

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="@i 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, there are two input fields: 'Username' with the text 'admin' entered, and 'Password' with five dots entered. A 'Login' button is positioned below the password field. The form is styled with a light gray background and a dark gray border on the left side.

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;imp
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;TextInputLayoutel,
    e2;Buttonb1;
    @Override
    Protected void onCreate (Bundle saved Instance State)

    {
        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 interface. It features a text input field with the username 'admin' entered. Below it is a password input field with masked characters '*****'. A blue button labeled 'LOGIN' is positioned below the password field. The entire form is set against a light gray background.

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) {

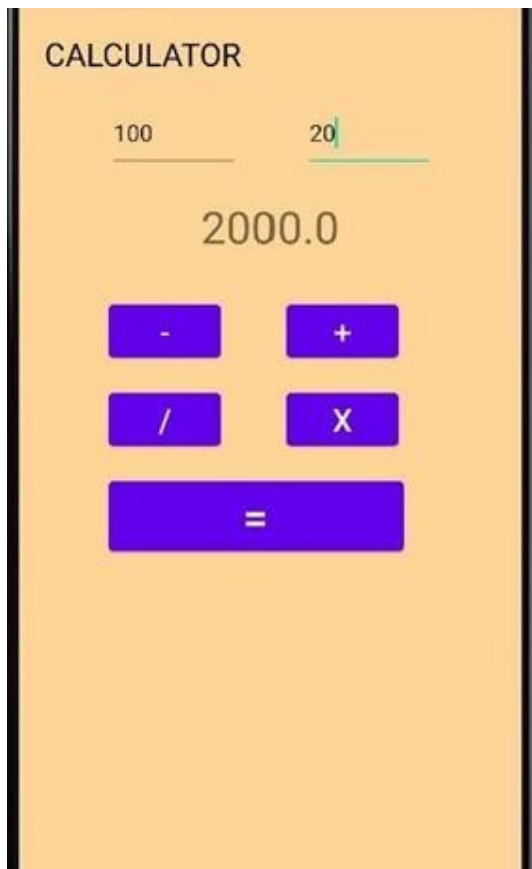
    // get the input numbers
    if (getNumbers()) {
```

```
        // 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. isAllFieldsChecked=CheckAllFields()
//the boolean variable turns to be true then
//only the user must be proceed to the activity2

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

```

```

Public void onClick (View v)
{
    Ui_validation.this.finish();
    System.exit(0);
}
//function which checks all the textfields
//are filled or not by the user.
//when user clicks on the PROCEED button
//this function is triggered.
Private Boolean CheckAllFields()
{
    if(etFirstName.length()==0)
    {
        etFirstName.setError("This field is required");
        return false;
    }

    if (etLastName.length()
    ==
    0)
    {
        etLastName.setError("This field is required");
        return false;
    }
    if (etEmail.length()
    == 0)
    {
        etEmail.setError("Email is required");
        return false;
    }
    if (etPassword.length()
    == 0)
    {
        etPassword.setError("Password is required");
        return false;
    }
    Else if
    (etPassword.length() <8)
    {
        etPassword.setError("Password must be minimum 8 characters");
        return false;
    }
    //after all validation
    return true;
}
}

```


OUTPUT:

The image displays two side-by-side screenshots of a mobile application's registration form. The form consists of four input fields: First Name, Last Name, Email, and Password, each followed by a 'PROCEED' button. In the left screenshot, the 'First Name' field is empty and has a red error message 'This field is required' above it. The 'Email' field is also empty and has a red error message 'Email is required' above it. In the right screenshot, the 'First Name' field contains the text 'Arjun', the 'Last Name' field contains 'pp', and the 'Password' field contains 'Password'. The 'Email' field remains empty with the 'Email is required' error message. The 'PROCEED' buttons are visible at the bottom of each form.

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
        w(R.layout.activity_sp2);
        ActionBar=getSupportActionBar();
        a. setTitle("Display");
        TextView diss=findViewById(R.id.dis);
        TextView diss1=findViewById(R.id.dis1);

        Intent i=getIntent();
        String name = i.getStringExtra("Name");
        String email = i.getStringExtra("Email");
        String phone=i. 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>

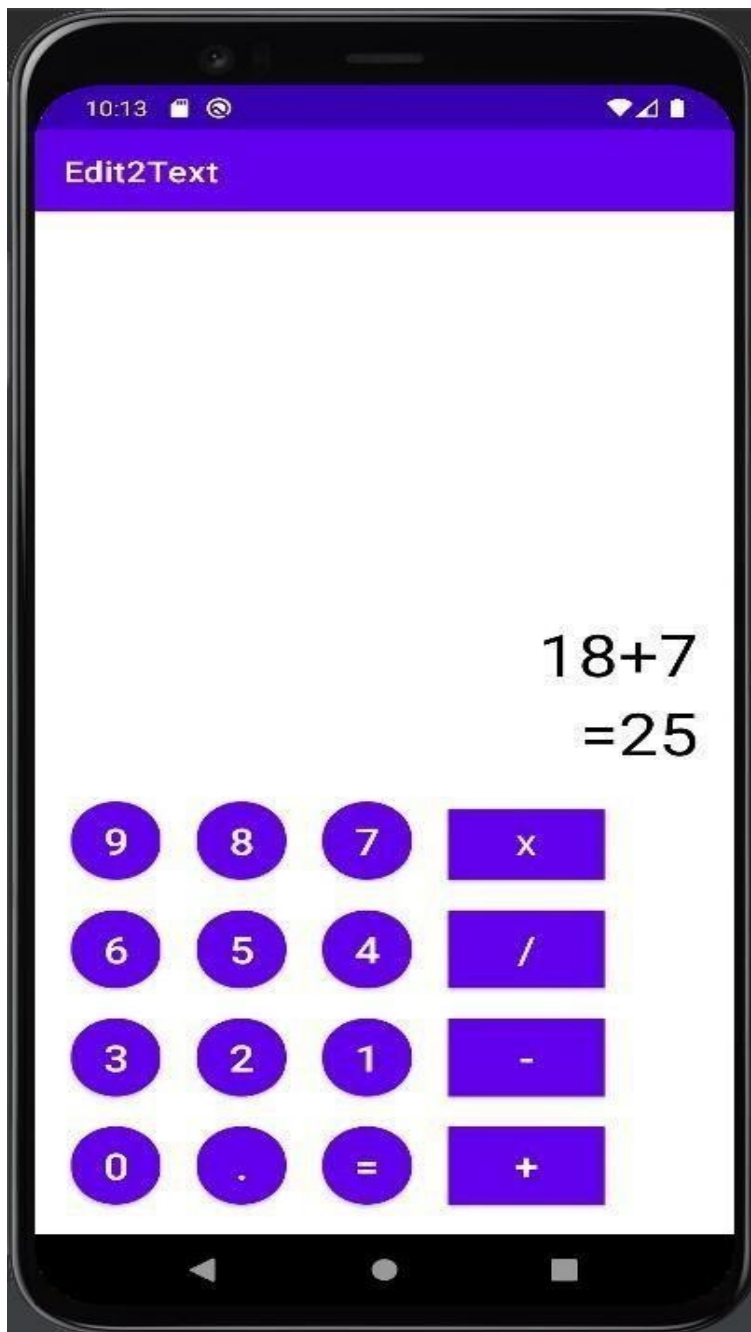
```

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.
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:

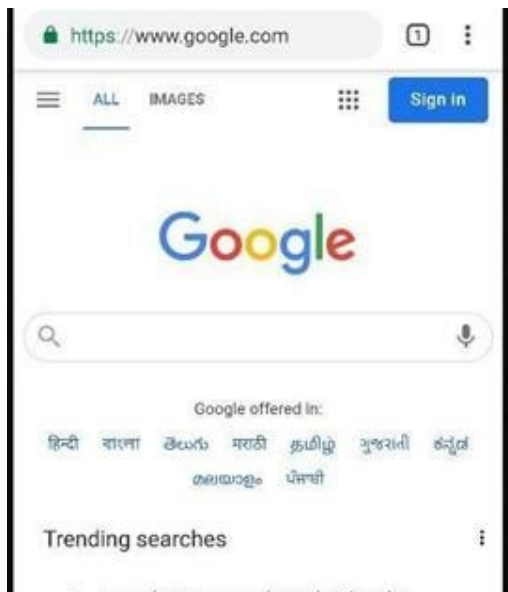
```
packagecom.example.explicit;
importandroidx.appcompat.app.ActionBar;
importandroidx.appcompat.app.AppCompatActivity;
importandroid.content.Intent;
importandroid.net.Uri;
importandroid.net.UriQuerySanitizer;
importandroid.os.Bundle;
importandroid.view.View;
importandroid.widget.Button;
public class 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:

```

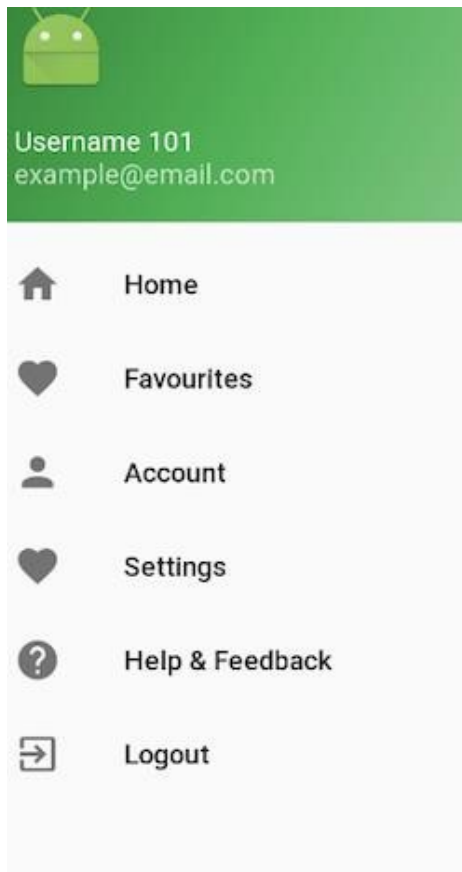
package com.example.Menu;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;
public class menu_bar extends AppCompatActivity
{
    @Override
    protected 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);
    }
}
#fragmnet2.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>

```

```

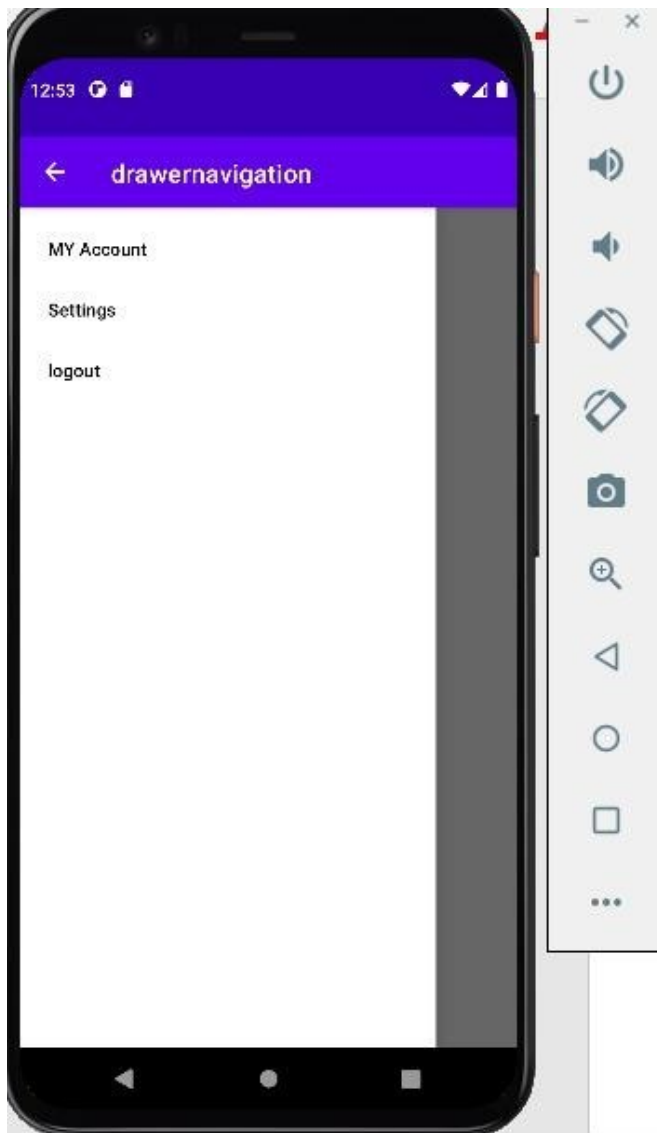
#build.gradle(:app)
plugins {
    id 'com.android.application'
}
android {
    compileSdk 31
    defaultConfig {
        applicationId "com.example.drawernavigation"
        minSdk 21
        targetSdk 31
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }
    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");
    }
}

```

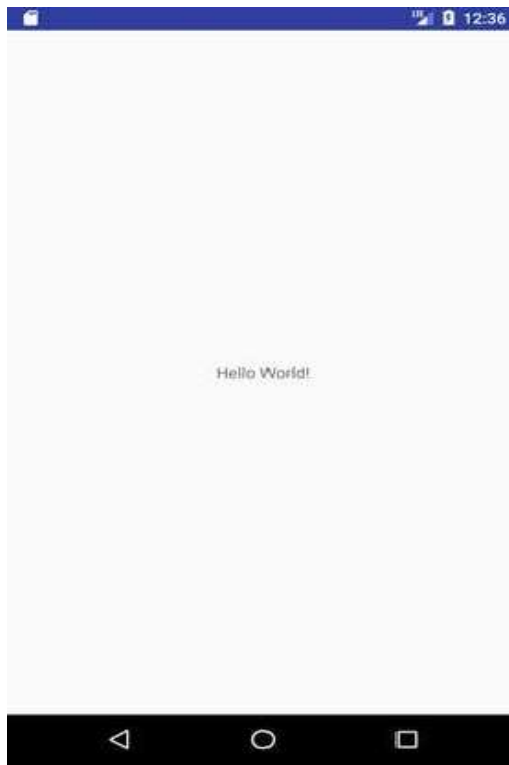
```
@Override
protected void onResume()
{
    super.onResume();
    Log.d("lifecycle","onResume invoked");
}

@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:

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:

Enter ID

Name

Address

Phone

Email

INSERT DELETE UPDATE