

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

ASHTAMI PRASAD

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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
AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**



CERTIFICATE

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **ASHTAMI PRASAD (Reg.No:AJC20MCA-2029)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

Ms. Navya Mol K T
Staff In-Charge

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Program no:1

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

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="@drawable/primary_screen"
    tools:context=".LoginActivity">

    <ImageView
        android:id="@+id/avatar"
        android:layout_width="120dp"
        android:layout_height="120dp"
        android:layout_marginTop="10dp"
        android:contentDescription="@string/login_image"
        android:src="@drawable/avatar"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" /

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

```

android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:text="@string/login"
android:textColor="@color/black"
android:textSize="30sp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/avatar" />

```

```

<RelativeLayout
    android:id="@+id/loginLoginLayout"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="5dp"
    android:layout_marginEnd="5dp"
    android:background="@drawable/account_creation"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="1.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/loginText"
    app:layout_constraintVertical_bias="0.098">

```

```

<EditText
    android:id="@+id/loginUsername"
    android:layout_width="match_parent"
    android:layout_height="40dp"
    android:layout_marginTop="40dp"
    android:autofillHints=""

```

```

android:layout_alignParentTop="true"
android:hint="@string/username"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:inputType="textEmailAddress"
android:padding="10dp"
android:layout_marginEnd="20dp"
android:layout_marginStart="20dp"
android:textColor="@color/white"
android:textColorHint="@color/white" />

```

```

<EditText
android:id="@+id/loginPassword"
android:layout_width="match_parent"
android:layout_height="40dp"
android:layout_below="@+id/loginUsername"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginTop="20dp"
android:layout_marginEnd="20dp"
android:layout_marginStart="20dp"
android:hint="@string/password"
android:inputType="textPassword"
android:padding="10dp"
android:textColor="@color/white"
android:textColorHint="@color/white" />

```

```

<TextView
android:id="@+id/forgotPasswordText"

```

```

android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
android:text="@string/forgot_password"
android:clickable="true"
android:textSize="20sp"
android:layout_marginStart="30dp"
android:layout_alignParentStart="true"
android:layout_below="@+id/loginPassword"/>

```

```

<com.blure.complexview.ComplexView
android:id="@+id/shadowLoginButton"
android:layout_width="match_parent"
android:layout_height="wrap_content"
app:radius="20dp"
app:shadow="true"
app:shadowAlpha="100"
app:shadowColor="#2962FF"
android:padding="10dp"
android:layout_below="@+id/forgotPasswordText"
android:layout_marginTop="30dp"
app:shadowSpread="2">

```

```

<Button
android:id="@+id/loginButton"
android:layout_width="match_parent"
android:layout_height="46dp"
android:background="@drawable/password_reset_buttons"
android:text="@string/sign_in" />

```



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

Java Code:

```
import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

public class LoginActivity extends AppCompatActivity {

    EditTextloginName, loginPwd;

    Button login;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_login);
loginName = findViewById(R.id.loginUsername);
loginPwd = findViewById(R.id.loginPassword);
login = findViewById(R.id.loginButton);
login.setOnClickListener(new View.OnClickListener() {

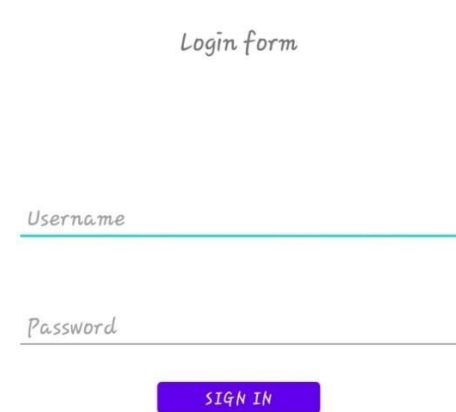
    @Override

    public void onClick(View v) {

        String uName, passwd;
```

```
uName = loginName.getText().toString();  
    passwd = loginPwd.getText().toString();  
    Toast.makeText(LoginActivity.this"Welcome", Toast.LENGTH_SHORT).show();  
    }  
    });  
    }  
}
```

Output:



Program no:2

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

XML Code:

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/txt1"

android:layout_width="182dp"

android:layout_height="54dp"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintHorizontal_bias="0.497"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toBottomOf="@+id/btn1"

app:layout_constraintVertical_bias="0.356" />

<EditText

android:id="@+id/edt1"

android:layout_width="300dp"
```

```

android:layout_height="40dp"
android:layout_marginTop="136dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.495"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.85" />

<Button
    android:id="@+id/btn1"
    android:layout_width="122dp"
    android:layout_height="43dp"
    android:layout_marginTop="48dp"
    android:text="Button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/edt1" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.textview;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

```

```

import android.widget.Toast;

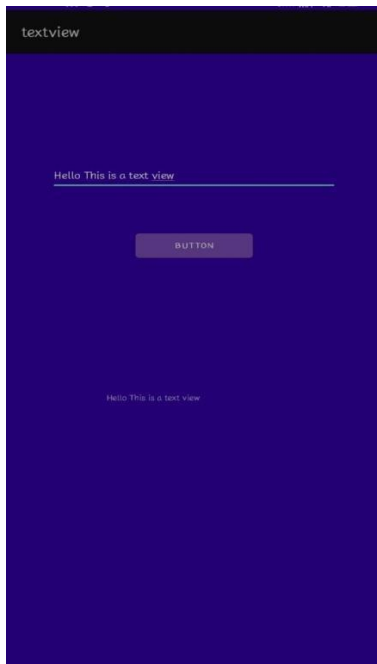
public class MainActivity extends AppCompatActivity {

    Button b1;
    EditText e1;
    TextView t1;

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

        e1 = findViewById(R.id.edt1);
        b1=findViewById(R.id.btn1);
        t1=findViewById(R.id.txt1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String value=e1.getText().toString();
                t1.setText(value);
            }
        });
    }
}

```

Output:

Program no:3

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

XML Code:

```
<?xml version="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:orientation="vertical"
android:background="#ecdaf2"
tools:context=".MainActivity">
```

```
<TextView
android:id="@+id/txt1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
android:padding="20dp"
android:textAlignment="center"
android:textSize="20sp"
android:text="Login form"/>
```

```
<EditText
android:id="@+id/edt1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:layout_marginTop="100dp"
android:paddingStart="10dp"
android:hint="Username" />
<TextView
    android:id="@+id/t1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:visibility="gone"
    android:padding="10dp"
    android:text="*Please enter username"
    android:textColor="@color/red"/>
```

```
<EditText
    android:id="@+id/edt2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:paddingStart="10dp"
    android:hint="Password" />
```

```
<TextView
    android:id="@+id/t2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:visibility="gone"
    android:padding="10dp"
    android:text="*Please enter password"
    android:textColor="@color/red"/>
```

```
<Button
```



```

        android:id="@+id/btn1"
        android:layout_width="150dp"
        android:layout_height="40dp"
        android:layout_gravity="center"
        android:text="Sign In"
        android:layout_marginTop="20dp"
    />
</LinearLayout>

```

Java Code:

```

package com.example.loginformvalidation;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText e1,e2;
    TextView t1, t2;
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        e1=findViewById(R.id.edt1);
        e2=findViewById(R.id.edt2);
        t1 = findViewById(R.id.t1);
    }
}

```

```

t2 = findViewById(R.id.t2);
b1=findViewById(R.id.btn1);
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String username,password;
        username=e1.getText().toString();
        password=e2.getText().toString();
        if (username.isEmpty()){
            t1.setVisibility(View.VISIBLE);
            Toast.makeText(MainActivity.this, "Username is empty", Toast.LENGTH_SHORT).show();
        }
        else if (password.isEmpty()){
            t2.setVisibility(View.VISIBLE);
            Toast.makeText(MainActivity.this, "Password is empty", Toast.LENGTH_SHORT).show();
        }else
            Toast.makeText(MainActivity.this, "Login success", Toast.LENGTH_SHORT).show();
    }
});
}
}

```

Output:

Program no:4

Aim: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"
    tools:context=".MainActivity">
```

```
<TextView
    android:id="@+id/txt1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="2 X 5 + 10"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:padding="20dp"/>
```

```
<TextView
    android:id="@+id/txt2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="20"
    app:layout_constraintStart_toStartOf="parent"
```

```

android:gravity="end"
app:layout_constraintBottom_toTopOf="@+id/grid"
android:layout_marginTop="60dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txt1"
android:padding="20dp"/>

```

```

<GridLayout
    android:id="@+id/grid"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:rowCount="3"
    android:columnCount="4"
    app:layout_constraintBottom_toBottomOf="parent">

```

```

<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="C"/>

```

```

<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="Back"/>

```

```

<Button
    android:layout_height="80dp"

```

```
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="%"/>
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="/" />
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:background="@drawable/button_number"
android:layout_margin="7dp"
android:text="7"/>
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:background="@drawable/button_number"
android:text="8"/>
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:background="@drawable/button_number"
android:text="9"/>
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
```

```
android:layout_margin="7dp"
```

```
android:text="X"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="4"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="5"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="6"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:layout_margin="7dp"
```

```
android:text="-"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

```
android:layout_width="wrap_content"  
android:background="@drawable/button_number"  
android:layout_margin="7dp"  
android:text="1"/>
```

```
<Button  
android:layout_height="80dp"  
android:layout_width="wrap_content"  
android:background="@drawable/button_number"  
android:layout_margin="7dp"  
android:text="2"/>
```

```
<Button  
android:layout_height="80dp"  
android:layout_width="wrap_content"  
android:background="@drawable/button_number"  
android:layout_margin="7dp"  
android:text="3"/>
```

```
<Button  
android:layout_height="80dp"  
android:layout_width="wrap_content"  
android:layout_margin="7dp"  
android:text="+"/>
```

```
<Button  
android:layout_height="80dp"  
android:layout_width="wrap_content"  
android:layout_margin="7dp"  
android:text="--"/>
```

```
<Button  
android:layout_height="80dp"
```



```

    android:layout_width="wrap_content"
    android:background="@drawable/button_number"
    android:layout_margin="7dp"
    android:text="0"/>
<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="."/>
<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="="/>
</GridLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    double input1 = 0, input2 = 0;

    TextView edt1;

```

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

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

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

@Override

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

    button0 = (Button) findViewById(R.id.button0);
    button1 = (Button) findViewById(R.id.button1);
    button2 = (Button) findViewById(R.id.button2);
    button3 = (Button) findViewById(R.id.button3);
    button4 = (Button) findViewById(R.id.button4);
    button5 = (Button) findViewById(R.id.button5);
    button6 = (Button) findViewById(R.id.button6);
    button7 = (Button) findViewById(R.id.button7);
    button8 = (Button) findViewById(R.id.button8);
    button9 = (Button) findViewById(R.id.button9);
    buttonDot = (Button) findViewById(R.id.buttonDot);
    buttonAdd = (Button) findViewById(R.id.buttonadd);
    buttonSub = (Button) findViewById(R.id.buttonsub);
    buttonMul = (Button) findViewById(R.id.buttonmul);
    buttonDivision = (Button) findViewById(R.id.buttondiv);
    Remainder = (Button) findViewById(R.id.Remainder);
    buttonDel = (Button) findViewById(R.id.buttonDel);
    buttonEqual = (Button) findViewById(R.id.buttoneq1);

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

```
button1.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "1");  
    }  
});
```

```
button2.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "2");  
    }  
});
```

```
button3.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "3");  
    }  
});
```

```
button4.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "4");  
    }  
});
```

```
button5.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "5");  
    }  
});
```

```
button6.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "6");  
    }  
});
```

```
button7.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "7");  
    }  
});
```

```
button8.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "8");  
    }  
});
```

```
button9.setOnClickListener(new View.OnClickListener() {
```

```

@Override

public void onClick(View v) {
    edt1.setText(edt1.getText() + "9");
}

});

button0.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {
    edt1.setText(edt1.getText() + "0");
}

});

```

```

buttonAdd.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {
    if (edt1.getText().length() != 0) {
        input1 = Float.parseFloat(edt1.getText() + "");
        Addition = true;
        decimal = false;
        edt1.setText(null);
    }
}

});

```

```

buttonSub.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {
    if (edt1.getText().length() != 0) {

```

```

        input1 = Float.parseFloat(edt1.getText() + "");
        Subtract = true;
        decimal = false;
        edt1.setText(null);
    }
}
));

```

```

buttonMul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Multiplication = true;
            decimal = false;
            edt1.setText(null);
        }
    }
});

```

```

buttonDivision.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Division = true;
            decimal = false;
            edt1.setText(null);
        }
    }
});

```

```

    }
});

```

```

Remainder.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
mRemainder = true;
            decimal = false;
            edt1.setText(null);
        }
    }
});

```

```

buttonEqual.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (Addition || Subtract || Multiplication || Division || mRemainder) {
            input2 = Float.parseFloat(edt1.getText() + "");
        }

        if (Addition) {

            edt1.setText(input1 + input2 + "");
            Addition = false;
        }

        if (Subtract) {

```

```

        edt1.setText(input1 - input2 + "");
        Subtract = false;
    }

    if (Multiplication) {
        edt1.setText(input1 * input2 + "");
        Multiplication = false;
    }

    if (Division) {
        edt1.setText(input1 / input2 + "");
        Division = false;
    }

    if (mRemainder) {
        edt1.setText(input1 % input2 + "");
mRemainder = false;
    }
}

});

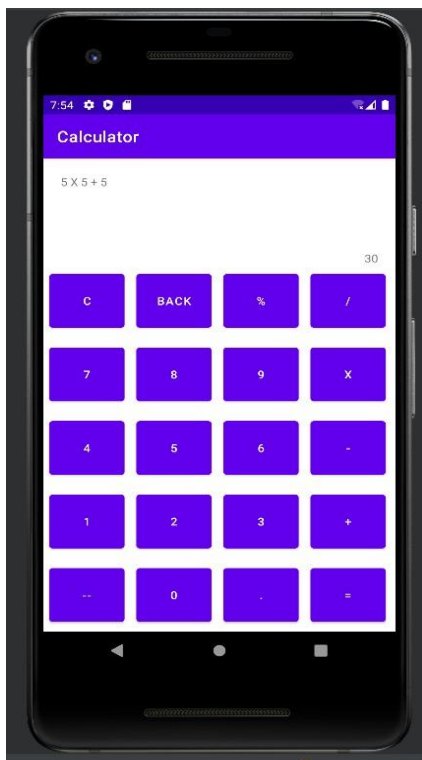
buttonDel.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText("");
        input1 = 0.0;
        input2 = 0.0;
    }
});

buttonDot.setOnClickListener(new View.OnClickListener() {
    @Override

```



```
public void onClick(View v) {  
    if (decimal) {  
        //do nothing or you can show the error  
    } else {  
        edt1.setText(edt1.getText() + ".");  
        decimal = true;  
    }  
}  
});  
}  
public void onClick(View view) {  
}  
}
```

Output:

Program no:5**Aim:**Implement validations on various UI controls**XML Code:**

```

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/txt1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Validation on UI Components"

app:layout_constraintLeft_toLeftOf="parent"

android:textSize="25sp"

app:layout_constraintRight_toRightOf="parent"

android:layout_marginTop="30dp"

app:layout_constraintTop_toTopOf="parent" />

<EditText

android:id="@+id/edt1"

android:layout_width="match_parent"

android:layout_height="wrap_content"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintTop_toBottomOf="@+id/txt1"

```

```

android:padding="20dp"
android:layout_marginTop="100dp"
android:hint="Text 1"
android:layout_marginHorizontal="10dp"/>
<EditText
android:id="@+id/edt2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/edt1"
android:padding="20dp"
android:layout_marginTop="20dp"
android:hint="Text 2"
android:layout_marginHorizontal="10dp"/>
<EditText
android:id="@+id/edt3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/edt2"
android:padding="20dp"
android:layout_marginTop="20dp"
android:hint="Text 3"
android:layout_marginHorizontal="10dp"/>

<Button
android:id="@+id/btn1"

```

```

android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/edt3"
android:layout_marginTop="50dp"
android:text="Submit"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.validation;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    EditText e1, e2, e3;

    Button b1;

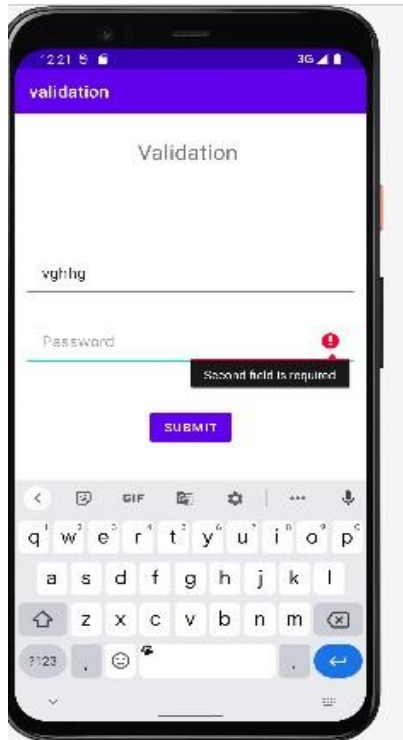
    @Override

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

        e1 = findViewById(R.id.edt1);
        e2 = findViewById(R.id.edt2);
        e3 = findViewById(R.id.edt3);
        b1 = findViewById(R.id.btn1);
    }
}

```

```
b1.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        String a, b, c;  
        a = e1.getText().toString();  
        b = e2.getText().toString();  
        c = e3.getText().toString();  
  
        if(a.isEmpty()){  
            e1.setError("First field is required");  
        }else if(b.isEmpty()){  
            e2.setError("Second field is required");  
        }else if(c.isEmpty()){  
            e3.setError("Third field is required");  
        }  
    }  
});  
}  
}
```

Output:

Program no:6

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

XML Code:

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/txt1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Registration"

android:layout_marginTop="50dp"

android:textSize="25sp"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />

<EditText

android:id="@+id/edt1"

android:layout_width="match_parent"
```

```

android:layout_height="wrap_content"
android:layout_marginTop="100dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
android:paddingStart="10dp"
app:layout_constraintTop_toBottomOf="@+id/txt1"
android:hint="Name"/>

<EditText
android:id="@+id/edt2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
android:paddingStart="10dp"
app:layout_constraintTop_toBottomOf="@+id/edt1"
android:hint="Email"/>

<EditText
android:id="@+id/edt3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="10dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
android:paddingStart="10dp"
app:layout_constraintTop_toBottomOf="@+id/edt2"
android:hint="Password"/>

<Button

```



```

android:layout_width="wrap_content"
android:id="@+id/btn1"
android:layout_height="wrap_content"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/edt3"
android:layout_marginTop="30dp"
android:text="Register"/>
</androidx.constraintlayout.widget.ConstraintLayout>
.constraintlayout.widget.ConstraintLayout>

```

#activity2.xml

```

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity2">

<TextView

android:id="@+id/txt1"

android:layout_width="match_parent"

android:layout_height="wrap_content"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintTop_toTopOf="parent"

android:layout_marginTop="70dp"

```

```

android:layout_marginHorizontal="20dp"/>
<TextView
    android:id="@+id/txt2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txt1"
    android:layout_marginTop="70dp"
    android:layout_marginHorizontal="20dp"/>

<TextView
    android:id="@+id/txt3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txt2"
    android:layout_marginTop="70dp"
    android:layout_marginHorizontal="20dp"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.sharedpref;

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.Toast;
public class MainActivity extends AppCompatActivity {

    EditText e1, e2, e3;

    Button b1;

    @Override

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

        e1 = findViewById(R.id.edt1);
        e2 = findViewById(R.id.edt2);
        e3 = findViewById(R.id.edt3);
        b1 = findViewById(R.id.btn1);
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String a, b, c;

        a = e1.getText().toString();
        b = e2.getText().toString();
        c = e3.getText().toString();

        SharedPreferences sharedPreferences = getSharedPreferences("myKey", MODE_PRIVATE);
        SharedPreferences.Editor editor = sharedPreferences.edit();
        editor.putString("name", a);
        editor.putString("email", b);
        editor.putString("password", c);
        editor.apply();
    }
}
}

```

```

Intent intent = new Intent(MainActivity.this, MainActivity2.class);
startActivity(intent);
    }
});

}
}

```

#mainactivity2.java

```

package com.example.sharedpref;
import androidx.appcompat.app.AppCompatActivity;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity2 extends AppCompatActivity {

    TextView t1, t2, t3;

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

        t1 = findViewById(R.id.txt1);
        t2 = findViewById(R.id.txt2);
        t3 = findViewById(R.id.txt3);

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

```

```

String name, email, password;

name = "Name: "+sharedPreferences.getString("name", "");
email = "Email: "+sharedPreferences.getString("email", "");
password = "Password: "+sharedPreferences.getString("password", "");

t1.setText(name);
t2.setText(email);
t3.setText(password);
}
}

```

Output:

The screenshot displays an Android application interface for user registration. At the top, there are two blue horizontal bars, each containing the text "shared pref". Below these, the word "Registration" is centered. To the right of "Registration", the text "Name: ashtami" is displayed. Below this, the text "Email: ashtami@gmail.com" is shown. Further down, the text "Password: ghjju" is visible. The registration form consists of three input fields: the first contains "ashtami", the second contains "ashtami@gmail.com", and the third contains "ghjju". A blue button labeled "REGISTER" is positioned below the input fields. At the bottom of the screen, there are two horizontal lines.

Program no:7

Aim:Design a simple Calculator using GridLayout and Cascaded LinearLayout

XML Code:

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

tools:context=".MainActivity">
```

```
<TextView

android:id="@+id/txt1"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:text="2 X 5 + 10"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintTop_toTopOf="parent"

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

```
<TextView

android:id="@+id/txt2"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:text="20"

app:layout_constraintStart_toStartOf="parent"
```

```

android:gravity="end"
app:layout_constraintBottom_toTopOf="@+id/grid"
android:layout_marginTop="60dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txt1"
android:padding="20dp"/>

```

```

<GridLayout
    android:id="@+id/grid"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:rowCount="3"
    android:columnCount="4"
    app:layout_constraintBottom_toBottomOf="parent">

```

```

<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="C"/>

```

```

<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="Back"/>

```

```

<Button
    android:layout_height="80dp"

```

```
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="%"/>
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="/" />
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:background="@drawable/button_number"
android:layout_margin="7dp"
android:text="7" />
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:background="@drawable/button_number"
android:text="8" />
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:background="@drawable/button_number"
android:text="9" />
<Button
android:layout_height="80dp"
android:layout_width="wrap_content"
```



```
android:layout_margin="7dp"
```

```
android:text="X"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="4"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="5"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:background="@drawable/button_number"
```

```
android:layout_margin="7dp"
```

```
android:text="6"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

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

```
android:layout_margin="7dp"
```

```
android:text="-"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

```
android:layout_width="wrap_content"
android:background="@drawable/button_number"
android:layout_margin="7dp"
android:text="1"/>
```

```
<Button
```

```
android:layout_height="80dp"
android:layout_width="wrap_content"
android:background="@drawable/button_number"
android:layout_margin="7dp"
android:text="2"/>
```

```
<Button
```

```
android:layout_height="80dp"
android:layout_width="wrap_content"
android:background="@drawable/button_number"
android:layout_margin="7dp"
android:text="3"/>
```

```
<Button
```

```
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="+"/>
```

```
<Button
```

```
android:layout_height="80dp"
android:layout_width="wrap_content"
android:layout_margin="7dp"
android:text="--"/>
```

```
<Button
```

```
android:layout_height="80dp"
```

```

    android:layout_width="wrap_content"
    android:background="@drawable/button_number"
    android:layout_margin="7dp"
    android:text="0"/>
<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text="."/>
<Button
    android:layout_height="80dp"
    android:layout_width="wrap_content"
    android:layout_margin="7dp"
    android:text=""/>
</GridLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.cal;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

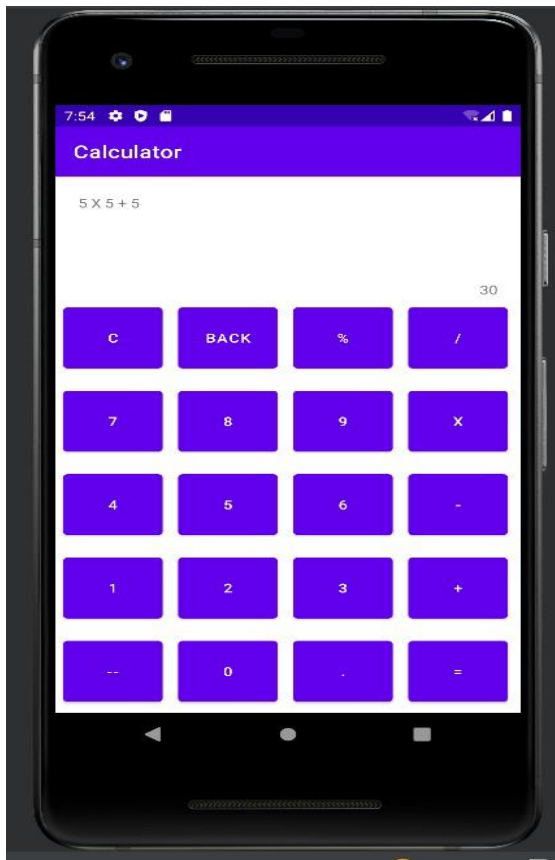
public class MainActivity extends AppCompatActivity {

    @Override

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

```

Output:



Program no:8

Aim:Create a facebook page using relative layout set properties

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:background="@color/blue"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/t1"
        android:layout_width="264dp"
        android:layout_height="40dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:textColor="@color/white"
        android:layout_alignParentEnd="true"
        android:layout_marginTop="50dp"
        android:text="FACEBOOK"
        android:textAlignment="center"
        android:textSize="40dp" />

    <EditText
        android:id="@+id/ed1"
```

```

android:layout_width="match_parent"
android:layout_height="50dp"
android:layout_below="@+id/t1"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:layout_marginHorizontal="40dp"
android:layout_marginTop="150dp"
android:textColor="@color/white"
android:textColorHint="@color/white"
android:hint="Username"
android:paddingStart="10px" />
<EditText
android:id="@+id/ed2"
android:layout_width="match_parent"
android:layout_height="50dp"
android:layout_below="@+id/ed1"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:textColor="@color/white"
android:textColorHint="@color/white"
android:layout_marginHorizontal="40dp"
android:layout_marginTop="50dp"
android:hint="Password"
android:paddingStart="10px" />
<Button
android:id="@+id/btn1"
android:layout_width="334dp"

```

```

android:layout_height="50dp"
android:layout_below="@+id/ed2"
android:layout_marginTop="31dp"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:background="@color/purple_700"
android:layout_marginHorizontal="400px"
android:text="SignIn"/>
<Button
android:id="@+id/btn2"
android:layout_width="match_parent"
android:layout_height="50dp"
android:layout_below="@+id/btn1"
android:layout_marginTop="100dp"
android:background="@color/green"
android:text="Dont have an account? Register here"
android:layout_marginHorizontal="20dp"

/>
</RelativeLayout>

```

Java Code:

```

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override

```

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

Output:

Program no:9

Aim:Develop an application that toggles image using FrameLayout

XML Code:

```
<?xml version="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/teal_700"

tools:context=".MainActivity">

<ImageView

android:id="@+id/image2"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:src="@drawable/image2"

android:visibility="gone"/>

<ImageView

android:id="@+id/image1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:src="@drawable/image1"/>
```

```
</FrameLayout>
```

Java Code:

```
package com.example.frame_layout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    ImageView img1,img2;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        img1 =findViewById(R.id.image1);

        img2 =findViewById(R.id.image2);

        img1.setOnClickListener(this);

        img2.setOnClickListener(this);

    }

    public void onClick(View v)

    {

        int id=v.getId();

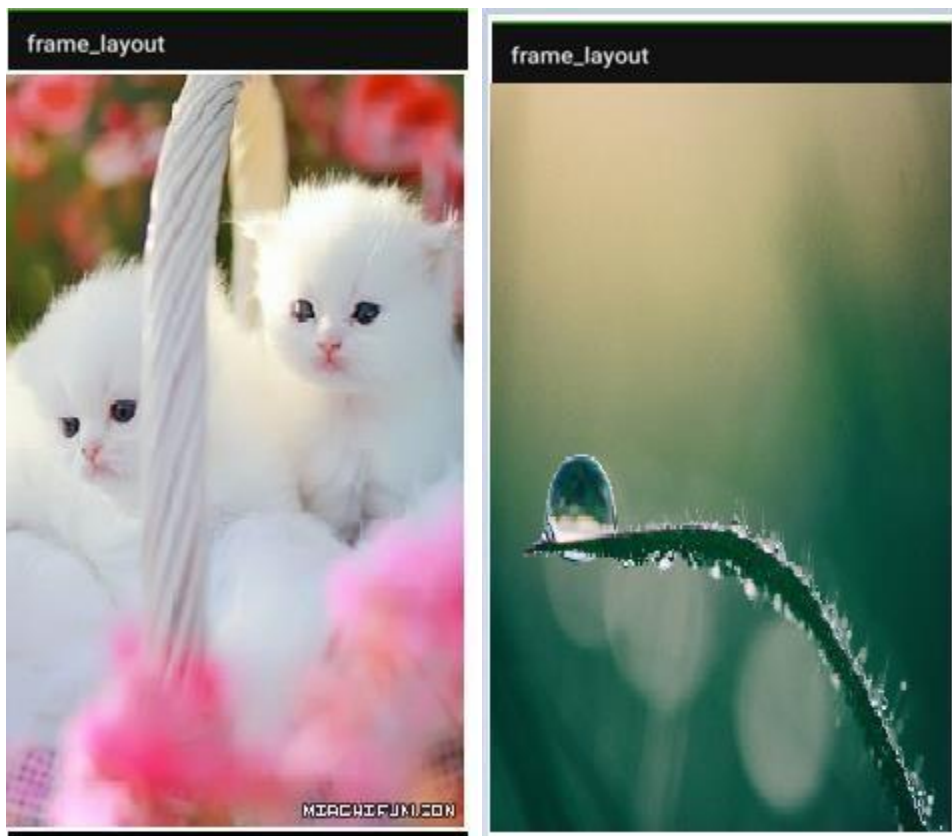
        switch (id){

            case R.id.image1:

                img1.setVisibility(View.GONE);

            
```

```
img2.setVisibility(View.VISIBLE);  
  
break;  
  
case R.id.image2:  
  
img1.setVisibility(View.VISIBLE);  
  
img2.setVisibility(View.GONE);  
  
break;  
  
}  
  
}  
  
}
```

Output:

Program no:10**Aim:**Implement Adapters and perform exception handling**XML Code:**

```

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

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

android:background="@color/purple_500"

tools:context=".MainActivity">

<TextView

android:id="@+id/txt1"

android:layout_width="match_parent"

android:padding="20dp"

android:textAlignment="center"

android:layout_marginHorizontal="10dp"

android:layout_height="wrap_content"

android:textSize="30sp"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintTop_toTopOf="parent"

android:layout_marginTop="100dp"

android:text="EXCEPTION" />

```

```

<EditText
    android:id="@+id/edt1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="20dp"
    android:layout_marginHorizontal="20dp"
    android:hint="Enter first number"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txt1"
    android:layout_marginTop="100dp"/>

```

```

<EditText
    android:id="@+id/edt2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="20dp"
    android:hint="Enter second number"
    android:layout_marginHorizontal="20dp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/edt1"
    android:layout_marginTop="10dp"/>

```

```

<Button
    android:id="@+id/btn1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Divide"

```

```

app:layout_constraintTop_toBottomOf="@+id/edt2"
android:layout_marginTop="30dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"/>
<TextView
android:id="@+id/txt2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="20dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@+id/btn1"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.exceptionhandling;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    EditText e1, e2;

    Button b1;

    TextView t1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

```

```
super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

e1 = findViewById(R.id.edt1);
e2 = findViewById(R.id.edt2);
b1 = findViewById(R.id.btn1);
t1 = findViewById(R.id.txt2);
b1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String a, b;

        int c, d;

        a = e1.getText().toString();

        b = e2.getText().toString();

try{

        int res = Integer.parseInt(a)/Integer.parseInt(b);

        t1.setText(res);

}catch(Exception e){

        t1.setText(e.toString());

        }

        }

    });

}
```

Output:

```
exceptionhandling
```

EXCEPTION

/

.

DIVIDE

java.lang.NumberFormatException: For input string: ""

Program no:11

Aim:Implement Intent to navigate between multiple activities

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayoutxmlns:android="http://schemas.android.c
om/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:background="@color/teal_200"

android:layout_height="match_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/txt1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Activity 1"

app:layout_constraintLeft_toLeftOf="parent"

android:layout_marginTop="50dp"

android:textSize="30sp"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />

<Button

android:id="@+id/btn1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Next Activity"
```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@id/txt1"
app:layout_constraintBottom_toBottomOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

#activity_main2.xml

```

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.c
om/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=".MainActivity2">

<TextView

android:id="@+id/txt2"

android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textSize="30sp"
android:text="Activity 2"

app:layout_constraintLeft_toLeftOf="parent"
android:layout_marginTop="50dp"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />

<Button

```

```

android:id="@+id/btn2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Previous Activity"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toBottomOf="@id/txt2"
app:layout_constraintBottom_toBottomOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

Java Code:

```

package com.example.intent;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    Button b1;

    @Override

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

        b1 = findViewById(R.id.btn1);

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

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

```

```

startActivity(intent);

        }

    });

}

}

#Mainactivity2

package com.example.intent;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity2 extends AppCompatActivity {

    Button b1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main2);

        b1 = findViewById(R.id.btn2);

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

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

startActivity(intent);

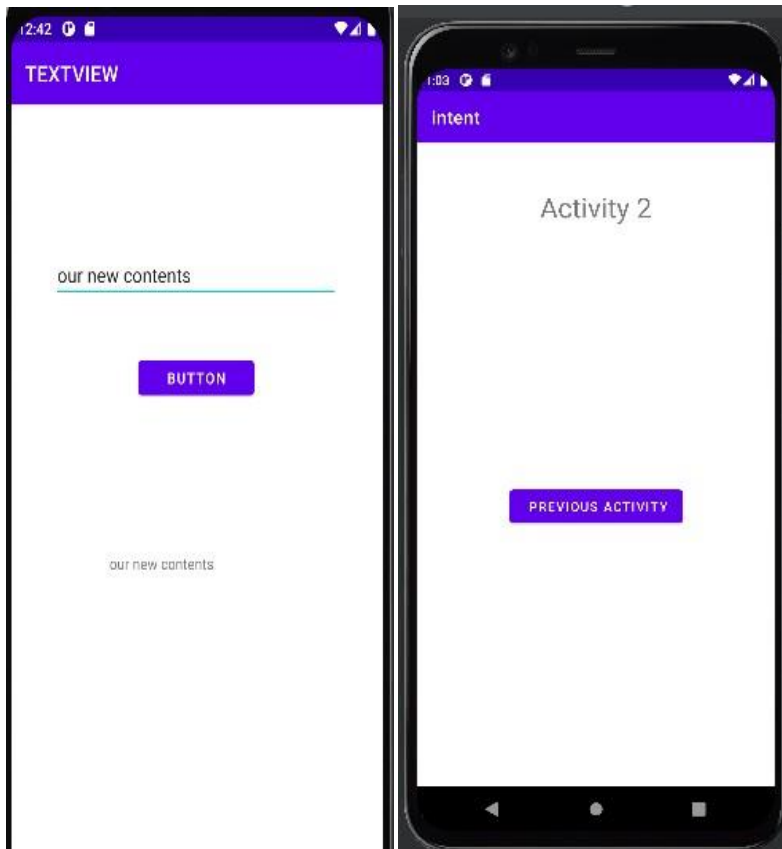
            }

        });

    }

```

```
}
```

Output:

Program no:12

Aim:Develop an application that works with implicit intents

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayoutxmlns:android="http://schemas.android.c
om/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="#fba9dc"

tools:context=".MainActivity">

<Button

android:id="@+id/btn1"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

app:layout_constraintEnd_toEndOf="parent"

app:layout_constraintStart_toStartOf="parent"

app:layout_constraintTop_toTopOf="parent"

app:layout_constraintBottom_toBottomOf="parent"

android:text="Button"

/>

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

Java Code:

```

package com.example.explicit;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.net.Uri;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    Button b1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

        b1=findViewById(R.id.btn1);

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Intent b=new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com"));

startActivity(b);

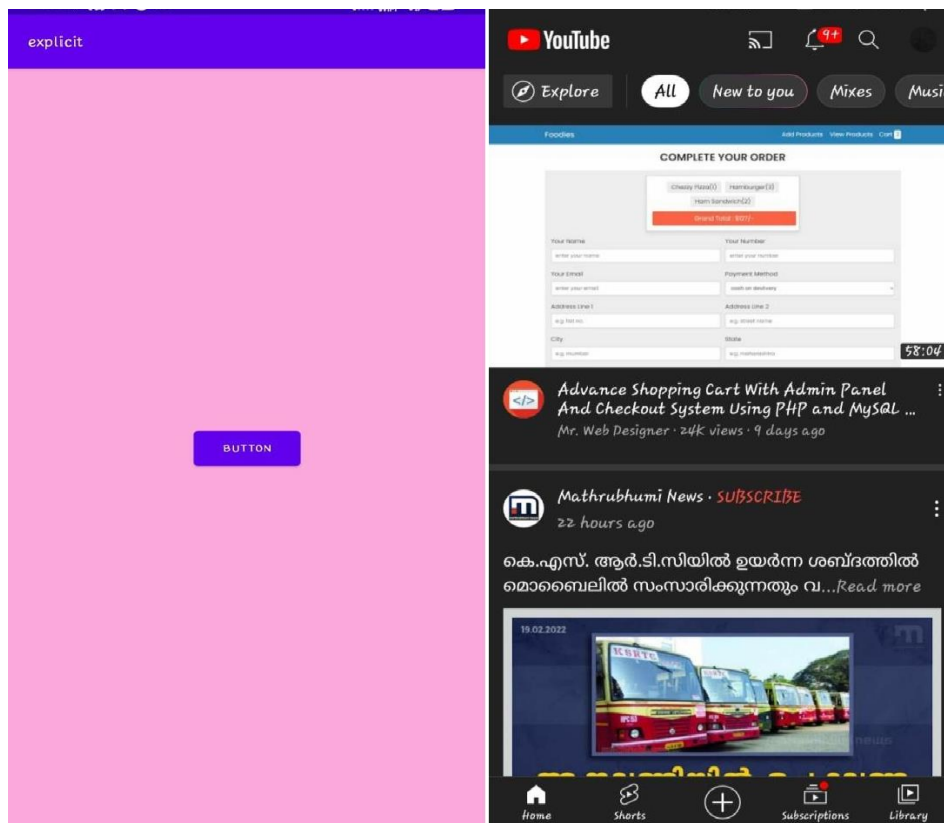
            }

        });

    }
}

```

Output:



Program no:13**Aim:**Implement Options Menu to navigate to activities**XML Code:**

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
      xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/it1"
        android:icon="@drawable/about"
        android:title="About"
        app:showAsAction="withText" />

    <item
        android:id="@+id/it2"
        android:icon="@drawable/help"
        android:title="Help" />
</menu>
<?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=".MainActivity3">
    <ImageView
        android:id="@+id/imageView"
        "

```

```

        android:layout_width="wrap_
        content"
        android:layout_height="wrap_
        content"
        app:layout_constraintBottom_toBottomOf="
        parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497
        "
        app:layout_constraintStart_toStartOf="parent
        "
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.642"
    />

```

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

Java Code:

```

package com.example.myapplication15_12_2;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.ImageView;
import android.widget.Toast;
public class MainActivity3 extends
    AppCompatActivity {
    ImageView i;

    public boolean onCreateOptionsMenu(Menu
        menu) {
        getMenuInflater().inflate(R.menu.menu,men
        u); return true;
        //return super.onCreateOptionsMenu(menu);
    }
}

```

```

    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        item.setIcon(R.drawable
        e about);
        i=findViewById(R.id.im
        ag eView);

        //handle item selection
        switch
            (item.getItemId())
        {
            case
            R.id.it1:
                //view image - about click
                i.setImageResource(R.drawable.about);
                Toast.makeText(getApplicationContext(), "You
                Clicked About",
                Toast.LENGTH_SHORT).
                show();
                return
                true;

            case R.id.it2:
                //moving to next page
                Intent in=new
                Intent(MainActivity3.this,MainActivity.class);
                startActivity(in);
                Toast.makeText(getApplicationContext(), "You
                Clicked
                Help",Toast.LENGTH_SHORT).show();

                return super.onOptionsItemSelected(item);

```

```
    }  
}  
  
@Override  
protected void onCreate(Bundle  
    savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main  
        3);  
}  
  
}
```

Output:



Program no:14

Aim:Develop an application that uses ArrayAdapter with ListView

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=".MainActivity">
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_
content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<ListView
    android:id="@+id/list"
    android:layout_width="396dp"
    android:layout_height="732dp"
    android:layout_marginStart="1dp"
    android:layout_marginEnd="1dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.461"
```



```
listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
    @Override  
    public void onItemClick(AdapterView<?> parent, View view, int position, long id) {  
        Toast.makeText(getApplicationContext(), "View  
Clicked"+countries[position], Toast.LENGTH_SHORT).show();  
    }  
});  
}  
}
```

Output:

Program no:15

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

XML Code:

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

```

```

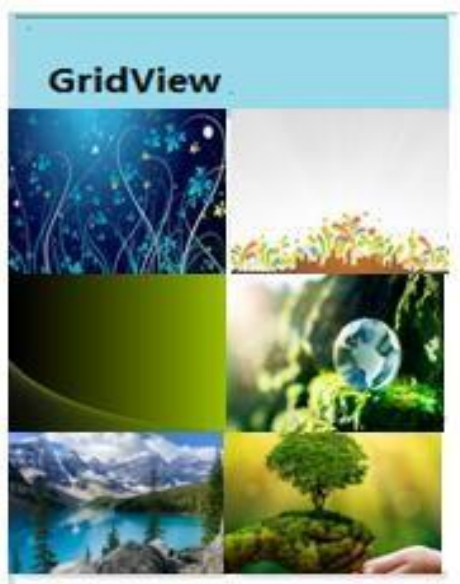
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import java.util.ArrayList;

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: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.c
om/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.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:

Program no:17

Aim:Apply themes vis code and manifest file

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns: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: Develop application using Fragments.

XML Code:

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

    <FrameLayout
        android:id="@+id/frameLayout"
        android:layout_width="match_parent"
        android:background="@color/teal_200"
        android:layout_height="0dp"
        android:layout_weight="4" />

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

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

```

        android:layout_marginBottom="30dp"
        android:text="Fragment 1" />

```

Java Code:

```

package com.example.myapplication09_02_3;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

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

public class MainActivity extends AppCompatActivity {
    Button b1,b2;

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

        b1=findViewById(R.id.
        b1);
        b2=findViewById(R.id.
        b2);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                replaceFragmnt(new
                fragment1());
            }
        });
    }
}

```

```

    }
});

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        replaceFragmnt(new
            fragment2());
    }
});
}

private void replaceFragmnt(Fragment fragment) {
    FragmentManager fragmentManager=getSupportFragmentManager();
    FragmentTransaction
fragmentTransaction=fragmentManager.beginTransaction();
    fragmentTransaction.replace(R.id.frameLayout,fragment);
    fragmentTransaction.commit();
}

}

<Button
    android:id="@+id/b2"
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:layout_alignParentBottom="true"
    android:layout_alignParentRight="true"
    android:layout_marginStart="30dp"
    android:layout_marginBottom="30dp"
    android:text="Fragment 2" />

</RelativeLayout>

```

```
</LinearLayout>
```

```
//create fragment from new>framents>fragment(blank)
```

fragment1.java

```
package
```

```
com.example.myapp09_02_3;import
```

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

```
import androidx.fragment.app.Fragment;
```

```
import
```

```
android.view.LayoutInflater;
```

```
import android.view.View;
```

```
import android.view.ViewGroup;
```

```
public class fragment1 extends Fragment {
```

```
    @Override
```

```
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
```

```
        // Inflate the layout for this fragment
```

```
        return inflater.inflate(R.layout.fragment_1, container, false);
```

```
    }
```

```
}
```

fragment2.java

```
package com.example.myapp09_02_3;
```

```
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);
    }
}

```

fragment_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/purple_700"
    tools:context=".fragment1">

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

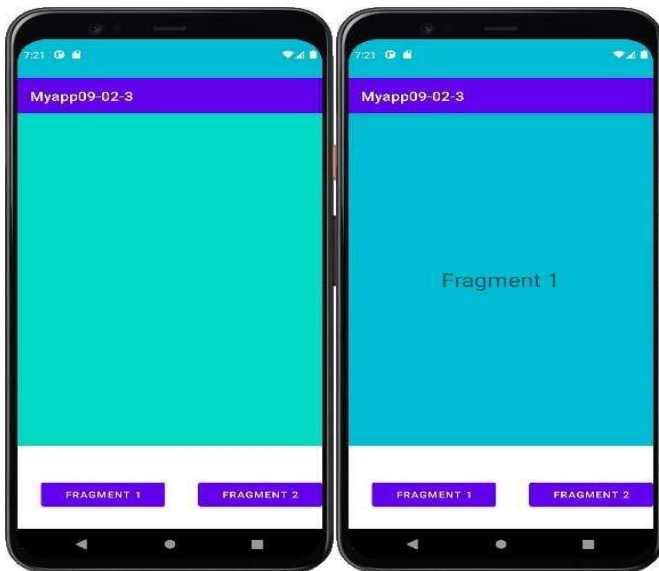
    <TextView
        android:layout_width="wrap_content"
        "
        android:layout_height="wrap_content"
        "
        android:layout_centerInParent="true"
        android:textSize="30dp"

```

```
android:text="Fragment 1" />
```

```
</RelativeLayout>
```

Output:



Program no:19**Aim:**Implement Navigation drawer**XML Code:**

```

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

<androidx.drawerlayout.widget.DrawerLayout xmlns:android="http://schemas.android.com/a
pk/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 onOptionsItemSelected(@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.+'
```

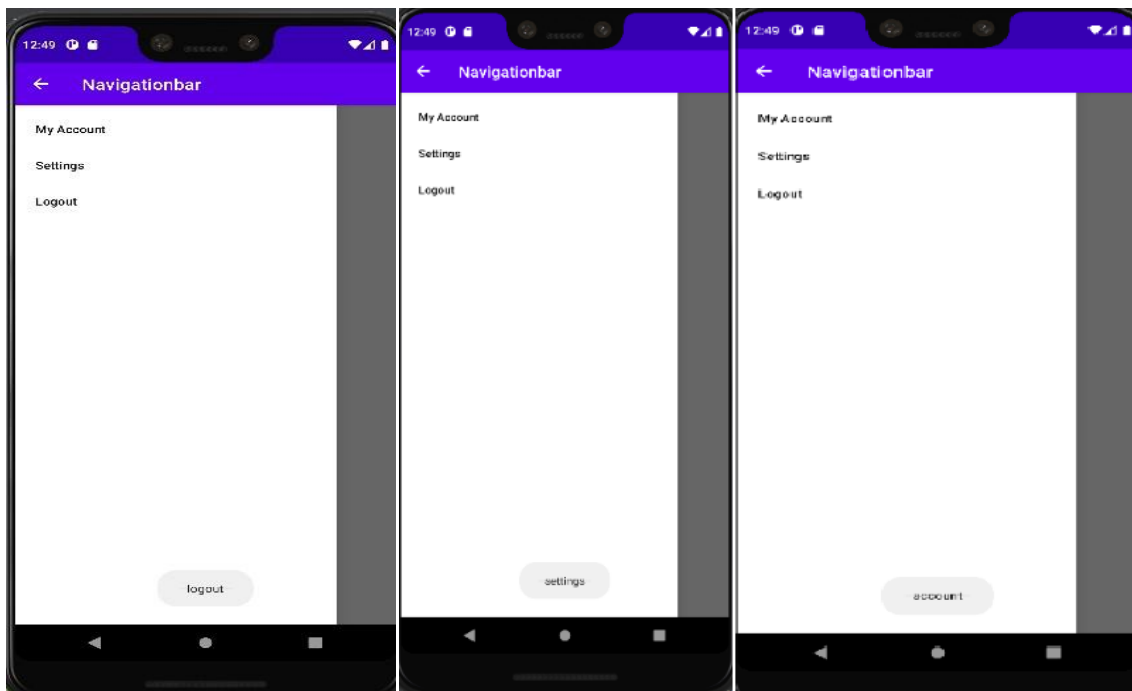
```
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'
```

```
    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**

```

<?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");
    }
}
```

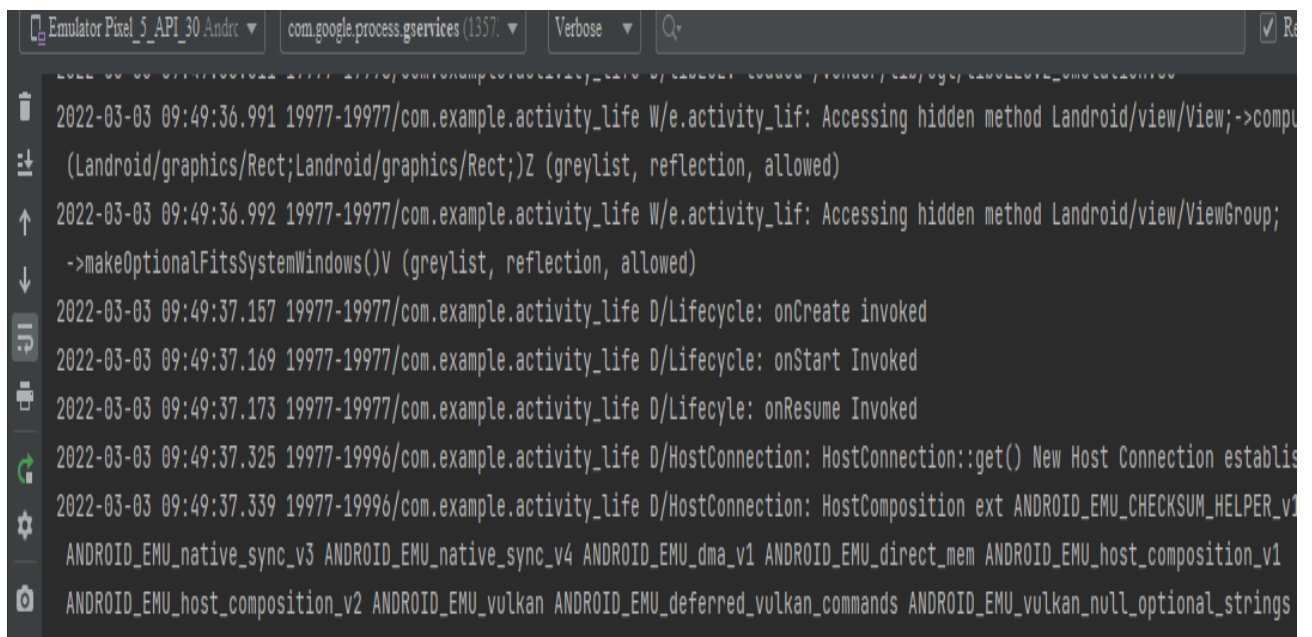
@Override

```
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

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

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Please enter the details!"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintHorizontal_bias="0.498"
            app:layout_constraintLeft_toLeftOf="parent"
            app:layout_constraintRight_toRightOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.171" />

        <EditText
            android:id="@+id/name"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="40dp"
            android:hint=" Enter Name"
            android:inputType="textPersonName"
            android:textSize="24dp"
```

```
app:layout_constraintBottom_toTopOf="@+id/contactapp:layout_constraintTop_toBottomOf="@+id/textView" tools:layout_editor_absoluteX="0dp" />
```

```
<EditText
```

```
    android:id="@+id/contact"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/name"
    android:hint="Contact"
    android:inputType="number"
    android:textSize="24dp"
    tools:layout_editor_absoluteX="89dp"
    tools:layout_editor_absoluteY="286dp" />
```

```
<EditText
```

```
    android:id="@+id/dob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/contact"
    android:hint="Date of birth"
    android:inputType="number"
    android:textSize="24dp"
    tools:layout_editor_absoluteX="63dp"
    tools:layout_editor_absoluteY="339dp" />
```

```
<Button
```

```
    android:id="@+id/buttonInsert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/dob"
    android:layout_marginTop="44dp"
    android:text="Insert new Data"
    android:textSize="24dp"
    app:layout_constraintTop_toBottomOf="@+id/dob"
```

```
tools:layout_editor_absoluteX="0dp" />
```

```
<Button
```

```
    android:id="@+id/buttonUpdate"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/buttonInsert"
    android:text="Update Data"
    android:textSize="24dp"
    tools:layout_editor_absoluteX="16dp"
    tools:layout_editor_absoluteY="519dp" />
```

```
<Button
```

```
    android:id="@+id/buttondelete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/buttonUpdate"
    android:text="Delete existing data"
    android:textSize="24dp"
    tools:layout_editor_absoluteX="-41dp"
    tools:layout_editor_absoluteY="582dp" />
```

```
<Button
```

```
    android:id="@+id/buttonView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/buttondelete"
    android:text="View data"
    android:textSize="24dp"
    tools:layout_editor_absoluteX="28dp"
    tools:layout_editor_absoluteY="634dp" />
```

```
</LinearLayout>
```

Java

```

package com.example.sqlite_app;

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

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

public class MainActivity extends AppCompatActivity {
    EditText name, contact, dob;
    Button insert, update, delete, view;
    DBHelper DB;

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

```

package com.example.sqlite_app;

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

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Userdata", null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase DB, int oldVersion, int newVersion) {
        DB.execSQL("drop Table if exists Userdetails");
    }

    public Boolean insertuserdata(String name, String contact, String dob){
        SQLiteDatabase DB=this.getWritableDatabase();

```

```

ContentValues contentValues=new ContentValues();
contentValues.put("name",name);
contentValues.put("contact",contact);
contentValues.put("dob",dob);
long result=DB.insert("Userdetails", null, contentValues);
if(result==-1){
    return false;
}else{
    return true;
}
}

public Boolean updateuserdata(String name, String contact, String dob){
    SQLiteDatabase DB=this.getWritableDatabase();
    ContentValues contentValues=new ContentValues();
    contentValues.put("contact",contact);
    contentValues.put("dob",dob);
    Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?", new
String[]{name});
    if(cursor.getCount()>0) {
        long result = DB.update("Userdetails", contentValues, "name=?", new
String[]{name});
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }else{
        return false;
    }
}

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

```

```

if(cursor.getCount()>0) {
    long result = DB.delete("Userdetails", "name=?", new String[]{name});
    if (result == -1) {
        return false;
    } else {
        return true;
    }
} else {
    return false;
}
}

public Cursor getdata (){
    SQLiteDatabase DB=this.getWritableDatabase();
    Cursor cursor=DB.rawQuery("Select * from Userdetails",null);
    return cursor;
}
}

```

OUTPUT

