

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

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

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY



**AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**

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**DEPARTMENT OF COMPUTER APPLICATIONS
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CERTIFICATE

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **AKSA ANNA JOSE (Reg.No:AJC20MCA-2006)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

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Program no: 01

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

XML Code:

```
<?xmlversion="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"xmlns:
app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
android:padding="20dp"
android:background="#fff"
tools:context=".login">
<TextView
android:id="@+id/logo_name"
android:layout_width="wrap_content"
android:layout_height="wrap_content"

android:fontFamily="@font/bungee"android:text="H
ELLOTHERE,WELCOMEBACK"
android:textColor="@color/black"a
ndroid:textSize="40sp"android:tran
sitionName="logo_text"/>

<TextViewandroid:id="@+id/sig"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:fontFamily="casual"
android:transitionName="title"
android:text="Sigcontinue"
android:textSize="18sp"/>
<LinearLayout

android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:layout_marginBottom="20dp"
android:orientation="vertical">
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/username"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Username"
```

```

android:transitionName="nme"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">
<com.google.android.material.textfield.TextInputEditText
android:layout_width="match_parent"

android:layout_height="wrap_content"
android:inputType="text"/>
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/password"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Password"
app:passwordToggleEnabled="true"
app:passwordToggleTint="@color/black"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">
<com.google.android.material.textfield.TextInputEditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="textPassword"/>
</com.google.android.material.textfield.TextInputLayout>

<Button
android:id="@+id/fp"
android:layout_width="200dp"
android:layout_height="30dp"
android:textSize="9dp"
android:background="#00000000"
android:text="Forget password?"
android:textColor="@color/black"
android:layout_gravity="right"

android:elevation="0dp"
android:layout_margin="5dp"/>
<Button
android:id="@+id/login_button"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="5dp"
android:layout_marginBottom="5dp"
android:backgroundTint="#000"
android:fontFamily="@font/audiowide"
android:text="Sign-In"
android:textColor="#fff"
android:transitionName="bbtn"/>

```

```

<Button
    android:id="@+id/register_link"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:background="#00000000"
    android:text="NewUser?SIGNUPnow!"
    android:layout_gravity="right"
    android:elevation="0dp"
    android:layout_margin="5dp"/>
</LinearLayout>
</LinearLayout>

```

Java Code:

```

package com.example.todolist;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import android.app.ActivityOptions;
import android.content.Intent;
import android.content.SharedPreferences;
import android.content.pm.PackageManager;
import android.os.AsyncTask;
import android.os.Build;
import android.os.Bundle;
import android.util.Pair;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
import com.google.android.material.textfield.TextInputLayout;
import org.json.JSONObject;

```

```

Public class login extends AppCompatActivity
{
    TextInputLayout
    usr,psd;
    TextView ln,ls;
    Button btn_login,reg,forget;
    String strusername,strpassword,BaseUrl="";

```

```

    SharedPreferences sp;
    @Override
    Protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        ln=findViewById(R.id.logo_name);
        ls=findViewById(R.id.sig);
        usr=(TextInputLayout)

```

```

findViewById(R.id.username);
psd=(TextInputLayout)findViewById(R.id.password);
forget=findViewById(R.id.fp);
btn_login=findViewById(R.id.login_button);
reg=findViewById(R.id.register_link);
sp=getSharedPreferences("login_daa",MODE_PRIVATE);
getSupportActionBar().hide()

/*forget.setOnClickListener(new View.OnClickListener()
{
@Override
Public void onClick(View v){
}
}
});*/
Intentj=newIntent(getApplicationContext(),forgot_password.class);s
tartActivity(j);

btn_login.setOnClickListener(new View.OnClickListener()
{
@Override
publicvoidonClick(View v)
{
strusername=usr.getText().getText().toString().trim();
strpassword=psd.getText().getText().toString().trim();
if(strusername.equals(""))
{
Toast.makeText(login.this,"Enterusername",Toast.LENGTH_LONG).show();
}
elseif(strpassword.equals(""))
{
Toast.makeText(login.this,"Enterpassword",Toast.LENGTH_LONG).show();
}
}
else
{
//newcheckPermission().
execute();

}
}
});
}
}
}

```


Output:

A screenshot of a login form. The form has a title 'Login' at the top. Below it are two input fields: 'Username' with the text 'admin' and 'Password' with five dots. A 'Login' button is at the bottom.

Login

Username
admin

Password

Login

Program no: 02

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

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"androi
d:layout_width="match_parent"android:layout_height="mat
ch_parent"android:background="#FFD24C"
android:gravity="center"android:orientati
on="vertical"tools:context=".Edit2Text">
<EditTextandroid:id="@+i
d/edt1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:hint="Enternamehere.."/>

<Button
android:id="@+id/btn1"android:layout
_width="wrap_content"android:layout
_height="wrap_content"android:layout
_marginTop="20dp"android:text="Ad
d"/>
<TextViewandroid:id="@
+id/txt2"
android:layout_width="match_parent"a
ndroid:layout_height="50dp"android:l
ayout_marginTop="20dp"android:grav
ity="center"android:textSize="20dp"/>
</LinearLayout>
```

JAVA Code:

```
packagecom.exempl. Edit2Text;
importandroidx.appcompat.app.AppCompatActivity;
importandroid.content.Intent;
importandroid.os.Bundle;
importandroid.view.View;
importandroid.widget.Button;

import android.widget.EditText;
importandroid.widget.TextView;
public class Edit2Text extends AppCompatActivity
```

```

{Button
b1;EditText
e1;TextView
t1;
@Override
protectedvoidonCreate(Bundle savedInstanceState)
{super.onCreate(savedInstanceState);setContentView(R.layout.activity_edit2_
text);
e1
=
findViewById(R.id.edt1);b1
=
findViewById(R.id.btn1);t1=
findViewById(R.id.txt2);
b1.setOnClickListener(newView.OnClickListener()
{
@Override
publicvoidonClick(View v){
Stringvalue=e1.getText().toString();t1

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

```

Output:



Program no: 03

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

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:orientation="vertical"
android:gravity="center"
android:background="@drawable/login"
android:layout_height="match_parent"
tools:context=".Login">
<TextViewandroid:id="@+id/t
xtlgn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:fontFamily="@font/archivo_black"
android:text="Login"android:textSize="50d
p"/>

<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical"
android:layout_marginLeft="20dp
android:layout_marginRight="20dp">
<com.google.android.material.textfield.TextInputLayout
android:id="@+id/edturn"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Username"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">
<com.google.android.material.textfield.TextInputEditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="text"/>
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout

android:id="@+id/edtpswd"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Password"
```

```

style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox">
<com.google.android.material.textfield.TextInputEditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"android:inputType="text
"/>
</com.google.android.material.textfield.TextInputLayout>
</LinearLayout>
<Button
    android:id="@+id/btnlgn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Login"/>
</LinearLayout>

```

JAVA Code:

```

Package com.example. Login;
import androidx. Appcompat .app. AppCompatActivity;
import android.content.Intent;

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

    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        t1=findViewById(R.id.txtlgn);e1=
        findViewById(R.id.edturn);e2 =
        findViewById(R.id.edtpswd);b1=f
        indViewById(R.id.btnlgn);
    }
}

```

```

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String username = e1.getText().getText().toString().trim();
        String password = e2.getText().getText().toString().trim();
        if (username.equals("")) {
            Toast.makeText(Login.this, "Enter your username", Toast.LENGTH_SHORT)
                .show();
        }
        else if (password.equals("")) {
            Toast.makeText(Login.this, "Enter your password", Toast.LENGTH_SHORT)
                .show();
        }
        else {
            Intent j = new Intent(Login.this, Dashboard.class);

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

```

OUTPUT:

A login form is displayed on a light gray background. It consists of two text input fields and a button. The first input field contains the text "admin". The second input field contains masked characters "*****". Below these fields is a blue rectangular button with the word "LOGIN" in white capital letters.

Program no: 04

Aim: Program to implementing basic arithmetic operations of a simple calculator

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout

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

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

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:background="#8BC34A"

    android:backgroundTint="@android:color/darker_gray"

    tools:context=".MainActivity">

    < Text View to display our basic heading of "calculator"-->

    <TextView

        android:layout_width="194dp"

        android:layout_height="43dp"

        android:layout_marginStart="114dp"

        android:layout_marginLeft="114dp"

        android:layout_marginTop="58dp"

        android:layout_marginEnd="103dp"

        android:layout_marginRight="103dp"

        android:layout_marginBottom="502dp"

        android:scrollbarSize="30dp"

        android:text=" Calculator"
```



```

        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

< Edit Text View to input the values -->

<EditText

```

        android:id="@+id/num1"
        android:layout_width="364dp"
        android:layout_height="28dp"
        android:layout_marginStart="72dp"
        android:layout_marginTop="70dp"
        android:layout_marginEnd="71dp"
        android:layout_marginBottom="416dp"
        android:background="@android:color/white"
        android:ems="10"
        android:hint="Number1(0)"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

< Edit Text View to input 2nd value-->

<EditText

```

android:id="@+id/num2"
android:layout_width="363dp"
android:layout_height="30dp"
android:layout_marginStart="72dp"
android:layout_marginTop="112dp"
android:layout_marginEnd="71dp"
android:layout_marginBottom="374dp"
android:background="@android:color/white"
android:ems="10"
android:hint="number2(0)"
android:inputType="number"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

```

< Text View to display result -->

<TextView

```

android:id="@+id/result"
android:layout_width="356dp"
android:layout_height="71dp"
android:layout_marginStart="41dp"
android:layout_marginTop="151dp"
android:layout_marginEnd="48dp"
android:layout_marginBottom="287dp"
android:background="@android:color/white"
android:text="result"

```

```

        android:textColorLink="#673AB7"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

<A button to perform 'sum' operation -->

<Button

```

        android:id="@+id/sum"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="292dp"
        android:layout_marginEnd="307dp"
        android:layout_marginBottom="263dp"
        android:backgroundTint="@android:color/holo_red_light"
        android:onClick="doSum"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

< A button to perform subtraction operation. -->

<Button

```

android:id="@+id/sub"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="210dp"
android:layout_marginTop="292dp"
android:layout_marginEnd="113dp"
android:layout_marginBottom="263dp"
android:backgroundTint="@android:color/holo_red_light"
android:onClick="doSub"
android:text="-"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

```

<A button to perform division. -->

<Button

```

android:id="@+id/div"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="307dp"
android:layout_marginTop="292dp"
android:layout_marginEnd="16dp"
android:layout_marginBottom="263dp"
android:backgroundTint="@android:color/holo_red_light"
android:onClick="doDiv"

```

```

        android:text="/"

        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

<A button to perform multiplication. -->

<Button

```

        android:id="@+id/mul"

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="356dp"
        android:layout_marginEnd="307dp"
        android:layout_marginBottom="199dp"
        android:backgroundTint="@android:color/holo_red_light"
        android:onClick="doMul"
        android:text="x"

        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

< A button to perform a modulus function. -->

<Button

```

        android:id="@+id/button"

```

```

android:layout_width="92dp"
android:layout_height="48dp"
android:layout_marginStart="113dp"
android:layout_marginTop="356dp"
android:layout_marginEnd="206dp"
android:layout_marginBottom="199dp"
android:backgroundTint="@android:color/holo_red_light"
android:onClick="doMod"
android:text="%(mod)"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

```

<A button to perform a power function. -->

<Button

```

android:id="@+id/pow"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="113dp"
android:layout_marginTop="292dp"
android:layout_marginEnd="210dp"
android:layout_marginBottom="263dp"
android:backgroundTint="@android:color/holo_red_light"
android:onClick="doPow"
android:text="n1^n2"
app:layout_constraintBottom_toBottomOf="parent"

```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

```

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

JAVA Code:

```

import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText e1, e2;
    TextView t1;
    int num1, num2;

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

    // a public method to get the input numbers
    public boolean getNumbers() {

```

```

// defining the edit text 1 to e1
e1 = (EditText) findViewById(R.id.num1);

// defining the edit text 2 to e2
e2 = (EditText) findViewById(R.id.num2);

// defining the text view to t1
t1 = (TextView) findViewById(R.id.result);

// taking input from text box 1
String s1 = e1.getText().toString();

// taking input from text box 2
String s2 = e2.getText().toString();

// condition to check if box is not empty
if ((s1.equals(null) && s2.equals(null))
    || (s1.equals("") && s2.equals(""))) {

    String result = "Please enter a value";
    t1.setText(result);

    return false;
} else {

    // converting string to int.
    num1 = Integer.parseInt(s1);

```



```
        // converting string to int.
        num2 = Integer.parseInt(s2);
    }

    return true;
}

// a public method to perform addition
public void doSum(View v) {

    // get the input numbers
    if (getNumbers()) {
        int sum = num1 + num2;
        t1.setText(Integer.toString(sum));
    }
}

// a public method to perform power function
public void doPow(View v) {

    // get the input numbers
    if (getNumbers()) {
        double sum = Math.pow(num1, num2);
        t1.setText(Double.toString(sum));
    }
}
```

```
// a public method to perform subtraction
public void doSub(View v) {

    // get the input numbers
    if (getNumbers()) {
        int sum = num1 - num2;
        t1.setText(Integer.toString(sum));
    }
}
```

```
// a public method to perform multiplication
public void doMul(View v) {

    // get the input numbers
    if (getNumbers()) {
        int sum = num1 * num2;
        t1.setText(Integer.toString(sum));
    }
}
```

```
// a public method to perform Division
public void doDiv(View v) {

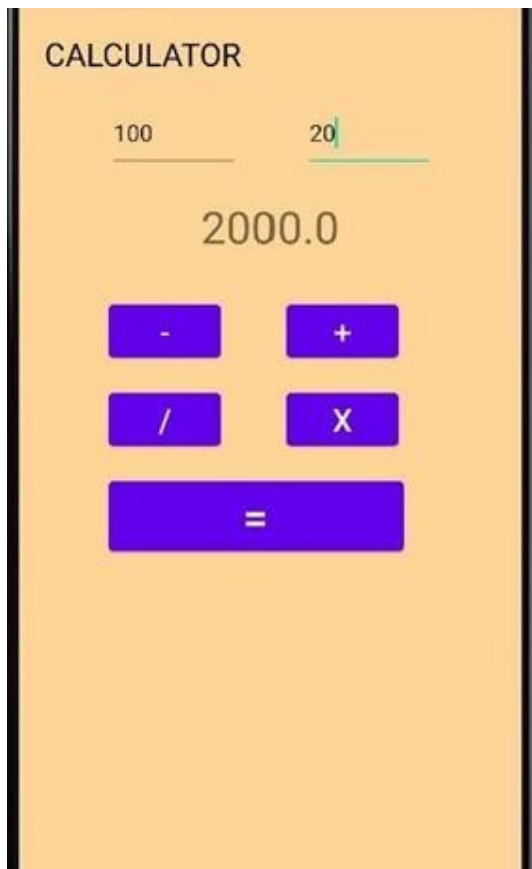
    // get the input numbers
    if (getNumbers()) {
```

```
        // displaying the text in text view assigned as t1
        double sum = num1 / (num2 * 1.0);
        t1.setText(Double.toString(sum));
    }
}

// a public method to perform modulus function
public void doMod(View v) {

    // get the input numbers
    if (getNumbers()) {
        double sum = num1 % num2;
        t1.setText(Double.toString(sum));
    }
}
}
```

OUTPUT:



Program no: 05

Aim: Program to implement validations on various UI controls

XML Code:

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

<EditText
android:id="@+id/lastName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="LastName"
android:inputType="text"/>

<EditText
android:id="@+id/email"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Email"
android:inputType="textEmailAddress"/>
```

```

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginTop="16dp"

    android:layout_marginEnd="16dp"
    android:hint="Password"
    android:inputType="textPassword"/>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="8dp"
    android:gravity="end"
    android:orientation="horizontal">
    <Button
        android:id="@+id/cancelButton" style="@style/Widget.
        AppCompat.Button.Borderless

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="4dp"
        android:text="CANCEL"
        android:textColor="@color/white"/>
    <Button
        android:id="@+id/proceedButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="16dp"
        android:backgroundTint="@color/black" android:text=" PROCEED
        android:textColor="@android:color/white"
        tools:ignore="ButtonStyle"/>
</LinearLayout>
</LinearLayout>

```

JAVA Code:

```

package com.example.UI_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 Ui_validation extends AppCompatActivity{
//two buttons
Button bCancel,bProceed;
//four text fields
EditText etFirstName, etLastName, etEmail, etPassword;
//one boolean variable to check whether all the text fields
//are filled by the user, properly or
boolean isAllFieldsChecked=false;

@Override
protected void onCreate(Bundle savedInstanceState){
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_ui_validation);
//register buttons with their proper IDs. bProceed =
findViewById(R.id.proceedButton); bCancel=
findViewById(R.id.cancelButton);
//register all the EditText fields with their
IDs. etFirstName=
findViewById(R.id.firstName); etLastName=findViewById(R.id.lastName); etEmail=
findViewById(R.id.email); etPassword= findViewById(R.id.password);
//handle the PROCEED
Button bProceed. SetOnClickListener(new View.OnClickListener()
{

@Override

public void onClick (View v)
{
//store the returned value of the dedicated function which checks
//whether the entered data is valid or if any fields
//are left blank. is All Fields Checked=Check AllFields()
//the boolean variable turns to be true then
//only the user must be proceed to the activity2

if (isAllFieldsChecked){
Intent i= new Intent
(Ui_validation.this, Dashboard.class);
startActivity(i);
}
}
});
//if user presses the cancel button then close the
//
application or the particular activity. bCancel.setOn
ClickListener(new View.OnClickListener(){
@Override

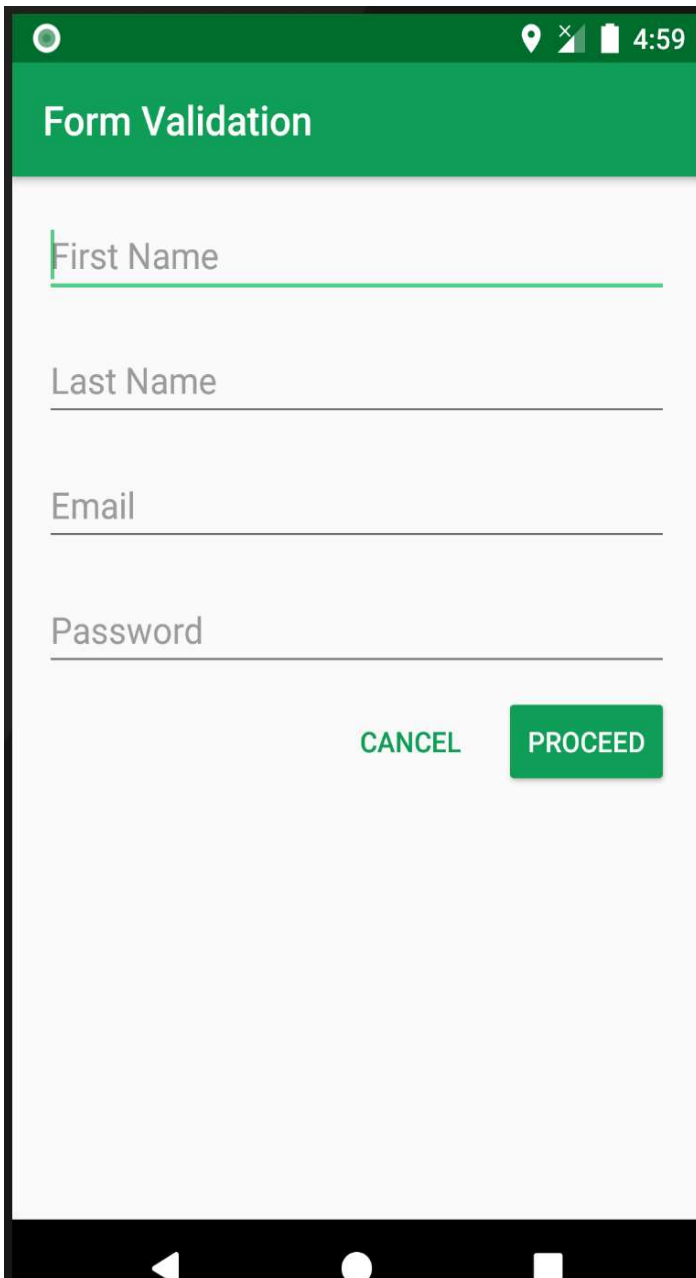
```

```

Public void onClick (View v)
{ Ui_validation.this.finish();
System.exit(0);
}
//function which checks all the textfields
//are filled or not by the user.
//when user clicks onthe PROCEED button
//thisfunctionistriggered.
Private Boolean CheckAllFields()
{if(etFirstName.length()==0)
{
etFirstName.setError("Thisfieldisrequired");
returnfalse;
}

if (etLastName.length()
==
0)
{
etLastName.setError("This field isrequired");
returnfalse;
}
if (etEmail.length()
== 0)
{
etEmail.setError("Email is required");
returnfalse;
}
if (etPassword.length()
== 0)
{
etPassword.setError("Password is required");
returnfalse;
}
Elseif
(etPassword.length() <8)
{
etPassword.setError("Passwordmustbeminimum8characters");
returnf alse;
}
}
//afterall validation
returntrue.returntrue;
}
}

```


OUTPUT:

The screenshot displays a mobile application interface with a green header bar containing the title "Form Validation". Below the header, there are four text input fields labeled "First Name", "Last Name", "Email", and "Password". The "First Name" field has a green underline. At the bottom of the form, there are two buttons: a green "CANCEL" button and a green "PROCEED" button. The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps icons.

Program no: 06

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

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns:
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=".SPandIntent">
<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"/>
<TextViewandroid:id="@+id/textView4"
"android:layout_width="wrap_content
"android:layout_height="wrap_content
"android:text="EmailID"
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_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="PhoneNo."
    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_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="EnterYourDetails"
    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>

```

Sp2.xml

```

<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns: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=".Sp2"
    <TextView
        android:id="@+id/textView2"
        android:text="YourDetailsUsing 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_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="YourDetailsUsing SharedPreference"
    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 SP and Intent extends AppCompatActivity {
    @Override
    Protected void onCreate (Bundle savedInstanceState)
    {

```

```

super.onCreate(savedInstanceState);
setContentView(R.layout.activity_spand_intent);
ActionBar a = getSupportActionBar();
a.setTitle("Welcome");
Buttonsb=findViewById(R.id.sav);
EditText nam = findViewById(R.id.name);
EditText email = findViewById(R.id.em);
EditTextphone=findViewById(R.id.ph);

sub.setOnClickListener(new View.OnClickListener()
{
@Override
publicvoidonClick(Viewview)
{
Intent i = new Intent(SPandIntent.this, Sp2.class);
Stringuser=nam.getText().toString();i.putExtra("
Name",user);
StringE_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();
}
});
}
}

```

Sp2.java

```

package com.example.Sp2;
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 Sp2 extends AppCompatActivity

{
    @Override

    Protected void onCreate ( Bundle savedInstanceState)
    {

        super.onCreate(savedInstanceState);
        setContentView
        (R.layout.activity_sp2);
        ActionBar=getSupportActionBar();
        setTitle("Display");
        TextView diss=findViewById(R.id.diss);
        TextView diss1=findViewById(R.id.diss1);

        Intent i=getIntent();
        String name = i.getStringExtra("Name");
        String email = i.getStringExtra("Email");
        String phone=i. getExtra("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: Program to design a simple Calculator using GridLayout and Cascaded LinearLayout

XML Code:

```
<?xmlversion="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"xmlns:
app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="#00000000"
android:layout_gravity="bottom"
android:gravity="bottom"
android:orientation="vertical"
tools:context=".Output">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"

android:layout_gravity="end"
android:orientation="vertical">
<TextView
android:layout_marginEnd="20dp"
android:text="18+7"
android:textAlignment="textEnd"
android:textColor="@color/black"
android:textSize="40dp"/>
<TextView
android:layout_marginEnd="20dp"
android:text="=25"
android:textAlignment="textEnd"
android:textColor="@color/black"
android:textSize="40dp"/>
</LinearLayout>

<GridLayoutandroid:layout_width="
wrap_content"android:layout_height="
wrap_content"
android:layout_margin="10dp"
```

```

        android:layout_weight="1"
        android:columnCount="4"
        android:gravity="bottom"
        android:rowCount="4">
        <Button
        android:id="@+id/b9"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="9"
        android:textColor="@color/white"
        android:textSize="25dp"/>
        <Button
        android:id="@+id/b8"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="8"
        android:textColor="@color/white"
        android:textSize="25dp"/>
        <Button
        android:id="@+id/b7"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="7"
        android:textColor="@color/white"
        android:textSize="25dp"/>
        <Button
        android:id="@+id/bmult"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="#F86605"
        android:text="x"
        android:textColor="@color/white"
        android:textSize="18dp"/>
        <Button
        android:id="@+id/b6"
        android:layout_width="50dp"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="6"
        android:textColor="@color/white"

```

```

        android:textSize="25dp"/>
    <Button
        android:id="@+id/b5"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="5"
        android:textColor="@color/white"
        android:textSize="25dp"/>
    <Button
        android:id="@+id/b4"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text="4"
        android:textColor="@color/white"
        android:textSize="25dp"/>
    <Button

        android:id="@+id/bdiv"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="#F86605"

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

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

```

```

<Button
android:id="@+id/b1"
android:layout_width="50dp"

android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
android:text="1"
android:textColor="@color/white"
android:textSize="25dp"/>
<Button
android:id="@+id/bminus"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="#F86605"
android:text="-"
"android:textColor="@color/white"
android:textSize="25dp"/>
<Button

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

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

```

```

    android:textColor="@color/white"
    android:textSize="25dp"/>
</GridLayout>
</LinearLayout>
</LinearLayout>

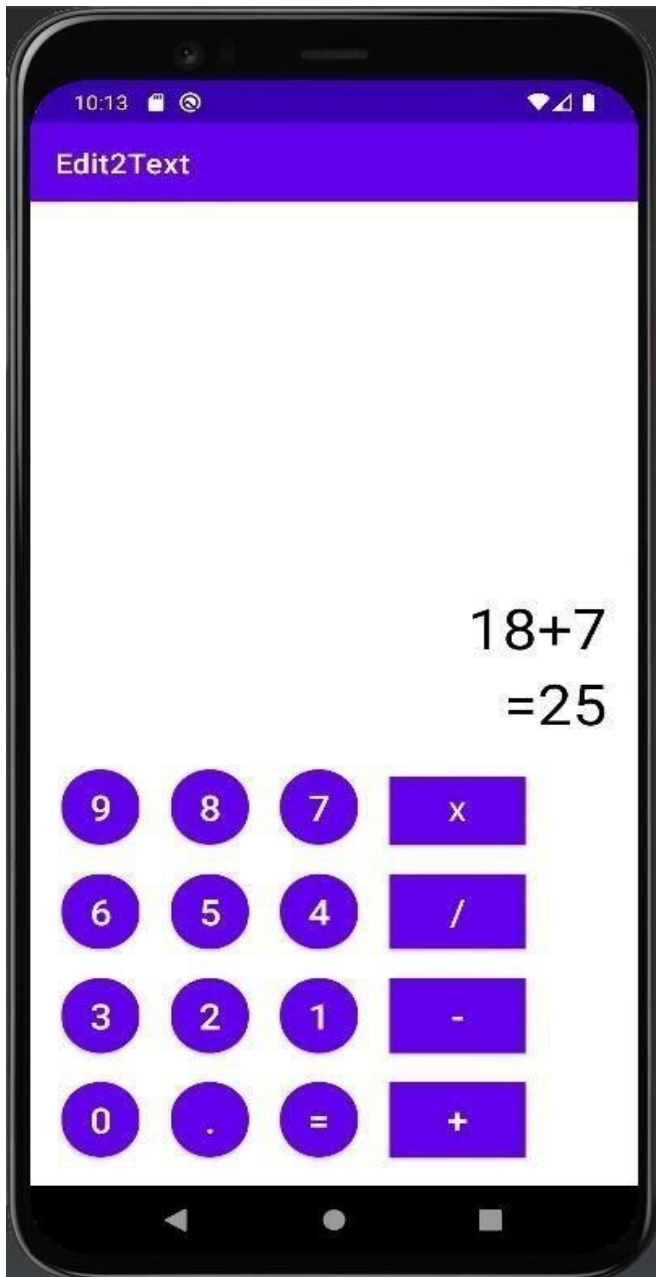
```

JAVA Code:

```

Package com.example.edit2text;
Import android x.appcompat. app.AppCompatActivity;
Import android.os.Bundle;
Import android.widget.TextView;
Public class Output extends AppCompatActivity
{TextViewt1;
@Override
protectedvoidonCreate(Bundle savedInstanceState)
{super.onCreate(savedInstanceState); setContentView(R.layout.activity_output)
;
}
}

```



Program no: 08

Aim: Program to create a Facebook page using RelativeLayout; set properties using .xmlfile

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@color/white"
tools:context=".facebook">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="#29487D"
android:gravity="center|top"
android:orientation="vertical">
<LinearLayout

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

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:fontFamily="@font/arvo"
android:padding="10dp"
android:text="facebook"
android:textColor="@color/white"
android:textSize="36dp"/>
</LinearLayout>
<LinearLayout
android:padding="15dp"
android:orientation="vertical"
android:layout_margin="20dp">
<EditText

android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Email or Phone"
android:layout_marginBottom="30dp"
android:textColorHint="#594F4F"/>
```

```

<EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"

    android:layout_marginBottom="30dp"
    android:hint="password"
    android:textColorHint="#594F4F"/>
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="LogIn"
    android:background="@color/design_default_color_primary"
    android:textAllCaps="false"/>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="180dp"
    android:layout_gravity="bottom"
    android:gravity="center">
<TextView

    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="end"
    android:textStyle="bold"
    android:textColor="@color/white"
    android:layout_weight="50"
    android:text="SignUpforFacebook"/>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="end"
    android:textColor="@color/white"
    android:layout_marginEnd="130dp"
    android:layout_weight="1"
    android:textStyle="bold"android:text="?" /
>
</LinearLayout>
</LinearLayout>
</LinearLayout>

```


JAVA Code:

```
package com.example.facebook;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
public class facebook extends AppCompatActivity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState); setContentView(R.layout.activity_facebook);  
    }  
}
```

OUTPUT:

Program no: 09

Aim: Program to develop an application that toggles image using FrameLayout

XML Code:

```
<?xmlversion="1.0" encoding="utf-8"?>
<FrameLayoutxmlns: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/bg2"
tools:context=".image_toogle">
<ImageView
android:id="@+id/image2"
android:layout_gravity="center"
android:src="@drawable/vd"
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/applogo"/>
</FrameLayout>
```

JAVA Code:

```
Package com.example.toggle;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
public class image_toogle extends AppCompatActivity implements View.OnClickListener{
    ImageViewimg1,img2;
    @Override
    Protected void onCreate (Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_image_toogle);
    img1=findViewById(R.id.image1);i
    mg2=findViewById(R.id.image2);

    img1.setOnClickListener(this);
    img2.set
    OnClickListener(this);
    }
    Public void onClick(View v)
```

```
{intid= v.getId();  
switch(id){  
case  
R.id.image1:img1.setVisibility(View.  
gone1.GONE);  
img2.setVisibility(View.VISIBLE);brea  
k;  
case  
R.id.image2:img1.setVisibility(View.  
VISIBLE);img2.setVisibility(View.  
GONE);break;  
}  
}  
}
```

OUTPUT:

Program no: 10

Aim: Program to implement Adapters and perform exception handling

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:gravity="center"
tools:context=".exception">
<TextView
android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="TextView"/>
</LinearLayout>
```

JAVA Code:

```
packagecom.example.exception;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;
public class exception extends AppCompatActivity
{TextViewtextView;
@Override
protectedvoidonCreate(Bundle savedInstanceState)
{super.onCreate(savedInstanceState);
setContentView(R.layout.activity_exception);
try{
textView.setText("Hellothere...");
}catch(Exceptione){
Toast.makeText(this,e.getMessage(),Toast.LENGTH_SHORT).show();
}
}
}
```

OUTPUT:

Program no: 11

Aim: Program to implement Intent to navigate between multiple activities (Explicit Intent)

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns:
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

```

<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns:
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_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_constraintVertical_bias="0.306"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

JAVA Code:

```

package com.example.EditText;
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.Display;
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:

```
<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns:
android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".explicit">
<Button
android:id="@+id/cm"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Refer Google"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

JavaCode:

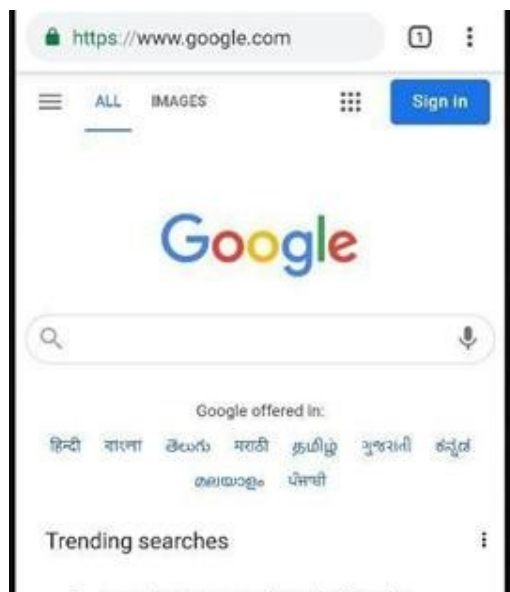
```
packagecom.example.explicit;
importandroidx.appcompat.app.ActionBar;
importandroidx.appcompat.app.AppCompatActivity;
importandroid.content.Intent;
importandroid.net.Uri;
importandroid.net.UriQuerySanitizer;
importandroid.os.Bundle;
importandroid.view.View;
importandroid.widget.Button;
public class explicit extends AppCompatActivity
{
    @Override
    Protected void onCreate(Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_explicit);
    Buttonclick= 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: Program to implement Options Menu to navigate to activities

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<menuxmlns:android="http://schemas.android.com/apk/res/android">
<itemandroid:id="@+id/item1"android:title="Home"/>
<itemandroid:id="@+id/item1"android:title="Favourites"/>
<itemandroid:id="@+id/item1"android:title="Account"/>
<itemandroid:id="@+id/item2"android:title="Settings"/>
<itemandroid:id="@+id/item4"android:title="Help&Feedback"/>
<itemandroid:id="@+id/item5"android:title="LogOut"/>
</menu>
<?xmlversion="1.0"encoding="utf-8"?>
<androidx.constraint layout. widget.Constraint Layoutxmlns:
android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-
auto"xmlns:tools="http://schemas.android.com/tools"
tools:context=".menu_bar"
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="WelcomeHome..!"

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

JAVA CODE:

```

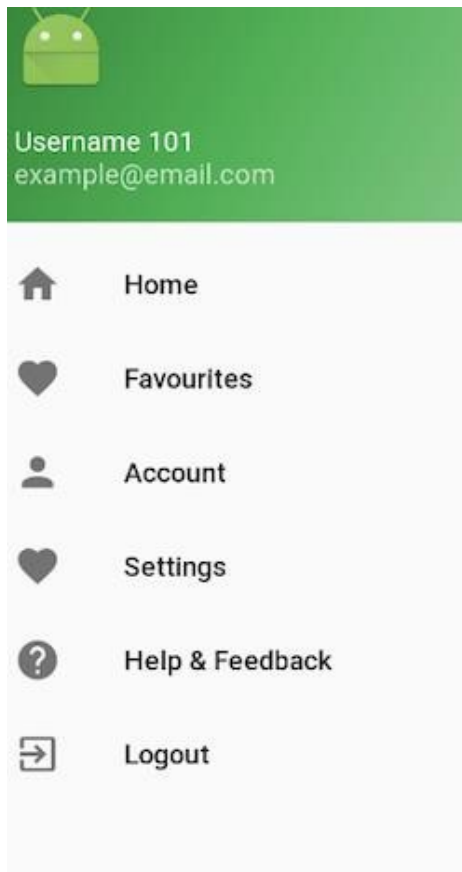
package com.example.Menu;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;
public class menu_bar extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_menu_bar);
    }

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

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        switch (item.getItemId()) {
            case R.id.item1:
                Toast.makeText(getApplicationContext(), "Home clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            case R.id.item2:
                Toast.makeText(getApplicationContext(), "Settings clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            case R.id.item3:
                Toast.makeText(getApplicationContext(), "About clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            case R.id.item4:
                Toast.makeText(getApplicationContext(), "Help clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            case R.id.item5:
                Toast.makeText(getApplicationContext(), "Logout clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            default:
                return super.onOptionsItemSelected(item);
        }
    }
}

```

```
}  
}  
}
```

OUTPUT:

Program no: 14

Aim: Program to develop an application that uses ArrayAdapter with List View

XML Code:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns: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=".arrayAdapter">
<ListView
android:id="@+id/mobile_list"
android:layout_width="match_parent"
android:layout_height="wrap_content">
</ListView>
</LinearLayout>
```

JAVA Code:

```
packagecom.example.ArrayAdapter;
import androidx. Appcompa t.app. AppCompatActivity;
importandroid.os.Bundle;
importandroid.view.View;
importandroid.widget.AdapterView;
importandroid.widget.ArrayAdapter;
importandroid.widget.ListView;
importandroid.widget.TextView;
importandroid.widget.Toast;
public class array Adapter extends App CompatActivity
implements Adapter View.OnItem ClickListener
{
    ListViewl;
    String[]days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday";
    @Override
    Protected void onCreate (Bundlesaved InstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_array_adapter);
```

```

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,Viewview,inti,longl)
{
TextViewtemp=(TextView)view;
Toast.makeText(this,"Youclicked "+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:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
<GridView
android:id="@+id/idGVcourses"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:horizontalSpacing="6dp"
android:numColumns="2"
android:verticalSpacing="6dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
#carditem.xml
<?xml version="1.0" encoding="utf-8"?>
<!--XML implementation of Card Layout-->
<androidx.cardview.widget.CardView
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:layout_width="match_parent"
android:layout_height="120dp"
android:layout_gravity="center"
android:layout_margin="5dp"
app:cardCornerRadius="5dp"
app:cardElevation="5dp">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical">
```

```

<ImageView
    android:id="@+id/image"
    android:layout_width="100dp"

    android:layout_height="100dp"
    android:layout_gravity="center"
    android:src="@mipmap/ic_launcher" />
<TextView
    android:id="@+id/flower"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/app_name"
    android:textAlignment="center" />
</LinearLayout>
</androidx.cardview.widget.CardView>

```

JAVA Code:

```

package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.GridView;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity
{
    GridView images;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        coursesGV = findViewById(R.id.idimages);
        ArrayList<image> imageArrayList;
        imageArrayList = new ArrayList<image>();
        imageArrayList.add(new image("Flower1", R.drawable.img));
        imageArrayList.add(new image("Flower2", R.drawable.img_1));
        imageArrayList.add(new image("Flower3",R.drawable.img_2));
        imageArrayList.add(new image("Flower4", R.drawable.img_3));
        imageArrayList.add(new image("Flower5", R.drawable.img_4));
        imageArrayList.add(new image("Flower6", R.drawable.img_5));
        imageAdapter adapter = new imageAdapter(this, imageArrayList);
        image.setAdapter(adapter);
    }
}

```

```

#Adapter
package com.example.myapplication;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import java.util.ArrayList;

public class imageAdapter extends ArrayAdapter<image> {
    public imageAdapter(@NonNull Context context, ArrayList<image> imageArrayList)
    {
        super(context, 0, imageArrayList);
    }
    @NonNull
    @Override
    public View getView(int position, @Nullable View convertView, @NonNull ViewGroup
    parent) {
        View listitemView = convertView;
        if (listitemView == null) {
            // Layout Inflater inflates each item to be displayed in GridView.
            listitemView = LayoutInflater.from(getContext()).inflate(R.layout.card_item, parent,
            false);
        }
        Image image = getItem(position);
        TextView image = listitemView.findViewById(R.id.flower);
        ImageView image = listitemView.findViewById(R.id.image);
        courseTV.setText(image.getCourse_name());
        courseIV.setImageResource(image.getImgid());
        return listitemView;
    }
}

```

OUTPUT:

Program no: 16

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

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
<Spinner
android:id="@+id/spinner"
android:layout_width="197dp"
android:layout_height="70dp"
tools:layout_editor_absoluteX="92dp"
tools:layout_editor_absoluteY="297dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.502"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.48"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```

package com.example.spinnercomponents;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;

import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {
String[] country={"india","china","japan","other"};
@Override

protected void onCreate(Bundle savedInstanceState)
{
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Spinner spin =(Spinner) findViewById(R.id.spinner);
spin.setOnItemClickListener(this);
ArrayAdapter aa = new ArrayAdapter(this,android.R.layout.simple_spinner_item,country);
aa.setDropDownViewResource(android.R.layout.simple_spinner_item);
spin.setAdapter(aa);
}

}
@Override
public void onItemClick(AdapterView<?> arg0, View arg1, int position, long id)
{
Toast.makeText(getApplicationContext(),country[position],Toast.LENGTH_LONG).show
();
}
@Override
public void onNothingSelected(AdapterView<?>arg0){
}
}

```

OUTPUT:

spinnercomponents

india
china
japan
other

Program no: 17**Aim: Program to apply themes via code from manifest file****XML Code:**

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns: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">
<EditText
android:id="@+id/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:minHeight="48dp"
android:text="avani"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.themes;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}

```


#colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
<color name="colorPrimary">#006064</color>
<color name="color_primary_dark">#00838F</color>
<color name="color_accent">#B2DFDB</color>
<color name="color_text_color_primary">#03A9F4</color>
</resources>
```

#new_style.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
<!-- Base application theme. -->
<style name="Theme.new_style"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
<item name="colorPrimary">@color/colorPrimary</item>
<item name="colorPrimaryDark">@color/color_primary_dark</item>
<item name="colorAccent">@color/color_accent</item>
<item name="android:textColorPrimary">@color/color_text_color_primary</item>
<item name="android:textSize">40dp</item>
</style>
</resources>
```

#values/themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
<!-- Base application theme. -->
<style name="Theme.Themes"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
<item name="colorPrimary">@color/colorPrimary</item>
<item name="colorPrimaryDark">@color/color_primary_dark</item>

<item name="colorAccent">@color/color_accent</item>
<item name="android:textColorPrimary">@color/color_text_color_primary</item>
<item name="android:textSize">40dp</item>
</style>
</resources>
```

#AndroidManifest.xml

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

<item name="colorPrimary">@color/colorPrimary</item>
<item name="colorPrimaryDark">@color/color_primary_dark</item>
<item name="colorAccent">@color/color_accent</item>
<item name="android:textColorPrimary">@color/color_text_color_primary</item>
<item name="android:textSize">40sp</item>
</style>
</resources>

```

OUTPUT:



Program no: 18**Aim: Program to develop application using Fragments****XML Code:**

```
#fragment1.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/material_on_surface_stroke"
    tools:context=".fragment1">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textSize="30dp"
        android:text="fragment 1" />
</RelativeLayout>
```

JAVA Code:

```
package com.example.fragmen;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class fragment1 extends Fragment
{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        BundlesavedInstanceState) {
        return inflater.inflate(R.layout.fragment_fragment1, container, false);
    }
}
```

```
#fragment2.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/teal_200"
    tools:context=".fragment2">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
```

```

        android:textSize="30dp"
        android:text="fragment 2" />
    </RelativeLayout>
#fragment.java
package com.example.fragmen;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class fragment2 extends Fragment
{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_fragment2, container, false);
    }
}
#activity_main.java
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <FrameLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="4"
        android:background="@color/yellow"
        android:id="@+id/framelayout"/>
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

```

```

<Button
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:id="@+id/fragbtn1"
    android:text="fragment1"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="30dp"
    android:layout_marginEnd="30dp"/>
<Button
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:id="@+id/fragbtn2"

    android:text="fragment1"
    android:layout_alignParentBottom="true"
    android:layout_alignParentRight="true"
    android:layout_marginRight="30dp"
    android:layout_marginEnd="30dp"/>
</RelativeLayout>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</LinearLayout>
#MainActivity.java
package com.example.fragmenten;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle
savedInstanceState)super.onCreate(savedInstanceState);
    setContentView (R.layout.activity_main);

```

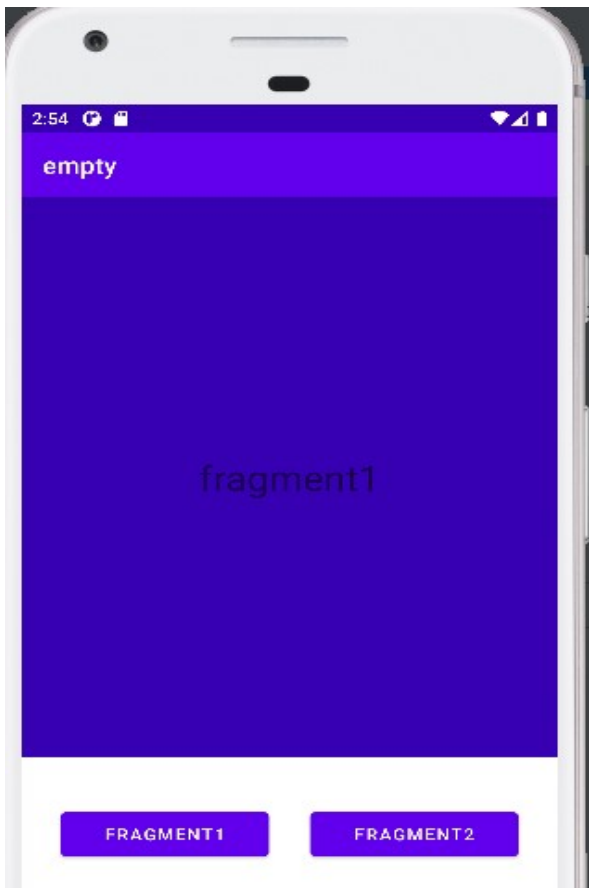
```

Button b1=findViewById(R.id.fragbtn1);
Button b2=findViewById(R.id.fragbtn2);
b1.setOnClickListener(new View.OnClickListener()
{ @Override
public void onClick(View v) {
replaceFragment(new fragment1());
}
});
b2.setOnClickListener(new View.OnClickListener()
{ @Override
public void onClick(View v) {
replaceFragment(new fragment2());
}
});
private void replaceFragment(Fragment fragment)
{
Frag FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();

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

```

OUTPUT:



Program no: 19**Aim: Program to implement Navigation drawer****XML Code:**

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.drawerlayout.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"
android:id="@+id/drawer">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent">
<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" />
</LinearLayout>
<com.google.android.material.navigation.NavigationView
android:layout_width="match_parent"
android:layout_height="match_parent"
android:id="@+id/navigation_view"

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

</androidx.drawerlayout.widget.DrawerLayout>

```

JAVA Code:

```

package com.example.drawernavigation;
import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBarDrawerToggle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.drawerlayout.widget.DrawerLayout;
import android.app.ActionBar;
import android.os.Bundle;

import android.view.MenuItem;
import android.widget.Toast;
import com.google.android.material.navigation.NavigationView;
public class MainActivity extends AppCompatActivity implements
NavigationView.OnNavigationItemSelectedListener
{
    public DrawerLayout drawerLayout;
    public ActionBarDrawerToggle actionBarDrawerToggle;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        drawerLayout = findViewById(R.id.drawer);
        actionBarDrawerToggle = new ActionBarDrawerToggle(this, drawerLayout,
            R.string.nav_open, R.string.nav_close);
        drawerLayout.addDrawerListener(actionBarDrawerToggle);
        actionBarDrawerToggle.syncState();
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
        NavigationView navigationView = findViewById(R.id.navigation_view);
        navigationView.setNavigationItemSelectedListener(this);

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

```



```

@Override
public boolean onNavigationItemSelected(@NonNull MenuItem item)
{
    int id = item.getItemId();
    if (id == R.id.nav_account) {
        Toast.makeText(this, "home", Toast.LENGTH_SHORT).show();
    }
    if (id == R.id.nav_settings) {
        Toast.makeText(this, "settings", Toast.LENGTH_SHORT).show();
    }
    if (id == R.id.nav_logout) {
        Toast.makeText(this, "logout", Toast.LENGTH_SHORT).show();
    }
    return false;
}
}

```

#navigation_menu.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/nav_account"
        android:title="MY Account"/>
    <item
        android:id="@+id/nav_settings"
        android:title="Settings"/>

    <item
        android:id="@+id/nav_logout"
        android:title="logout"/>
</menu>

```

#strings.xml

```

<resources>

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

```

```

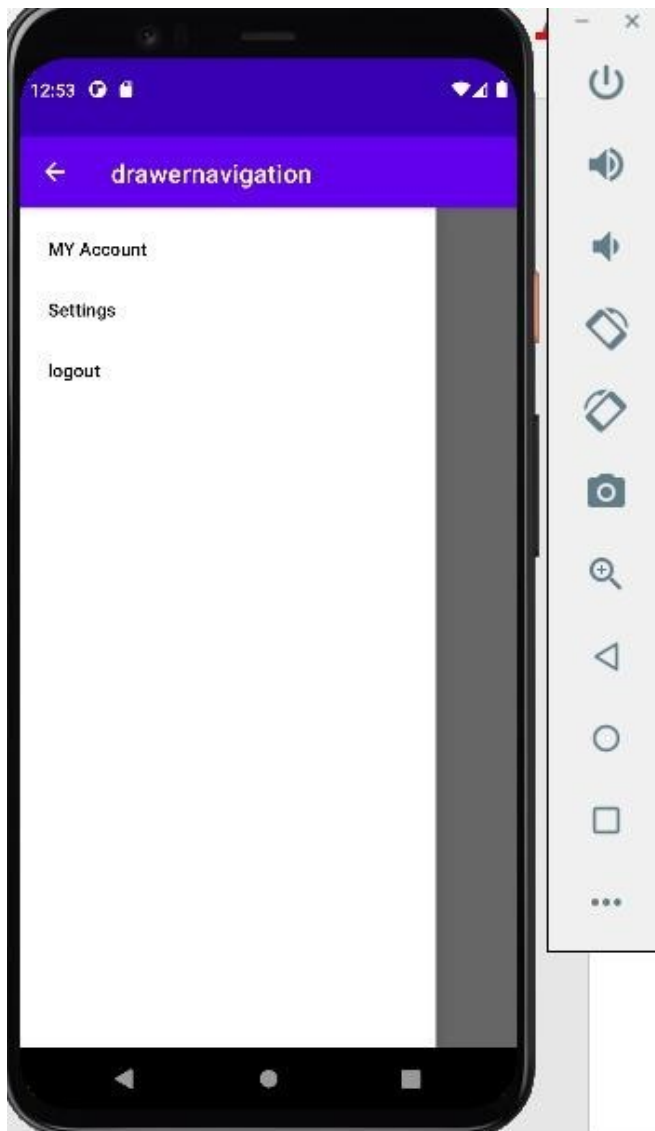
#build.gradle(:app)
plugins {
    id 'com.android.application'
}
android {
    compileSdk 31
    defaultConfig {
        applicationId "com.example.drawernavigation"
        minSdk 21
        targetSdk 31
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
        }
    }

    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
}

dependencies {
    implementation 'androidx.appcompat:appcompat:1.4.1'
    implementation 'com.google.android.material:material:1.5.0'

    implementation 'androidx.constraintlayout:constraintlayout:2.1.3'
    implementation 'androidx.drawerlayout:drawerlayout:1.1.1'
    testImplementation 'junit:junit:4.+'
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'
    implementation "com.google.android.material:material:1.4.1"
}

```

OUTPUT:

Program no: 20**Aim: Program to implement activity life cycle****XML Code:**

```

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

```

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:

```
2022-03-24 15:08:59.421 3198-3198/com.example.activitylifecycle D/lifecycle: onPause invoked
2022-03-24 15:09:00.480 3198-3198/com.example.activitylifecycle D/lifecycle: onStop invoked
2022-03-24 15:09:14.361 3198-3198/com.example.activitylifecycle D/lifecycle: onRestart invoked
2022-03-24 15:09:14.374 3198-3198/com.example.activitylifecycle D/lifecycle: onStart invoked
2022-03-24 15:09:14.388 3198-3198/com.example.activitylifecycle D/lifecycle: onResume invoked
2022-03-24 15:09:17.542 3198-3198/com.example.activitylifecycle D/lifecycle: onPause invoked
2022-03-24 15:09:18.287 3198-3198/com.example.activitylifecycle D/lifecycle: onStop invoked
2022-03-24 15:09:19.282 3198-3198/com.example.activitylifecycle D/lifecycle: onRestart invoked
2022-03-24 15:09:19.286 3198-3198/com.example.activitylifecycle D/lifecycle: onStart invoked
2022-03-24 15:09:19.288 3198-3198/com.example.activitylifecycle D/lifecycle: onResume invoked
2022-03-24 15:09:21.510 3198-3198/com.example.activitylifecycle D/lifecycle: onPause invoked
2022-03-24 15:09:22.560 3198-3198/com.example.activitylifecycle D/lifecycle: onStop invoked
2022-03-24 15:10:18.973 3198-3198/com.example.activitylifecycle D/lifecycle: onRestart invoked
2022-03-24 15:10:18.998 3198-3198/com.example.activitylifecycle D/lifecycle: onStart invoked
2022-03-24 15:10:18.999 3198-3198/com.example.activitylifecycle D/lifecycle: onResume invoked
```



Program no: 21

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

XML Code:

```
<?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"
        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>

```


JAVA Code:

```

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);
        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)
    {
        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();
}
});
}
}
```

DBhelper

```

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;
}
}
}

```

OUTPUT:

db

please enter the details below

anak

8286490

1238

INSERT NEW DATA

UPDATE DATA

DELETE EXISTING DATA

VIEW DATA



db

please enter the details below

anak

8286490

1238

User Entries

Name: anak

Contact: 8286490

Date of Birth: 1238

DELETE EXISTING DATA

VIEW DATA