

# **20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**

*Lab Report Submitted By*

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**



**AMAL JYOTHI COLLEGE OF ENGINEERING  
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**CERTIFICATE**

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **ANJALI C ABRAHAM (Reg.No:AJC20MCA-2018)** 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 2020-22.

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**Program no: 01**

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

**XML Code:**

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

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:text="Login"
        android:textColor="#2196F3"
        android:textSize="50dp"
        tools:layout_editor_absoluteX="31dp"
        tools:layout_editor_absoluteY="39dp" />
```

<EditText

```
    android:id="@+id/e1"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:ems="10"  
    android:inputType="textPersonName"  
    android:minHeight="48dp"  
    android:text="Username" />
```

<EditText

```
    android:id="@+id/e2"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:ems="10"  
    android:inputType="textPassword"  
    android:minHeight="48dp"  
    android:text="Password" />
```

<Button

```
    android:id="@+id/b1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="right"  
    android:text="Login" />
```

</LinearLayout>

**Java Code:**

```
package com.example.login;

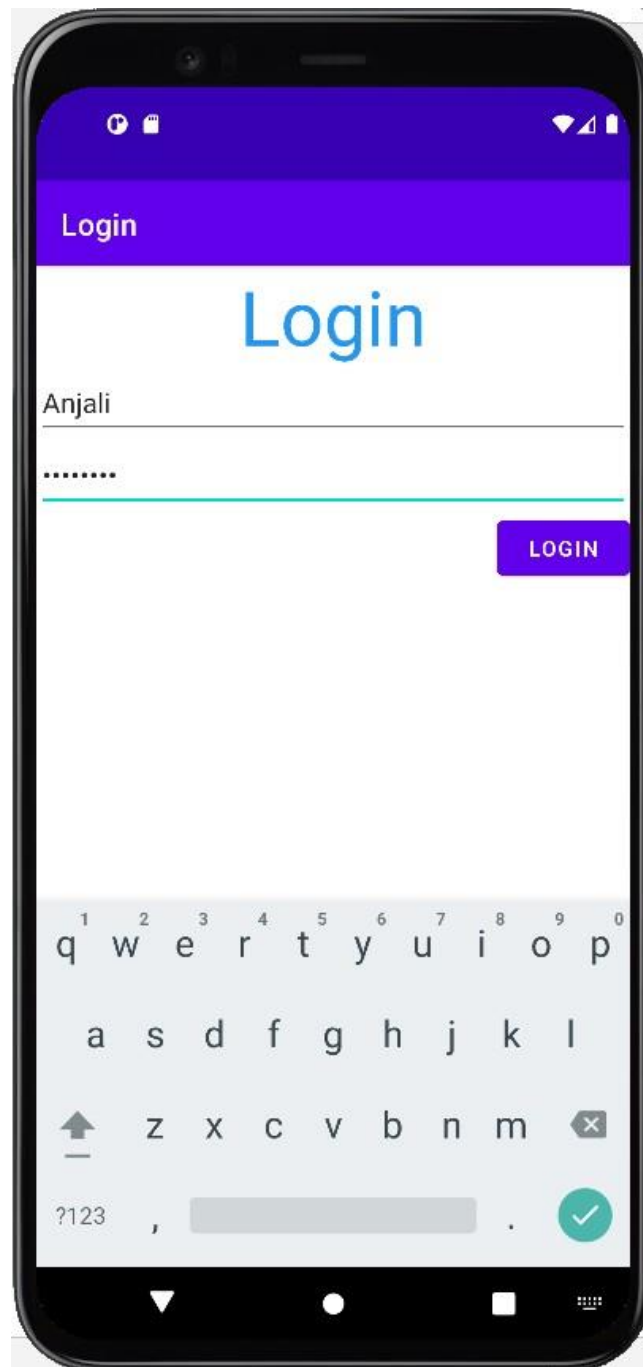
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private TextView t1;
    private EditText e1;
    private EditText e2;
    private Button b1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=findViewById(R.id.b1);
        e1=findViewById(R.id.e1);
        e2=findViewById(R.id.e2);
    }
}
```

**Output:**





**Program no: 02**

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

**XML Code:**

```
<?xml 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="#54E91E63"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText

        android:id="@+id/text1"
        android:layout_width="wrap_content"
        android:layout_height="78dp"
        android:background="@color/white"
        android:hint="Enter the Text"
        android:textColorHighlight="#E91E63"
        android:textColorLink="#A6E91E63"
        android:textSize="25dp"
```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.693"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.298" />

```

<Button

```

android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:gravity="center"
android:text="Button"
android:textColorHighlight="#E91E63"
android:textColorLink="#E91E63"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.88"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.472" />

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="70dp"
    android:layout_gravity="center"
    android:text="Entered Text "
    android:textColorHighlight="#B0E91E63"
    android:textColorLink="#D2E91E63"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.173"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.721" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.display;

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

```

```
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private EditText t1;

    private TextView t2;

    private Button b1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        t1=findViewById(R.id.text1);

        t2=findViewById(R.id.textView2);

        b1=findViewById(R.id.button);

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

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

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

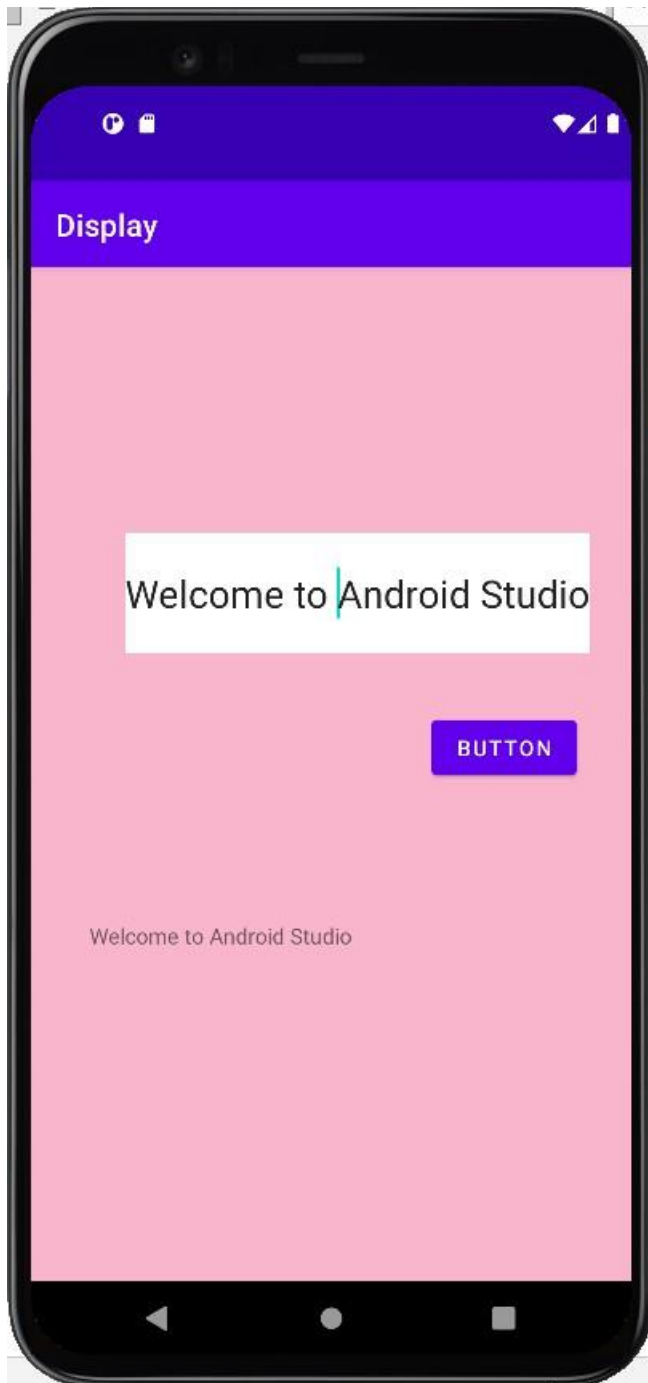
            }

        });

    }

}
```

**Output:**



**Program no: 03**

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

**XML Code:**

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

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:text="Login"
        android:textColor="#2196F3"
        android:textSize="50dp"
        tools:layout_editor_absoluteX="31dp"
        tools:layout_editor_absoluteY="39dp" />
```

<EditText

```
    android:id="@+id/e1"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:ems="10"  
    android:hint="Username"  
    android:inputType="textPersonName"  
    android:minHeight="48dp" />
```

<EditText

```
    android:id="@+id/e2"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:ems="10"  
    android:hint="Password"  
    android:inputType="textPassword"  
    android:minHeight="48dp" />
```

<Button

```
    android:id="@+id/b1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="right"  
    android:text="Login" />
```

</LinearLayout>



**Java Code:**

```
package com.example.login;

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

public class MainActivity extends AppCompatActivity {

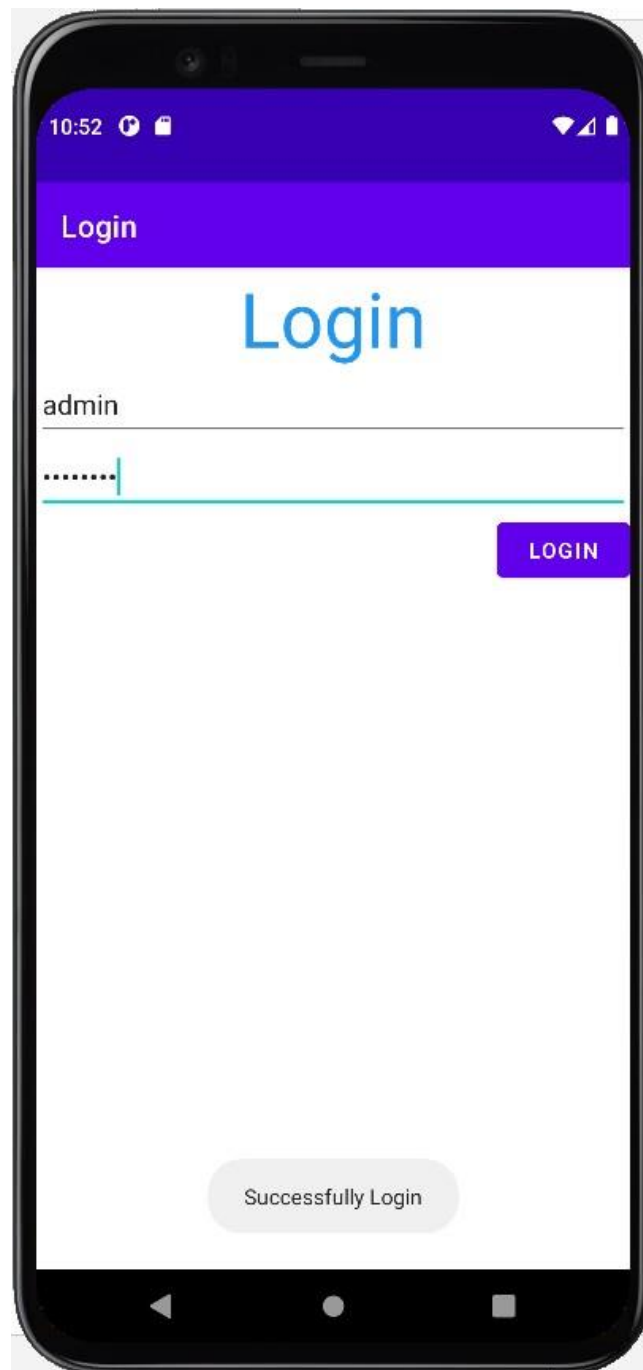
    private TextView t1;
    private EditText e1;
    private EditText e2;
    private Button b1;

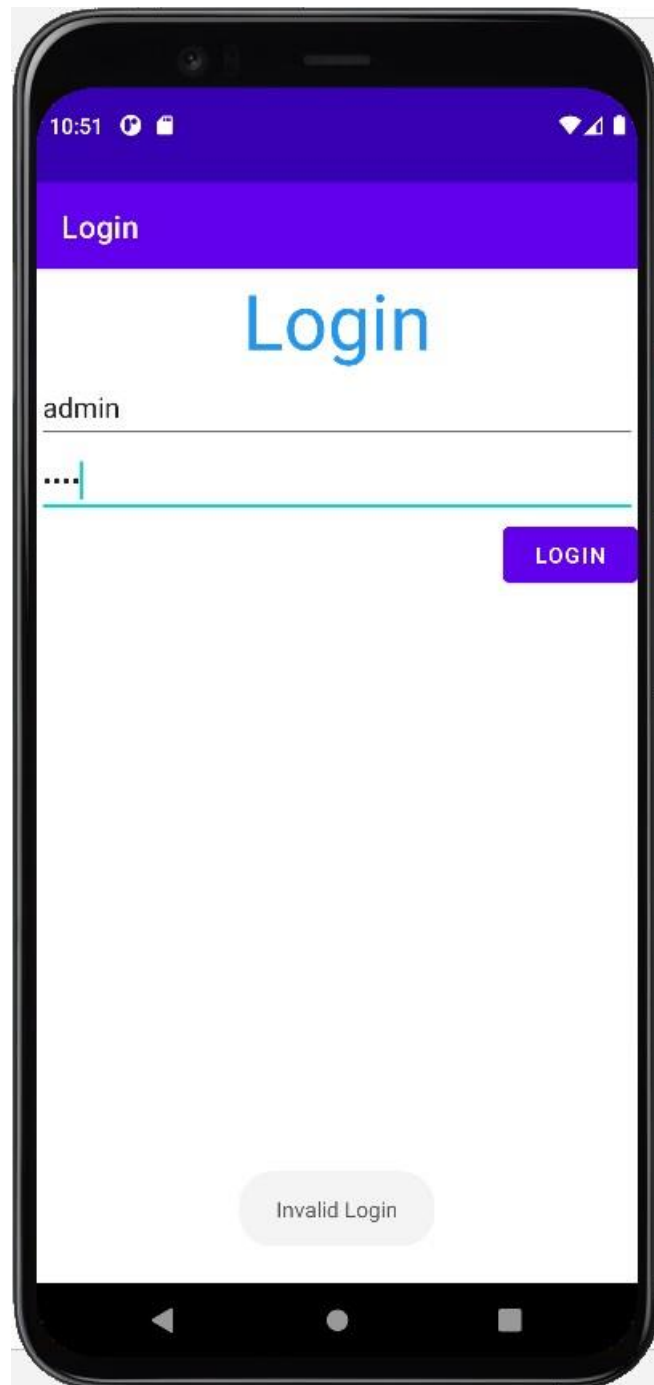
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        b1 = findViewById(R.id.b1);
        e1 = findViewById(R.id.e1);
        e2 = findViewById(R.id.e2);
```

```
b1.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
        String uname = e1.getText().toString();  
        String pass = e2.getText().toString();  
        if (uname.equals( "admin") && pass.equals("admin123")) {  
            Toast.makeText(getApplicationContext(), "Successfully Login",  
Toast.LENGTH_SHORT).show();  
        }  
        else {  
            Toast.makeText(getApplicationContext(), "Invalid Login",  
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"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:padding="20dp"
    android:orientation="vertical"
    android:background="@color/pastel">
```

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

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

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

```
android:hint="Enter" />
```

```
<EditText
```

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

```
android:layout_width="102dp"
```

```
android:layout_height="59dp"
```

```
android:ems="10"
```

```
android:hint="Enter" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

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

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

```
android:orientation="horizontal"
```

```
android:layout_marginBottom="20dp">
```

```
<TextView
```

```
android:textSize="35sp"
```

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

```
android:layout_width="102dp"
```

```
android:layout_height="59dp"
```

```
android:layout_marginHorizontal="50dp"
```

```
android:hint="ans" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
android:orientation="vertical"
```

```
android:layout_marginLeft="250dp"
```

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

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

```
android:layout_marginBottom="30dp">
```

```
<Button
```

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

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

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

```
android:text="-"
```

```
android:textSize="25sp"
```

```
android:layout_marginBottom="16dp" />
```

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

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

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

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

**Java Code:**

```
package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText no1 , no2;

    Button add ,mul ,div , sub,equal;

    TextView answer;

    double ans = 0;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        no1 = findViewById(R.id.first_no);

        no2 = findViewById(R.id.second_no);

        add = findViewById(R.id.add);

        mul = findViewById(R.id.mul);

        div = findViewById(R.id.div);

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



```

equal = findViewById(R.id.equals);
answer = findViewById(R.id.answer);
add.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

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

        }

        else {

            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            ans = a + b;

        }

    }

});

sub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

```

```

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

    }

    else {

        double a = Double.parseDouble(no1.getText().toString());

        double b = Double.parseDouble(no2.getText().toString());

        ans = a - b;

    }

}

});

mul.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

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

        }

        else {

            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            ans = a * b;

        }

    }

}

```

```

});

div.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

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

        } else {

            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            if (b != 0)

                ans = a / b;

            else

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

        }

    }

});

```

```

equal.setOnClickListener(new View.OnClickListener() {

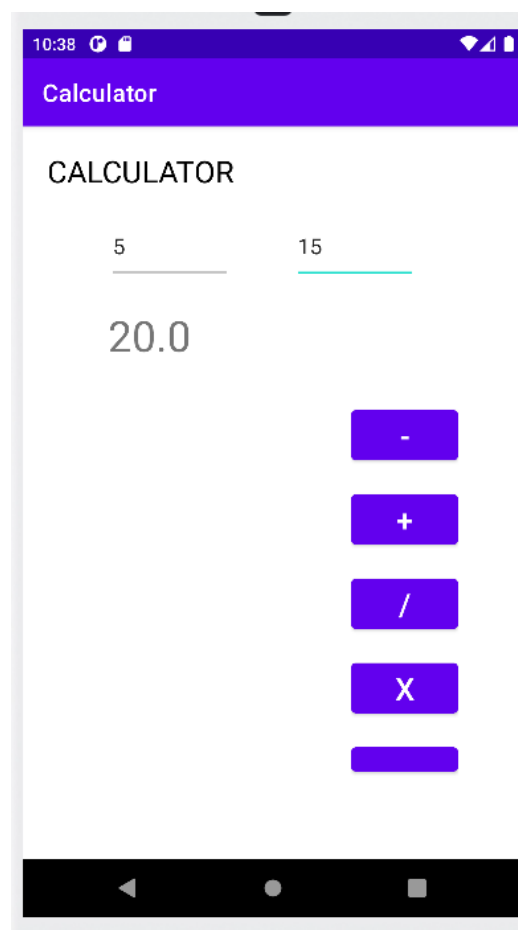
    @Override

    public void onClick(View v) {

        String ans1 = String.valueOf(ans);

```

```
        answer.setText(ans1);  
        ans= 0;  
    }  
    });  
}  
}
```

**Output:**

**Program no:5**

**Aim** Implement validations on various UI controls

**XML Code:**

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

<LinearLayout

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

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:orientation="vertical"

    tools:context=".MainActivity"

    tools:ignore="HardcodedText">

    <EditText

        android:id="@+id/firstName"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="First Name"

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

<EditText

```
    android:id="@+id/lastName"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="16dp"
    android:hint="Last Name"
    android:inputType="text" />
```

<EditText

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

<EditText

```
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```
android:layout_marginStart="16dp"  
android:layout_marginTop="16dp"  
android:layout_marginEnd="16dp"  
android:hint="Password"  
android:inputType="textPassword" />
```

<LinearLayout

```
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_marginTop="8dp"  
android:gravity="end"  
android:orientation="horizontal">
```

<Button

```
android:id="@+id/cancelButton"  
style="@style/Widget.AppCompat.Button.Borderless"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginEnd="4dp"  
android:text="CANCEL "  
android:textColor="@color/white" />
```

<Button

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

```

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

```

### Java Code:

```

package com.example.validation;

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

public class MainActivity extends AppCompatActivity {

    Button bCancel, bProceed;

    EditText etFirstName, etLastName, etEmail, etPassword;

    boolean isAllFieldsChecked = false;

```



```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    bProceed = findViewById(R.id.proceedButton);
```

```
    bCancel = findViewById(R.id.cancelButton);
```

```
    etFirstName = findViewById(R.id.firstName);
```

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

```
    etEmail = findViewById(R.id.email);
```

```
    etPassword = findViewById(R.id.password);
```

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

```
        @Override
```

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

```
            isAllFieldsChecked = CheckAllFields();
```

```
            if (isAllFieldsChecked) {
```

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

```
                startActivity(i);
```

```
            }
```

```
        }
```

```
    });
```

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

```
        @Override
```

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

```
        MainActivity.this.finish();  
        System.exit(0);  
    }  
});  
}
```

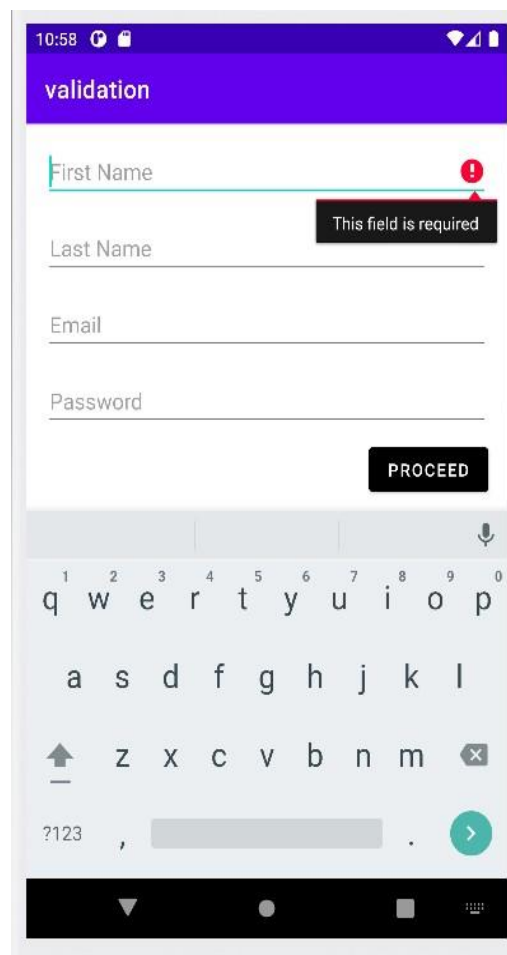
```
private boolean CheckAllFields() {  
    if (etFirstName.length() == 0) {  
        etFirstName.setError("This field is required");  
        return false;  
    }
```

```
    if (etLastName.length() == 0) {  
        etLastName.setError("This field is required");  
        return false;  
    }
```

```
    if (etEmail.length() == 0) {  
        etEmail.setError("Email is required");  
        return false;  
    }
```

```
    if (etPassword.length() == 0) {  
        etPassword.setError("Password is required");  
        return false;  
    }
```

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

**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.com/apk/res/android"

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

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".explicit_intent">

    <TextView

        android:id="@+id/textView3"

        android:layout_width="60dp"

        android:layout_height="17dp"

        android:text="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.091"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.222" />
```

<EditText

```
    android:id="@+id/name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.756"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.215" />
```

<TextView

```
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Email ID"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.096"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.325" />
```

<EditText

```
    android:id="@+id/em"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.761"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.319" />
```

<TextView

```
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Phone No."
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.09"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.435" />
```

<EditText

```
    android:id="@+id/ph"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.761"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.431" />
```

<Button

```
    android:id="@+id/sav"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="SAVE"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.413"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.562" />
```

```

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter Your Details"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.464"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.133" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Display xml 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=".display">
    <TextView

```



```
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Your Details Using Intent"
android:textStyle="bold"
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.146" />
<TextView
    android:id="@+id/dis"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textStyle="italic"
    android:textSize="15sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.233" />
```

<TextView

```
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Your Details Using Shared Preference"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.771"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.467" />
```

<TextView

```
    android:id="@+id/dis1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="15sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.527"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```

```

        app:layout_constraintVertical_bias="0.571" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.sharedpreference;

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

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        ActionBar a=getSupportActionBar();

        a.setTitle("Welcome");

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

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

```

```

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

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

sub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

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

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

        i.putExtra("Name",user);

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

        i.putExtra("Email",E_mail);

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

        i.putExtra("Phone",Phones);

        startActivity(i);

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

        SharedPreferences.Editor myEdit = sharedPreferences.edit();

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

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

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

        myEdit.apply();

    }

});

}

}

```

**Display Java code:**

```

package com.example.sharedpreference;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;

public class display extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_display);

        ActionBar a=getSupportActionBar();

        a.setTitle("Display");

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

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

        Intent i=getIntent();

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

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

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

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

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

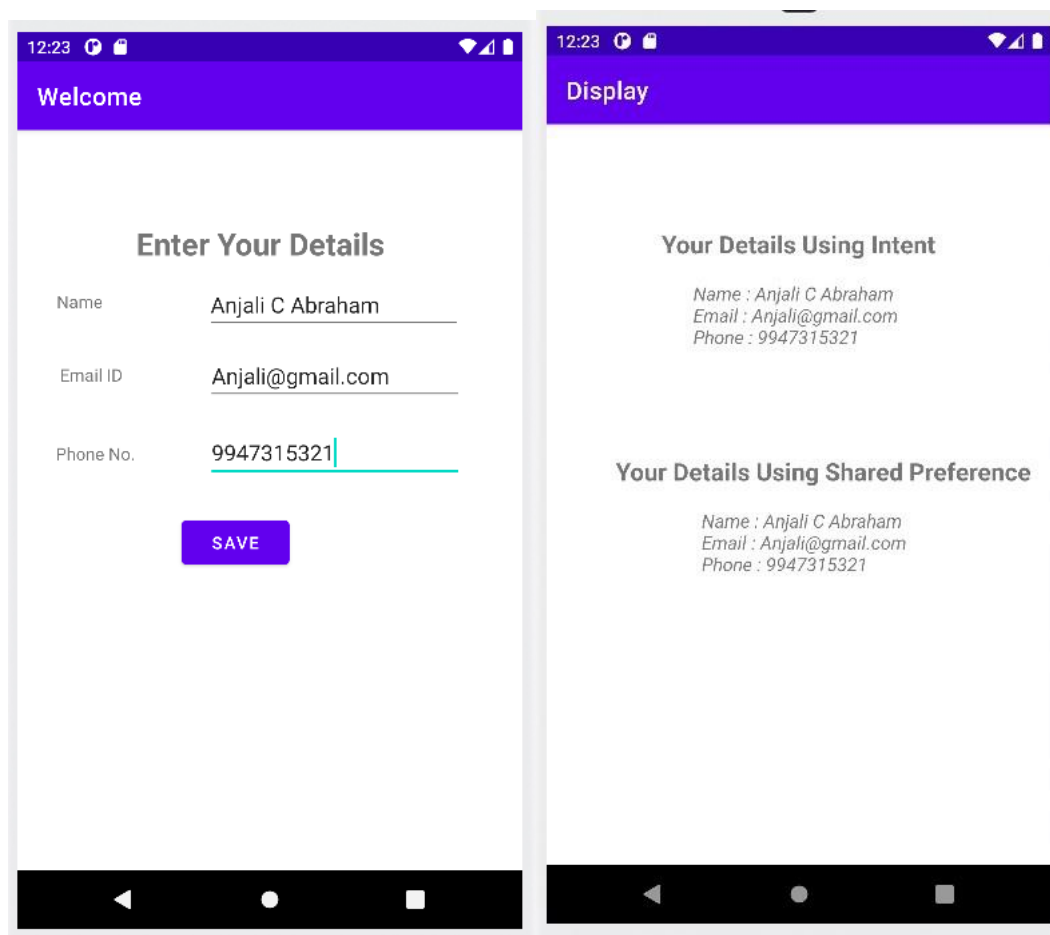
```

```

String Name=sharedPreferences.getString("name","");
String Email=sharedPreferences.getString("email","");
String Phone=sharedPreferences.getString("phone","");
diss1.setText("Name : "+Name+"\nEmail : "+Email+"\nPhone : "+Phone);
}
}

```

### Output:



**Program no: 7**

**Aim:** Design a simple Calculator using GridLayout and Cascaded LinearLayout

**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:background="#323030"
    android:layout_gravity="bottom"
    android:gravity="bottom"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <LinearLayout

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

```
android:layout_gravity="end"  
android:orientation="vertical">
```

```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginEnd="20dp"  
    android:text="9+10"  
    android:textAlignment="textEnd"  
    android:textColor="@color/white"  
    android:textSize="40dp" />
```

```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginEnd="20dp"  
    android:text="=19"  
    android:textAlignment="textEnd"  
    android:textColor="@color/white"  
    android:textSize="40dp" />
```

```
</LinearLayout>
```

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



```
android:layout_margin="10dp"  
android:layout_weight="1"  
android:columnCount="4"  
android:gravity="bottom"  
android:rowCount="4">
```

```
<Button
```

```
    android:id="@+id/b9"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_margin="10dp"  
    android:background="@drawable/bg_button"  
    android:text="9"  
    android:textColor="@color/white"  
    android:textSize="25dp" />
```

```
<Button
```

```
    android:id="@+id/b8"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_margin="10dp"  
    android:background="@drawable/bg_button"  
    android:text="8"  
    android:textColor="@color/white"  
    android:textSize="25dp" />
```

<Button

```
    android:id="@+id/b7"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_margin="10dp"  
    android:background="@drawable/bg_button"  
    android:text="7"  
    android:textColor="@color/white"  
    android:textSize="25dp" />
```

<Button

```
    android:id="@+id/bmult"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_margin="10dp"  
    android:background="#F86605"  
    android:text="x"  
    android:textColor="@color/white"  
    android:textSize="18dp" />
```

<Button

```
    android:id="@+id/b6"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"
```

```
android:layout_margin="10dp"  
android:background="@drawable/bg_button"  
android:text="6"  
android:textColor="@color/white"  
android:textSize="25dp" />
```

<Button

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

<Button

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

<Button

```
    android:id="@+id/bdiv"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#F86605"
    android:text="/"
    android:textColor="@color/white"
    android:textSize="25dp" />
```

<Button

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

<Button

```
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
android:layout_margin="10dp"  
android:background="@drawable/bg_button"  
android:text="2"  
android:textColor="@color/white"  
android:textSize="25dp" />
```

<Button

```
android:id="@+id/b1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_margin="10dp"  
android:background="@drawable/bg_button"  
android:text="1"  
android:textColor="@color/white"  
android:textSize="25dp" />
```

<Button

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

<Button

```
    android:id="@+id/b0"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_margin="10dp"  
    android:background="@drawable/bg_button"  
    android:text="0"  
    android:textColor="@color/white"  
    android:textSize="25dp" />
```

<Button

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

<Button

```
    android:id="@+id/bequal"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"
```

```

        android:layout_margin="10dp"
        android:background="@drawable/bg_button"
        android:text=""
        android:textColor="@color/white"
        android:textSize="25dp" />

```

```
<Button
```

```

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

```

```
</GridLayout>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

### Java Code:

```

package com.example.grid_layout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

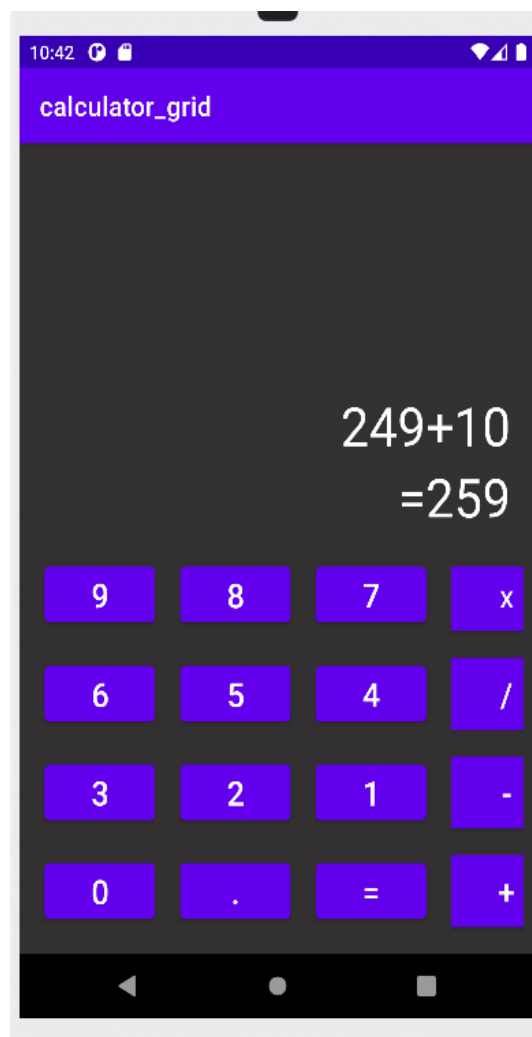
public class MainActivity extends AppCompatActivity {

```

@Override

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

**Output:**





**Program no: 8**

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

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

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#29487D"
        android:gravity="center|top"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="70dp"
```

```
        android:layout_marginBottom="100dp"
        android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="@font/fb"
        android:text="facebook"
        android:textSize="36dp"
        android:padding="10dp"
        android:textColor="@color/white" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="15dp"
    android:orientation="vertical"
    android:layout_margin="20dp">
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Email or Phone"
        android:layout_marginBottom="30dp"
        android:textColorHint="#594F4F"
        android:background="@drawable/bg_box"/>
```

<EditText

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="30dp"
    android:background="@drawable/bg_box"
    android:hint="password"
    android:textColorHint="#594F4F"/>
```

<Button

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Log In"
    android:background="@color/design_default_color_primary"
    android:textAllCaps="false"/>
```

</LinearLayout>

<LinearLayout

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="180dp"
    android:layout_gravity="bottom"
    android:gravity="center">
```

<TextView

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

```

        android:gravity="end"
        android:textStyle="bold"
        android:textColor="@color/white"
        android:layout_marginRight="75dp"
        android:layout_weight="50"
        android:text="SignUp for Facebook"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="end"
        android:textColor="@color/white"
        android:layout_marginEnd="50dp"
        android:layout_weight="1"
        android:textStyle="bold"
        android:text="?" />
</LinearLayout>
</LinearLayout>
</LinearLayout>

```

### Java Code:

```

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

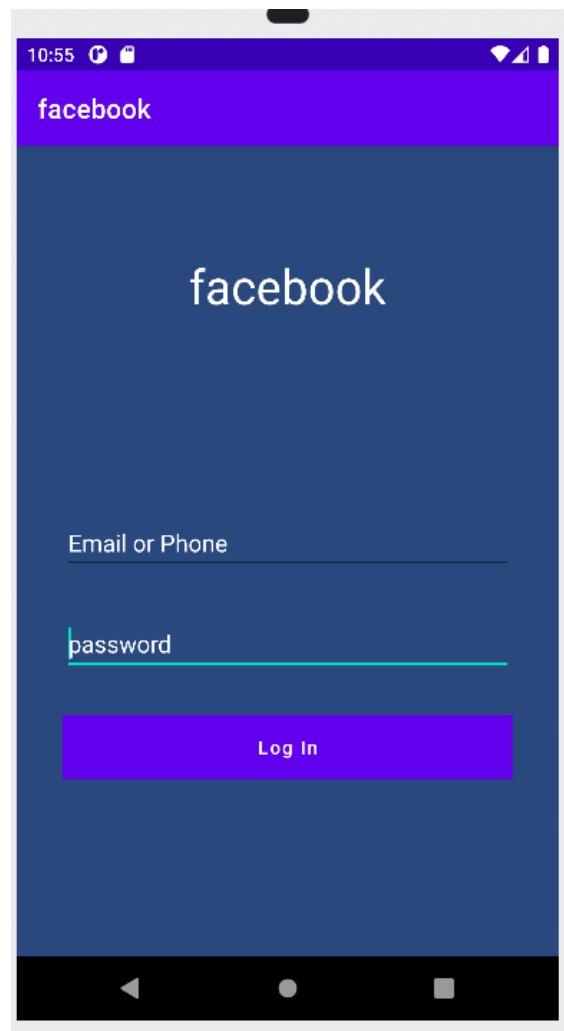
public class MainActivity extends AppCompatActivity {

```

@Override

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

**Output:**



**Program no: 9**

**Aim:** Develop an application that toggles image using FrameLayout

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:background="@color/teal_700"
    tools:context=".MainActivity">
    <ImageView
        android:id="@+id/image2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:src="@drawable/image2"
        android:visibility="gone"/>
    <ImageView
        android:id="@+id/image1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```

        android:layout_gravity="center"

        android:src="@drawable/image1"/>
</FrameLayout>

```

### Java Code:

```

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);

    }

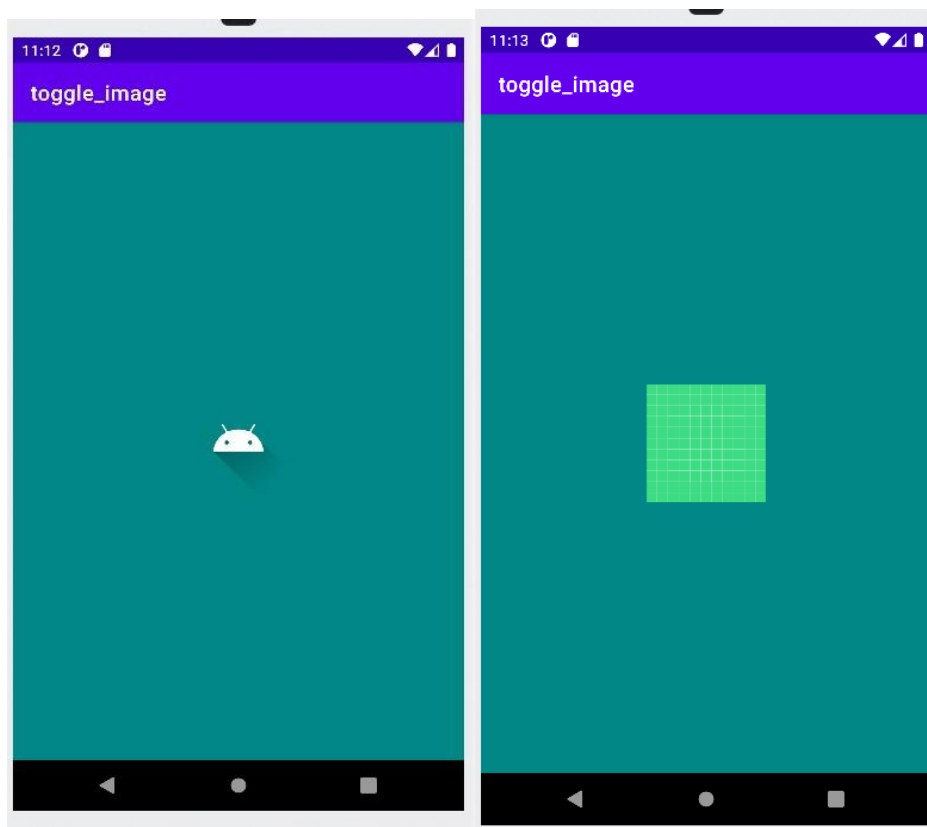
    public void onClick(View v)

    {

        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.com/apk/res/android"

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

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

    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ListView

        android:layout_width="409dp"
        android:layout_height="354dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:id="@+id/list1"/>

</androidx.constraintlayout.widget.ConstraintLayout>

```

**Java Code:**

```

package com.example.myadapter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

```

```

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import android.widget.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {

    ListView l1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

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

        try {

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

            l1.setAdapter(adapter);

            l1.setOnItemClickListener(this);

        }

        catch (Exception e)

        {

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

        }

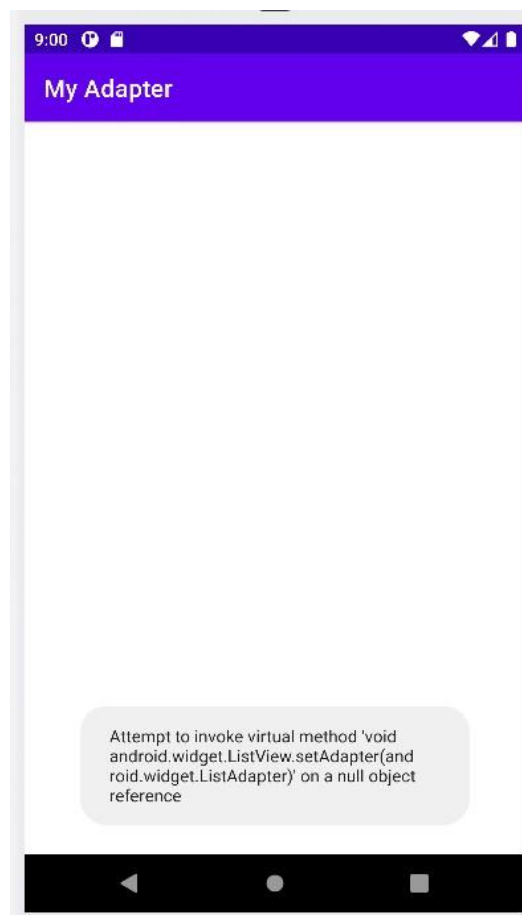
    }

```

@Override

```
public void onItemClick(AdapterView<?> adapterView, View view, int i,  
long l) {  
    TextView tem=(TextView) view;  
    Toast.makeText(this, tem.getText(), Toast.LENGTH_LONG).show();  
}  
}
```

**Output:**



**Program no: 11****Aim:** Implement Intent to navigate between multiple activities (Explicit Intent)**XML Code:**

```

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

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

    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:onClick="callActivity"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Name"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.437"
        app:layout_constraintStart_toStartOf="parent"

```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.148" />
<EditText
    android:id="@+id/address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Address"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.437"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.313" />
<EditText
    android:id="@+id/email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Email"
    android:inputType="textPersonName"
    android:onClick="callActivity"
    app:layout_constraintBottom_toBottomOf="parent"
```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.437"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.475" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Submit"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.454"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.609" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### **Activity2 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=".MainActivity2">
<TextView
    android:id="@+id/view3"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.398" />
<TextView
    android:id="@+id/view1"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.22" />
```

```

<TextView
    android:id="@+id/view2"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.306" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.co_q3;

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

public class MainActivity extends AppCompatActivity {

    Button b1;

```



```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

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

```
    b1.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
```

```
        public void onClick(View view) {
```

```
            callActivity(view);
```

```
        }
```

```
    });
```

```
}
```

```
public void callActivity(View view) {
```

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

```
    final EditText editText1 = (EditText)findViewById(R.id.name);
```

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

```
    final EditText editText2 = (EditText)findViewById(R.id.address);
```

```
    String add = editText2.getText().toString();
```

```
    final EditText editText3 = (EditText)findViewById(R.id.email);
```

```
    String em = editText3.getText().toString();
```

```
    i.putExtra("Value1", msg);
```

```
    i.putExtra("Value2", add);
```

```
    i.putExtra("Value3", em);
```

```
    startActivity(i); }}
```

**Activity2 Java code:**

```
package com.example.co_q3;

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

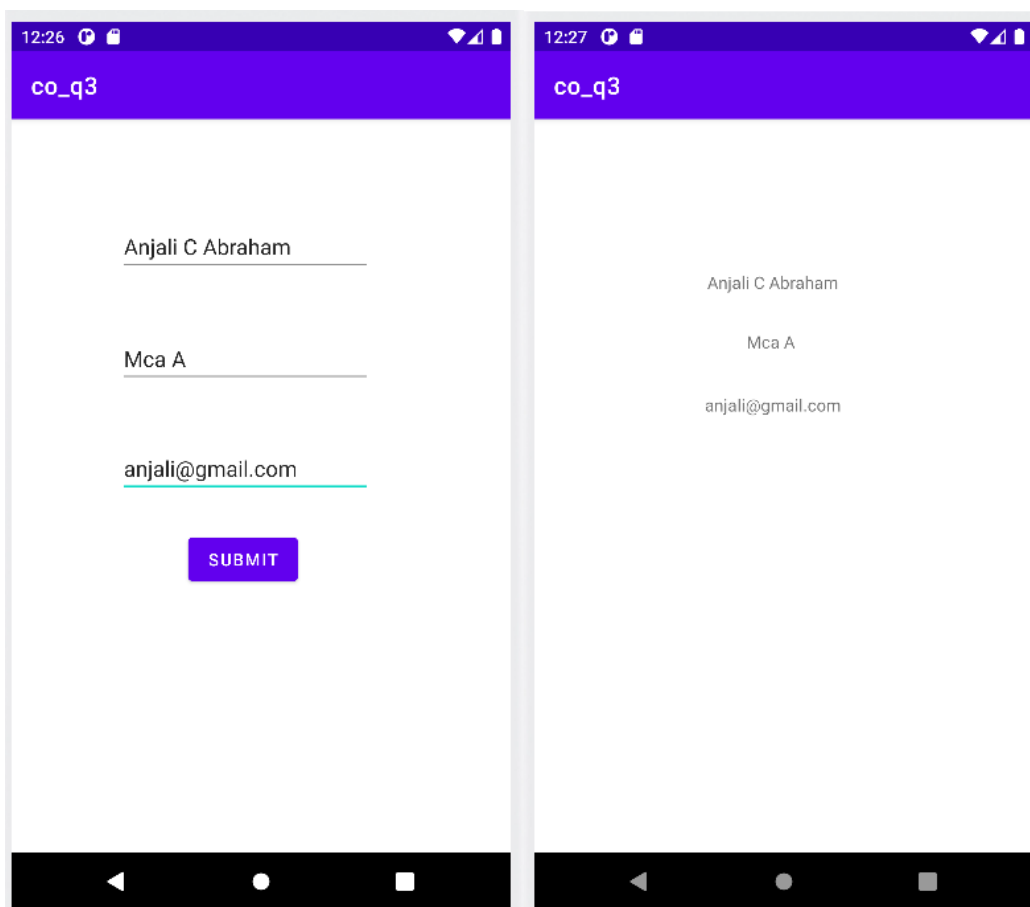
public class MainActivity2 extends AppCompatActivity {

    TextView view1;
    TextView view2;
    TextView view3;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        view1 = (TextView) findViewById(R.id.view1);
        view2 = (TextView) findViewById(R.id.view2);
        view3 = (TextView) findViewById(R.id.view3);
        Bundle extras = getIntent().getExtras();
        String value1 = extras.getString("Value1");
        String value2 = extras.getString("Value2");
        String value3 = extras.getString("Value3");
        view1.setText(value1);
```

```
view2.setText(value2);  
view3.setText(value3);  
}  
}
```

### Output:



**Program no: 12**

**Aim:** Develop an application that works with implicit intents

**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">

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

**Java Code:**

```

package com.example.myapplication;

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

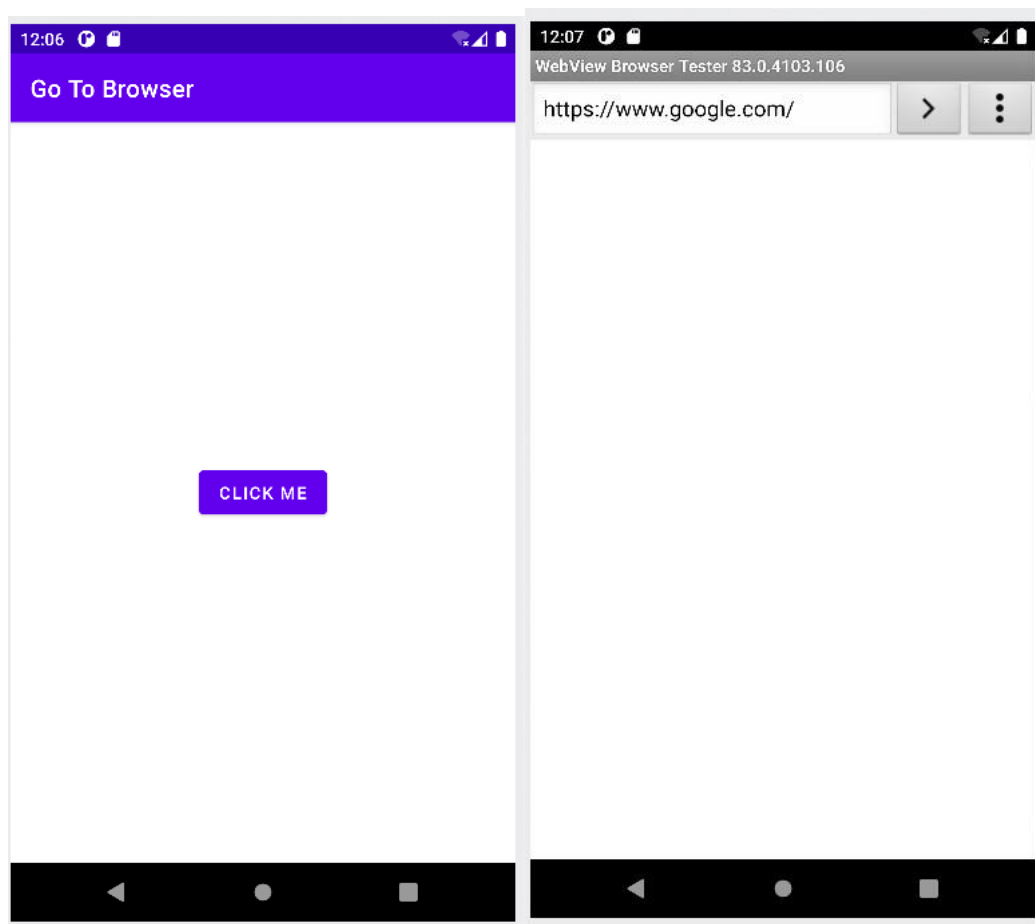
public class MainActivity extends AppCompatActivity {

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

```

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

### Output:



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

```

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

```

**Activitymain.xml**

```

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

    <TextView
        android:layout_width="wrap_content"

```

```

        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

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

```



```
@Override

public boolean onCreateOptionsMenu(Menu menu) {

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

    return true;

}

@Override

public boolean onOptionsItemSelected(MenuItem item){

    switch (item.getItemId()){

        case R.id.item1:

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

            return true;

        case R.id.item2:

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

            return true;

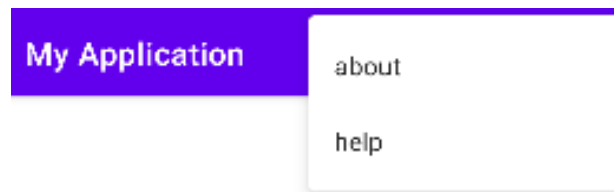
        default:

            return super.onOptionsItemSelected(item);

    }

}

}
```

**Output:**

Hello World!

**Program no: 14**

**Aim:** Develop an application that uses ArrayAdapter with ListView

**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">
    <ListView
        android:id="@+id/mobile_list"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >
    </ListView>
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java Code:**

```
package com.example.adapter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;
```

```

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import android.widget.TextView;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {

    ListView l;

    String[]
    days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Satu
rday"};

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        l=findViewById(R.id.mobile_list);
        ArrayAdapter<String> adapter= new
ArrayAdapter<String>(this,R.layout.support_simple_spinner_dropdown_item,d
ays);

        l.setAdapter(adapter);

        l.setOnItemClickListener(this);

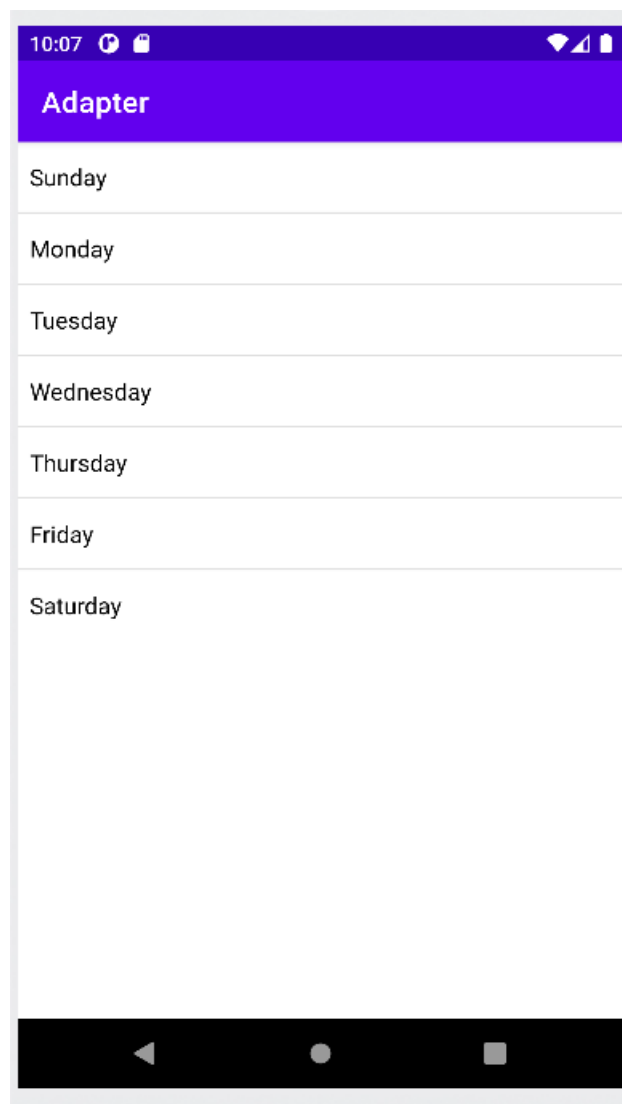
    }


    @Override

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

```

```
TextView temp=(TextView) view;  
  
Toast.makeText(this,"You  
clicked"+temp.getText()+"at"+i,Toast.LENGTH_LONG).show();  
  
}  
  
}
```

**Output:**

**Program no: 15**

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

**XML Code:**

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" >
    <GridView
        android:numColumns="auto_fit"
        android:gravity="center"
        android:columnWidth="100dp"
        android:stretchMode="columnWidth"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:id="@+id/grid"/>
</LinearLayout>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:padding="5dp" >
    <ImageView
        android:id="@+id/grid_image"
        android:layout_width="50dp"
        android:layout_height="50dp">
    </ImageView>
```

```

<TextView
    android:id="@+id/grid_text"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:textSize="9sp" >
</TextView>
</LinearLayout>

```

### Java Code:

```

package com.example.gridview_image_text_example;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class CustomGrid extends BaseAdapter{
    private Context mContext;
    private final String[] web;
    private final int[] Imageid;

    public CustomGrid(Context c,String[] web,int[] Imageid ) {
        mContext = c;
        this.Imageid = Imageid;
        this.web = web;
    }

```

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

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

```
@Override
public long getItemId(int position) {
    return 0;
}
```

```
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    View grid;
    LayoutInflater inflater = (LayoutInflater) mContext
        .getSystemService(Context.LAYOUT_INFLATER_SERVICE);
    if (convertView == null) {
        grid = new View(mContext);
        grid = inflater.inflate(R.layout.grid_single, null);
        TextView textView = (TextView) grid.findViewById(R.id.grid_text);
        ImageView imageView =
            (ImageView)grid.findViewById(R.id.grid_image);
        textView.setText(web[position]);
        imageView.setImageResource(Imageid[position]);
    } else {
```



```
        grid = (View) convertView;  
    }  
    return grid;  
}  
}
```

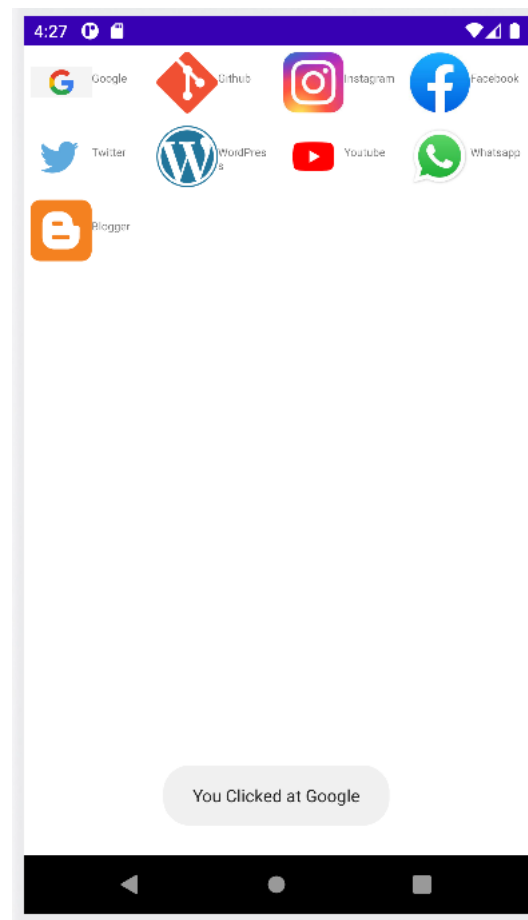
```
package com.example.gridview_image_text_example;  
  
import android.os.Bundle;  
import android.app.Activity;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.GridView;  
import android.widget.Toast;
```

```
public class MainActivity extends Activity {  
    GridView grid;  
    String[] web = {  
        "Google",  
        "Github",  
        "Instagram",  
        "Facebook",  
        "Twitter",  
        "WordPress",  
        "Youtube",  
        "Whatsapp",  
        "Blogger"  
    } ;  
}
```

```
int[] imageId = {
    R.drawable.image1,
    R.drawable.image2,
    R.drawable.image3,
    R.drawable.image4,
    R.drawable.image5,
    R.drawable.image6,
    R.drawable.image7,
    R.drawable.image8,
    R.drawable.image9,
};
```

@Override

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    CustomGrid adapter = new CustomGrid(MainActivity.this, web, imageId);
    grid=(GridView)findViewById(R.id.grid);
    grid.setAdapter(adapter);
    grid.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        @Override
        public void onItemClick(AdapterView<?> parent, View view,
                                int position, long id) {
            Toast.makeText(MainActivity.this, "You Clicked at " +web[+ position],
Toast.LENGTH_SHORT).show();
        }
    });
}
```

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

    <Spinner
        android:id="@+id/spinner"
        android:layout_height="50dp"
        android:layout_width="160dp"
        android:layout_marginEnd="10dp"
        android:layout_marginStart="10dp"
        android:layout_marginBottom="10dp"
        android:layout_marginTop="10dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java Code:**

```
package com.example.spinner;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```

import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {
    String[] country = { "India", "USA", "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);

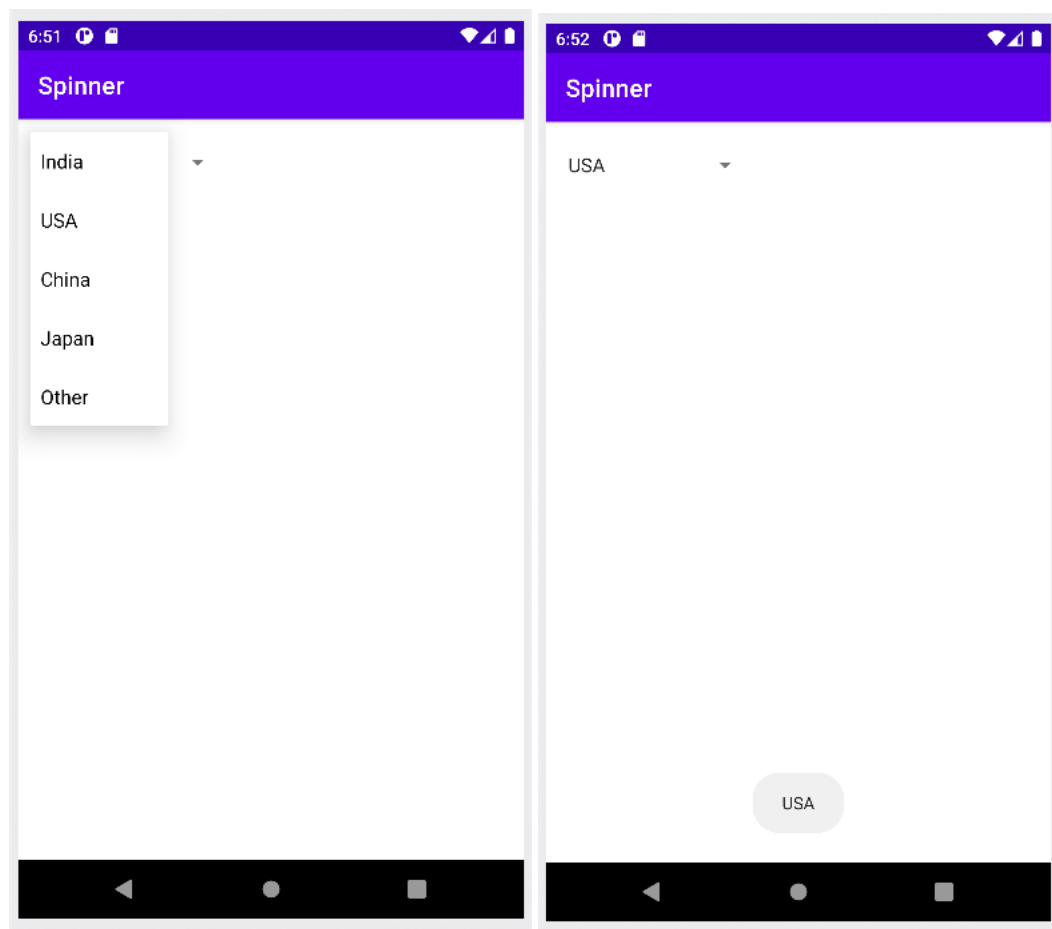
aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item
);
        spin.setAdapter(aa);
    }
    @Override
    public void onItemClick(AdapterView<?> arg0, View arg1, int position,
long id) {
        Toast.makeText(getApplicationContext(),country[position] ,
Toast.LENGTH_LONG).show();
    }

```

@Override

```
public void onNothingSelected(AdapterView<?> arg0) {  
    }  
}
```

### Output:



**Program no:17****Aim:** Apply themes via code and manifest file**XML Code:**

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

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

```
<?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.newstyle">
    <activity
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>
</manifest>

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="teal">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="yellow">#EC971B</color>
    <color name="red">#F80F0F</color>
</resources>

```



```

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

```

### Java Code:

```

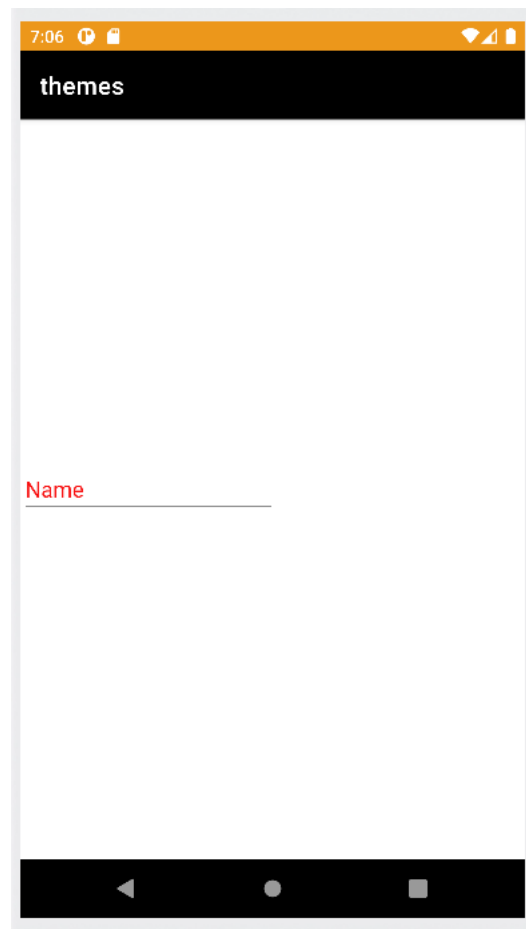
package com.example.themes;

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);
    }
}

```

**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">

    <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:backgroundTint="#2196F3"
            android:text="Fragment1" />

```

```

<Button
    android:id="@+id/b2"
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:layout_alignParentRight="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="30dp"
    android:layout_marginBottom="30dp"
    android:backgroundTint="#FFC107"
    android:text="Fragment2" />

```

```

</RelativeLayout>

```

```

<FrameLayout
    android:id="@+id/frameLayout"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="4"
    android:background="@color/purple_200"/>

```

```

</LinearLayout>

```

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/teal_200"
    tools:context=".Fragment1">

```

```

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:background="#FFEB3B"
    android:text="Fragment1"
    android:textSize="30dp" />

```

```

</RelativeLayout>

```

```

<?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="#FFEB3B"
    tools:context=".Fragment2">

```

```

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:background="#FAA3C1"
    android:text="Fragment2"
    android:textSize="30dp" />

```

```

</RelativeLayout>

```

**Java Code:**

```
package com.example.fragment;

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) {
                replaceFragment(new Fragment1());
            }
        });
    }
}
```

```

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        replaceFragment(new Fragment2());
    }
});
}

```

```

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

```

```

package com.example.fragment;
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) {

```

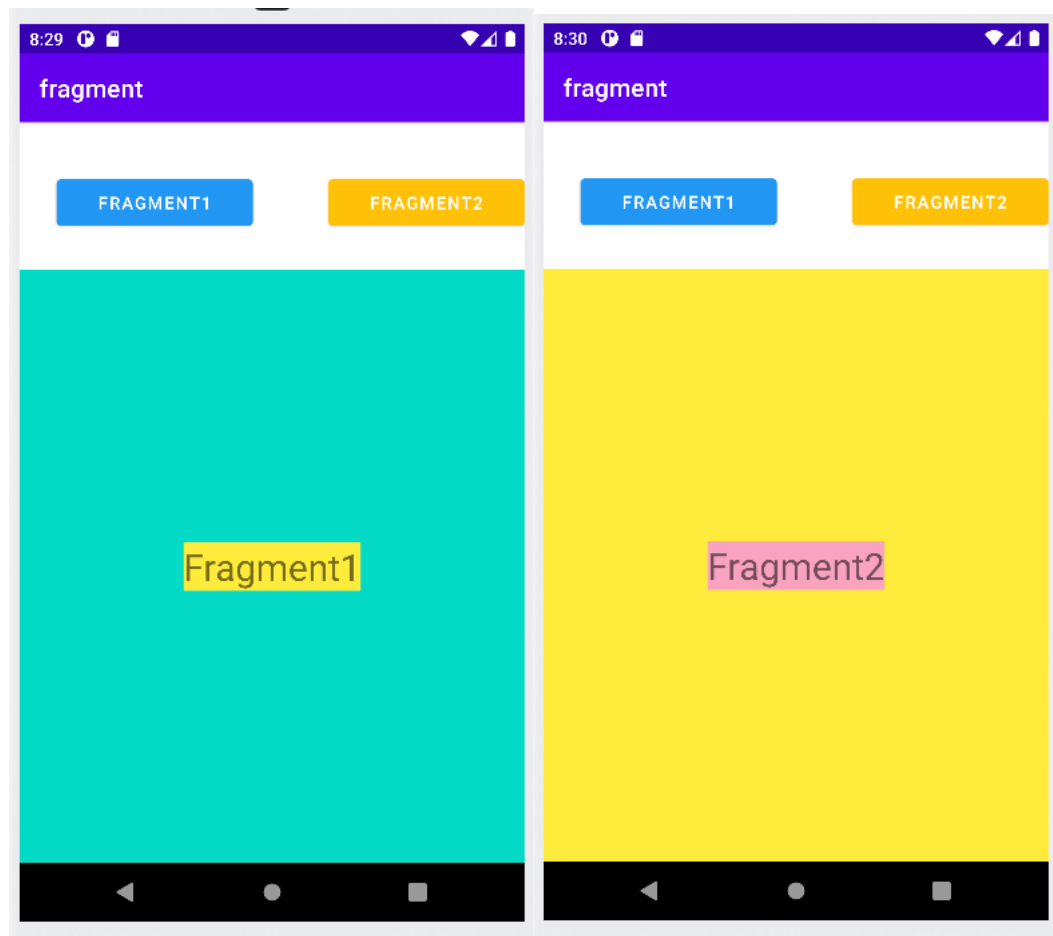
```
        return inflater.inflate(R.layout.fragment_1, container, false);
    }
}

package com.example.fragment;
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) {
        return inflater.inflate(R.layout.fragment_2, container, false);
    }
}
```



**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/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:id="@+id/drawer">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">
        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:text="Welcome"
            android:textSize="30dp">
        </TextView>
    </LinearLayout>
    <com.google.android.material.navigation.NavigationView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        app:menu="@menu/menu"
        android:id="@+id/navigation_view"
        android:layout_gravity="start">

```

```

        </com.google.android.material.navigation.NavigationView>
    </androidx.drawerlayout.widget.DrawerLayout>

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/account"
        android:title="My account"/>
    <item
        android:id="@+id/profile"
        android:title="My profile"/>
    <item
        android:id="@+id/logout"
        android:title="log out"/>
</menu>

```

### Java Code:

```

package com.example.navigation;

import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBarDrawerToggle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.drawerlayout.widget.DrawerLayout;
import android.os.Bundle;
import android.view.MenuItem;
import android.widget.Toast;
import com.google.android.material.navigation.NavigationView;

public class MainActivity extends AppCompatActivity implements
    NavigationView.OnNavigationItemSelectedListener {

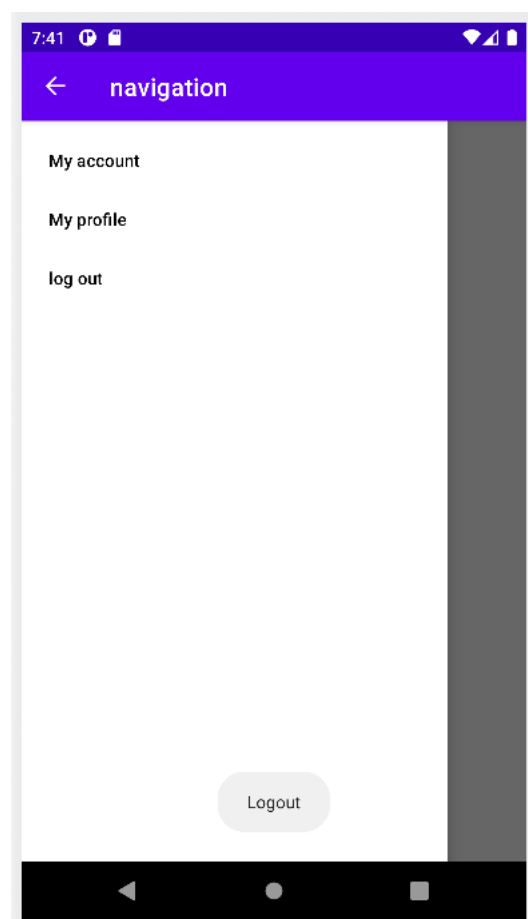
```

```

public DrawerLayout drawerLayout;
public ActionBarDrawerToggle actionBarDrawerToggle;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    drawerLayout = findViewById(R.id.drawer);
    actionBarDrawerToggle = new ActionBarDrawerToggle(this,drawerLayout,
R.string.nav_open, R.string.nav_close);
    drawerLayout.addDrawerListener(actionBarDrawerToggle);
    actionBarDrawerToggle.syncState();
    getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    NavigationView navigationView = findViewById(R.id.navigation_view);
    navigationView.setNavigationItemSelectedListener(this);
}
@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
    if (actionBarDrawerToggle.onOptionsItemSelected(item)){
        return true;
    }
    return super.onOptionsItemSelected(item);
}
@Override
public boolean onNavigationItemSelected(@NonNull MenuItem item) {
    int id=item.getItemId();
    if(id == R.id.account){
        Toast.makeText(this, "Home Page", Toast.LENGTH_SHORT).show();
    }
    if(id == R.id.profile){

```

```
        Toast.makeText(this, "Settings Page",
                        Toast.LENGTH_SHORT).show();
    }
    if(id == R.id.logout){
        Toast.makeText(this, "Logout", Toast.LENGTH_SHORT).show();
    }
    return false;
}
}
```

**Output:**

**Program no: 20**

**Aim:** Program to implement activity life cycle

**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: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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java Code:**

```
package com.example.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:

```

02/26 12:26:59: Launching 'app' on Pixel 5 API 30.
Install successfully finished in 5 s 816 ms.
$ adb shell am start -n "com.example.activitylifecycle/com.example.activitylifecycle.MainActivity" -a android.intent.action.MAIN -c android.intent.category.LAUNCHER
Connected to process 5579 on device 'Pixel_5_API_30 [emulator-5554]'.
Capturing and displaying logcat messages from application. This behavior can be disabled in the "Logcat output" section of the "Debugger" settings page.
D/NetworkSecurityConfig: No Network Security Config specified, using platform default
D/NetworkSecurityConfig: No Network Security Config specified, using platform default
D/libEGL: loaded /vendor/lib/egl/libEGL_emulation.so
D/libEGL: loaded /vendor/lib/egl/libGLESv1_CM_emulation.so
D/libEGL: loaded /vendor/lib/egl/libGLESv2_emulation.so
D/lifecycle: onCreate invoked
D/lifecycle: onStart invoked
D/lifecycle: onResume invoked
D/HostConnection: HostConnection::get() New Host Connection established 0xed7541a0, tid 5599
D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_native_sync_v2 ANDROID_EMU_native_sync_v3 ANDROID_EMU_native_sync_v4 ANDROID_EMU_dma_v1 ANDROID
W/OpenGLESRenderer: Failed to choose config with EGL_SWAP_BEHAVIOR_PRESERVED, retrying without...
D/EGL_emulation: eglCreateContext: 0xed756c10: maj 2 min 0 rcv 2
D/EGL_emulation: eglMakeCurrent: 0xed756c10: ver 2 0 (tinfo 0xedab2b90) (first time)
I/Gralloc4: mapper 4.x is not supported
D/HostConnection: createUnique: call
D/HostConnection: HostConnection::get() New Host Connection established 0xed755780, tid 5599
D/goldfish-address-space: allocate: Ask for block of size 0x100
D/goldfish-address-space: allocate: ioctl allocate returned offset 0x3f3ffe000 size 0x2000
D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_native_sync_v2 ANDROID_EMU_native_sync_v3 ANDROID_EMU_native_sync_v4 ANDROID_EMU_dma_v1 ANDROID
I/tivitylifecycl: Background young concurrent copying GC freed 33716(1607KB) AllocSpace objects, 0(0B) LOS objects, 92% free, 1941KB/25MB, paused 10.395ms total 646.889ms

```



**Program no: 21**

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

**XML Code:**

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

<RelativeLayout

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

    <TextView

        android:id="@+id/texttitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Please enter the details below"
        android:textSize="24dp" />

    <EditText

        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
android:hint="Name"
android:textSize="24dp"
android:layout_below="@+id/texttitle"
android:inputType="textPersonName" />
```

```
<EditText
```

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

```
<EditText
```

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

```
<Button
```

```
    android:id="@+id/buttonInsert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Insert new Data"
```

```
    android:layout_marginTop="30dp"  
    android:layout_below="@+id/dob" />
```

```
<Button
```

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

```
<Button
```

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

```
<Button
```

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

```
</RelativeLayout>
```

**Java Code:**

```

package com.example.sqlite;

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 Varchar(20) primary key,
contact varchar(10), dob varchar(10))");
    }

    @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;
}
}

```

### **MainActivity.java :**

```

package com.example.sqlite;

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

**Output:**