toString();


        Boolean checkupdatedata=DB.updateuserdata(nameTXT,contactTXT,dobTXT);

        if(checkupdatedata==true)

            Toast.makeText(MainActivity.this, "Entry updated",
Toast.LENGTH_SHORT).show();

        else

            Toast.makeText(MainActivity.this, "Not updated",
Toast.LENGTH_SHORT).show();

        }

    });

    delete.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

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


            Boolean checkdeletedata=DB.deletedata(nameTXT);

            if(checkdeletedata==true)

                Toast.makeText(MainActivity.this, "Entry deleted",
Toast.LENGTH_SHORT).show();

            else

                Toast.makeText(MainActivity.this, "Not deleted",
Toast.LENGTH_SHORT).show();

        }

    });

    view.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {
```

```java
        Cursor res=DB.getdata();

        if(res.getCount()==0){

            Toast.makeText(MainActivity.this, "No entry exists",
Toast.LENGTH_SHORT).show();

            return;

        }

        StringBuffer buffer=new StringBuffer();

        while(res.moveToNext()){

            buffer.append("Name:"+res.getString(0)+"\n");

            buffer.append("Contact:"+res.getString(1)+"\n");

            buffer.append("Date of Birth:"+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();


    }

    });


  }
}
```

Output