

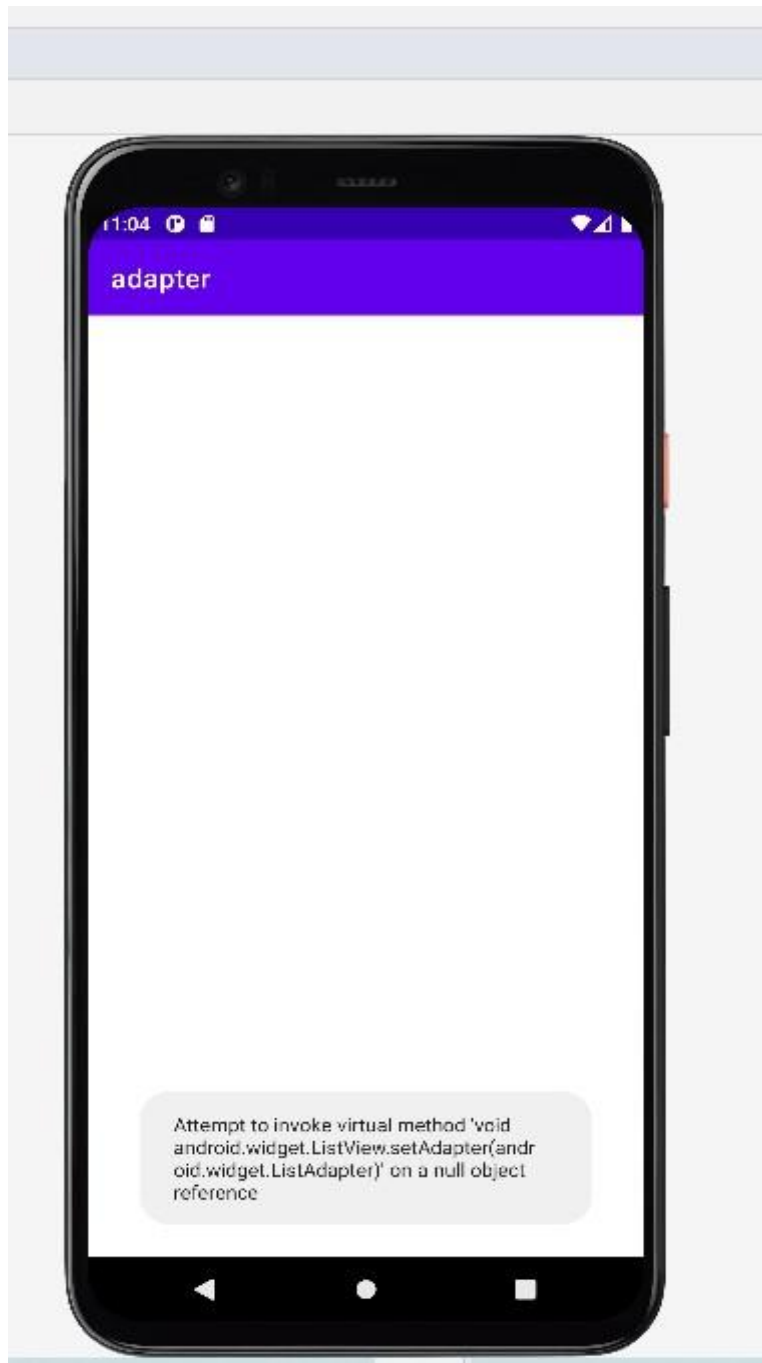
**COURSE OUTCOME 3**  
**&**  
**COURSE OUTCOME 4**

## PROGRAM 1

**AIM:** Implement Adapters and perform exception handling.

MainActivity.java	<pre>package com.example.adapter; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.widget.ArrayAdapter; import android.widget.ListView; import android.widget.Toast; public class MainActivity extends AppCompatActivity {     ListView lv ;     @Override     protected void onCreate(Bundle savedInstanceState)     {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);         try {              String[] actor = new String[] {"mohanlal", "mammootty",             "jayasurya", "asif ali", "pranav", "nivin paully", "tovino", "vineeth",             "dulkar", "fahad"};              ArrayAdapter&lt;String&gt; arrayAdapter = new             ArrayAdapter&lt;String&gt;(MainActivity.this, android.R.layout.simple_list_item_1,             actor);             lv.setAdapter(arrayAdapter);         }         catch (Exception e){              Toast.makeText(this,e.getMessage(),Toast.LENGTH_SHORT).show();         }     } }</pre>
activity_main.xml	<pre>&lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"&gt; &lt;ListView     android:id="@+id/list"     android:layout_width="match_parent"     android:layout_height="match_parent" /&gt; &lt;/RelativeLayout&gt;</pre>

## **OUTPUT**



## **RESULT**

Program has been successfully executed and output is obtained.

## **PROGRAM 2**

**AIM:** Implement Intent to navigate between multiple activities.

MainActivity.java	<pre>package com.example.explicitintent;  import androidx.appcompat.app.AppCompatActivity;  import android.content.Intent; import android.os.Bundle; import android.text.TextUtils; import android.util.Patterns; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.Toast; import java.util.Objects;  public class MainActivity extends AppCompatActivity      {EditText Name;     EditText address;     EditText email;     Button Submit;      @Override     protected void onCreate(Bundle savedInstanceState)         {super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);          Name = findViewById(R.id.name);         address = findViewById(R.id.address);         email = findViewById(R.id.email);         Submit = findViewById(R.id.button);          }      public void callSecondActivity(View view)         { Intent i = new         Intent(getApplicationContext(), MainActivity2.class);         String str = "Name    :    "+ Name.getText().toString();         i.putExtra("Value1", str);         String str1 ="Address :    "+ address.getText().toString();         i.putExtra("Value2", str1);</pre>
-------------------	--

	<pre> String str2 = "Email  :    " + email.getText().toString(); i.putExtra("Value3", str2);  startActivity(i); }  } </pre>
MainActivity2.java	<pre> package com.example.explicitintent;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.content.Intent; import android.view.View; import android.widget.TextView; import android.widget.Toast; public class MainActivity2 extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)     {         TextView t1;         TextView t2;         TextView t3;         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main2);         t1 = (TextView) findViewById(R.id.t1);         t2 = (TextView) findViewById(R.id.t2);         t3 = (TextView) findViewById(R.id.t3);         // create the get Intent object         Intent intent = getIntent();          // receive the value by getStringExtra() method         // and key must be same which is send by first activity         String str = intent.getStringExtra("Value1");         String str1 = intent.getStringExtra("Value2");         String str2 = intent.getStringExtra("Value3");          // display the string into textView         t1.setText(str);         t2.setText(str1);         t3.setText(str2);     } } </pre>

activity_main.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"&gt;  &lt;EditText     android:id="@+id/name"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:ems="10"     android:hint="Name"     android:inputType="textPersonName"     android:minHeight="48dp"     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" /&gt;  &lt;EditText     android:id="@+id/address"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:ems="10"     android:hint="Address"     android:inputType="textPersonName"     android:minHeight="48dp"     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" /&gt;  &lt;EditText     android:id="@+id/email"     android:layout_width="wrap_content" </pre>
-------------------	--

	<pre> android:layout_height="wrap_content" android:ems="10" android:hint="Email" android:inputType="textPersonName" android:minHeight="48dp" 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" /&gt;  &lt;Button     android:id="@+id/button"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:text="Submit"     android:onClick="callSecondActivity"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintHorizontal_bias="0.461"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent"     app:layout_constraintVertical_bias="0.654" /&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_main2.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"&gt;     &lt;TextView         android:id="@+id/t1"         android:layout_width="312dp"         android:layout_height="73dp"         app:layout_constraintBottom_toBottomOf="parent"         app:layout_constraintEnd_toEndOf="parent"         app:layout_constraintHorizontal_bias="0.517"         app:layout_constraintStart_toStartOf="parent"         app:layout_constraintTop_toTopOf="parent"         app:layout_constraintVertical_bias="0.387" /&gt; </pre>

```
<TextView
    android:id="@+id/t2"
    android:layout_width="309dp"
    android:layout_height="77dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.509"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.559" />
```

```
<TextView
    android:id="@+id/t3"
    android:layout_width="313dp"
    android:layout_height="70dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.728" />
```

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



## OUTPUT



SREELEKSHMI

parankimamvila veedu

SREE@gmail.com

SUBMIT





Name : Blessy P Roy

Address : parankimamvila veedu

Email : blessyproy1234@gmail.com

## **RESULT**

Program has been successfully executed and output is obtained.

### **PROGRAM 3**

**AIM:**Develop an application that works with explicit intents.

MainActivity.java	<pre>package com.example.shared;  import androidx.appcompat.app.AppCompatActivity;  import android.content.SharedPreferences; import android.content.Intent; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.RadioButton; import android.widget.RadioGroup; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {     EditText e1,e2,e3,e4,e5;     Button b1;     RadioButton r1,r2;     RadioGroup r;      @Override     protected void onCreate(Bundle savedInstanceState)     {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);         e1=(EditText)findViewById(R.id.name);         e2=(EditText)findViewById(R.id.address);         e3=(EditText)findViewById(R.id.email);         e4=(EditText)findViewById(R.id.password);         e5=(EditText)findViewById(R.id.phno);         b1=(Button)findViewById(R.id.validate1);         r=(RadioGroup)findViewById(R.id.gender);         r1=(RadioButton)findViewById(R.id.male);         r2=(RadioButton)findViewById(R.id.female);         b1.setOnClickListener(new View.OnClickListener() {             @Override             public void onClick(View v)             {                 validate();             }         })     } }</pre>
-------------------	--

```

    });

}
protected void onResume()
{
    super.onResume();
    SharedPreferences sh =
    getSharedPreferences("MySharedPref", MODE_PRIVATE);

    String s1 = sh.getString("name", "");
    String s2 = sh.getString("address", "");
    String s3 = sh.getString("email", "");
    String s4 = sh.getString("phno", "");

    e1.setText(s1);
    e2.setText(s2);
    e3.setText(s3);
    e5.setText(s4);
}
protected void onPause()
{
    super.onPause();
    SharedPreferences sharedPreferences =
    getSharedPreferences("MySharedPref", MODE_PRIVATE);
    SharedPreferences.Editor myEdit = sharedPreferences.edit();
    myEdit.putString("name", e1.getText().toString());
    myEdit.putString("address", e2.getText().toString());
    myEdit.putString("email", e3.getText().toString());
    myEdit.putString("phno", e5.getText().toString());

    myEdit.apply();
}

public void validate()
{
    String name=e1.getText().toString();
    String email=e3.getText().toString().trim();
    String address=e2.getText().toString();
    String password=e4.getText().toString();
    String namePattern="[0-9!@#$$%^&*]";
    String emailPattern="[a-zA-Z0-9._-]+@[a-z]+\.[a-z]+";
    String pno=e5.getText().toString();
    int valid=1;

    if(name.length()==0)
    {
        e1.getText().clear();
    }

```

```

        e1.requestFocus();
        e1.setError("Enter name ");
        Toast.makeText(getApplicationContext(), "Enter valid
name", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(name.matches(".*[0-9].*"))
    {
        e1.getText().clear();
        e1.requestFocus();
        e1.setError("Name contains illegal characters");
        Toast.makeText(getApplicationContext(), "Enter valid
name", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(address.length()==0)
    {
        e2.getText().clear();
        e2.requestFocus();
        e2.setError("Enter address");
        Toast.makeText(getApplicationContext(), "Enter valid
address", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(email.length()==0)
    {
        e3.getText().clear();
        e3.requestFocus();
        e3.setError("Enter email address");
        Toast.makeText(getApplicationContext(), "Enter valid
email", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(!email.matches(emailPattern))
    {
        e3.getText().clear();
        e3.requestFocus();
        e3.setError("Invalid email address");
        Toast.makeText(getApplicationContext(), "Enter valid email
", Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(password.length()==0)
    {
        e4.requestFocus();
        e4.setError("Enter password");
        valid++;
    }

```

```

    }
    if(password.length()<5)
    {
        e4.requestFocus();
        e4.setError("Enter an 8 digit password");
        valid++;
    }
    if(!password.equals("password"))
    {
        Toast.makeText(getApplicationContext(), "Incorrect
password", Toast.LENGTH_SHORT).show();
    }
    if (r.getCheckedRadioButtonId() == -1)
    {
        Toast.makeText(getApplicationContext(), "Please select any
gender", Toast.LENGTH_SHORT).show();
        valid++;
    }
    else
    {
        if(r1.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome
Mr."+name, Toast.LENGTH_SHORT).show();
        }
        if(r2.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome
Ms."+name, Toast.LENGTH_SHORT).show();
        }
    }
    if(pno.length()<10)
    {
        e5.setError("Phone number should be of atleast 10 digits");
        valid++;
    }
    if(valid==1)
    {
        Toast.makeText(getApplicationContext(), "VALIDATION
SUCESSFULL", Toast.LENGTH_SHORT).show();
        Intent i = new Intent(getApplicationContext(),
MainActivity2.class);
        i.putExtra("1", name);
        i.putExtra("2", email);
        i.putExtra("3", address);
    }

```

	<pre> startActivity(i);      }  }  } </pre>
MainActivity2.java	<pre> package com.example.shared;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import android.content.Intent; import android.widget.TextView; import android.view.View;  public class MainActivity2 extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)     {         TextView t1,t2,t3;         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main2);         Bundle extras = getIntent().getExtras();         t1=(TextView) findViewById(R.id.textView1);         t2=(TextView) findViewById(R.id.textView2);         t3=(TextView) findViewById(R.id.textView3);         //t4=(TextView) findViewById(R.id.textView4);         //t5=(TextView) findViewById(R.id.textView5);          String value1 = extras.getString("1");         String value2 = extras.getString("2");         String value3 = extras.getString("3");         t1.setText("Name: "+value1);         t2.setText("Address is "+ value3);         t3.setText("Email is "+ value2);      }     public void callFirstActivity(View view){         Intent i = new Intent(getApplicationContext(), </pre>

	<pre>MainActivity.class);     startActivity(i);     } }</pre>
--	---

activity_main.xml	<pre>&lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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="#FFFFFF"     android:orientation="vertical"     tools:context=".MainActivity"&gt;      &lt;EditText         android:id="@+id/name"         android:layout_width="match_parent"         android:layout_height="wrap_content"         android:backgroundTint="#00BCD4"         android:ems="10"         android:hint="Name"         android:inputType="textPersonName" /&gt;      &lt;EditText         android:id="@+id/address"         android:layout_width="match_parent"         android:layout_height="wrap_content"         android:backgroundTint="#00BCD4"         android:ems="10"         android:hint="Address"         android:inputType="textPersonName"         android:minHeight="48dp" /&gt;      &lt;EditText         android:id="@+id/email"         android:layout_width="match_parent"         android:layout_height="wrap_content"</pre>
-------------------	---



```
android:backgroundTint="#00BCD4"
android:ems="10"
android:hint="Email"
android:inputType="textEmailAddress" />
```

```
<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:backgroundTint="#00BCD4"
    android:ems="10"
    android:hint="Password"
    android:inputType="textPassword" />
```

```
<EditText
    android:id="@+id/phno"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:backgroundTint="#00BCD4"
    android:ems="10"
    android:hint="Phone"
    android:inputType="phone" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:backgroundTint="#00BCD4"
    android:text="Gender"
```

```
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"
    android:textSize="16sp" />
```

```
<RadioGroup
    android:id="@+id/gender"
    android:layout_width="match_parent"
    android:layout_height="99dp">
```

```
<RadioButton
    android:id="@+id/male"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:backgroundTint="#00BCD4"
    android:text="Male" />
```

	<pre> &lt;RadioButton     android:id="@+id/female"     android:layout_width="match_parent"     android:layout_height="wrap_content"     android:backgroundTint="#00BCD4"     android:text="Female" /&gt;  &lt;/RadioGroup&gt;  &lt;Button     android:id="@+id/validate1"     android:layout_width="match_parent"     android:layout_height="wrap_content"     android:backgroundTint="#009688"     android:onClick="callSecondActivity"     android:text="SUBMIT"     android:textSize="20sp" /&gt;  &lt;/LinearLayout&gt; </pre>
activity_main2.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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="#FDFFFF"     android:orientation="vertical"     tools:context=".MainActivity2"&gt;      &lt;TextView         android:id="@+id/textView1"         android:layout_width="match_parent"         android:layout_height="35dp"         android:backgroundTint="#00BCD4"         android:text="Registered User Details"          android:textAppearance="@style/TextAppearance.AppCompat.Body2"         android:textSize="16sp" /&gt;      &lt;TextView         android:id="@+id/textView2"         android:layout_width="match_parent"         android:layout_height="35dp" </pre>

```
android:backgroundTint="#00BCD4"
android:text=""
```

```
android:textAppearance="@style/TextAppearance.AppCompat.Body2"
```

```
android:textSize="16sp" />
```

```
<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:backgroundTint="#00BCD4"
    android:text=""
```

```
android:textAppearance="@style/TextAppearance.AppCompat.Body2"
```

```
android:textSize="16sp" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:backgroundTint="#00BCD4"
    android:text=""
```

```
android:textAppearance="@style/TextAppearance.AppCompat.Body2"
```

```
android:textSize="16sp" />
```

```
<TextView
    android:id="@+id/textView5"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:backgroundTint="#00BCD4"
    android:text=""
```

```
android:textAppearance="@style/TextAppearance.AppCompat.Body2"
```

```
android:textSize="16sp" />
```

```
</LinearLayout>
```

## OUTPUT

shared

sree

sreevilla

bb@gmail.com

.....

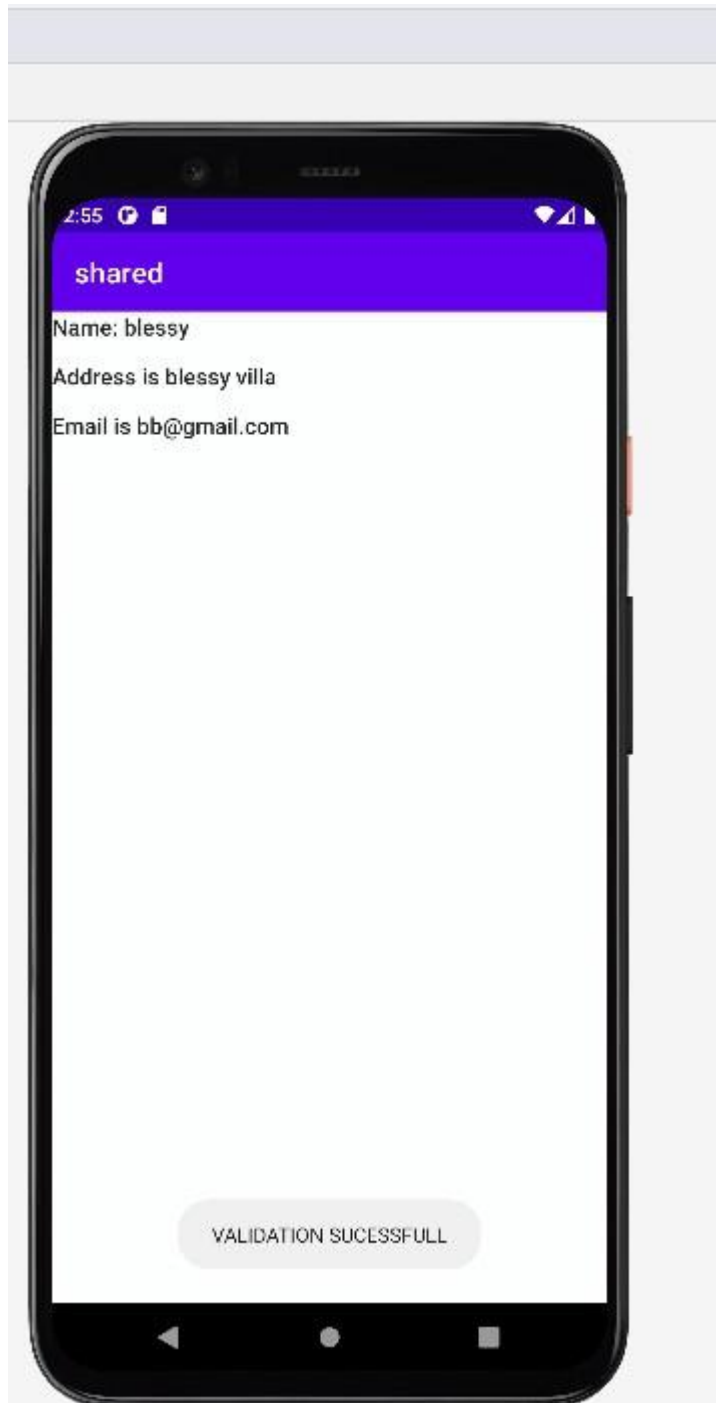
1234567890

Gender

☐ Male

☒ Female

SUBMIT



## **RESULT**

Program has been successfully executed and output is obtained.

## PROGRAM 4

**AIM:** Implement Options Menu to navigate to activities.

MainActivity.java	<pre>package com.example.option;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle; import androidx.annotation.NonNull; import android.content.Intent; import android.view.Menu; import android.view.MenuInflater; import android.view.MenuItem;  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)     {         MenuInflater i= getMenuInflater();         i.inflate(R.menu.menu_option,menu);         return true;         // return super.onCreateOptionsMenu(menu);     }      @Override     public boolean onOptionsItemSelected(@NonNull MenuItem item)     {         int id=item.getItemId();         if(id==R.id.action_contact)         {             Intent contactintent=new Intent(MainActivity.this,contact.class);             startActivity(contactintent);         }         if(id==R.id.action_settings)         {             Intent settingsintent=new</pre>
-------------------	---

	<pre> Intent(MainActivity.this,settings.class);     startActivity(settingsintent);     }     if (id==R.id.action_help)     {         Intent helpintent=new Intent(MainActivity.this,help.class);         startActivity(helpintent);     }     if(id==R.id.action_share)     {         Intent shareintent=new Intent(MainActivity.this,share.class);         startActivity(shareintent);     }     return super.onOptionsItemSelected(item);      } } </pre>
contact.java	<pre> package com.example.option; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle;  public class contact extends AppCompatActivity      {         @Override         protected void onCreate(Bundle savedInstanceState)         {             super.onCreate(savedInstanceState);             setContentView(R.layout.activity_contact);         }     } } </pre>
help.java	<pre> package com.example.option;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle;  public class help extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)     {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_help);     } } </pre>

settings.java	<pre> package com.example.option;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle;  public class settings extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)     {super.onCreate(savedInstanceState);     setContentView(R.layout.activity_settings);     } } </pre>
share.java	<pre> package com.example.option;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle;  public class share extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)     {super.onCreate(savedInstanceState);     setContentView(R.layout.activity_share);     } } </pre>

activity_main.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"&gt;  &lt;TextView     android:id="@+id/textView" </pre>
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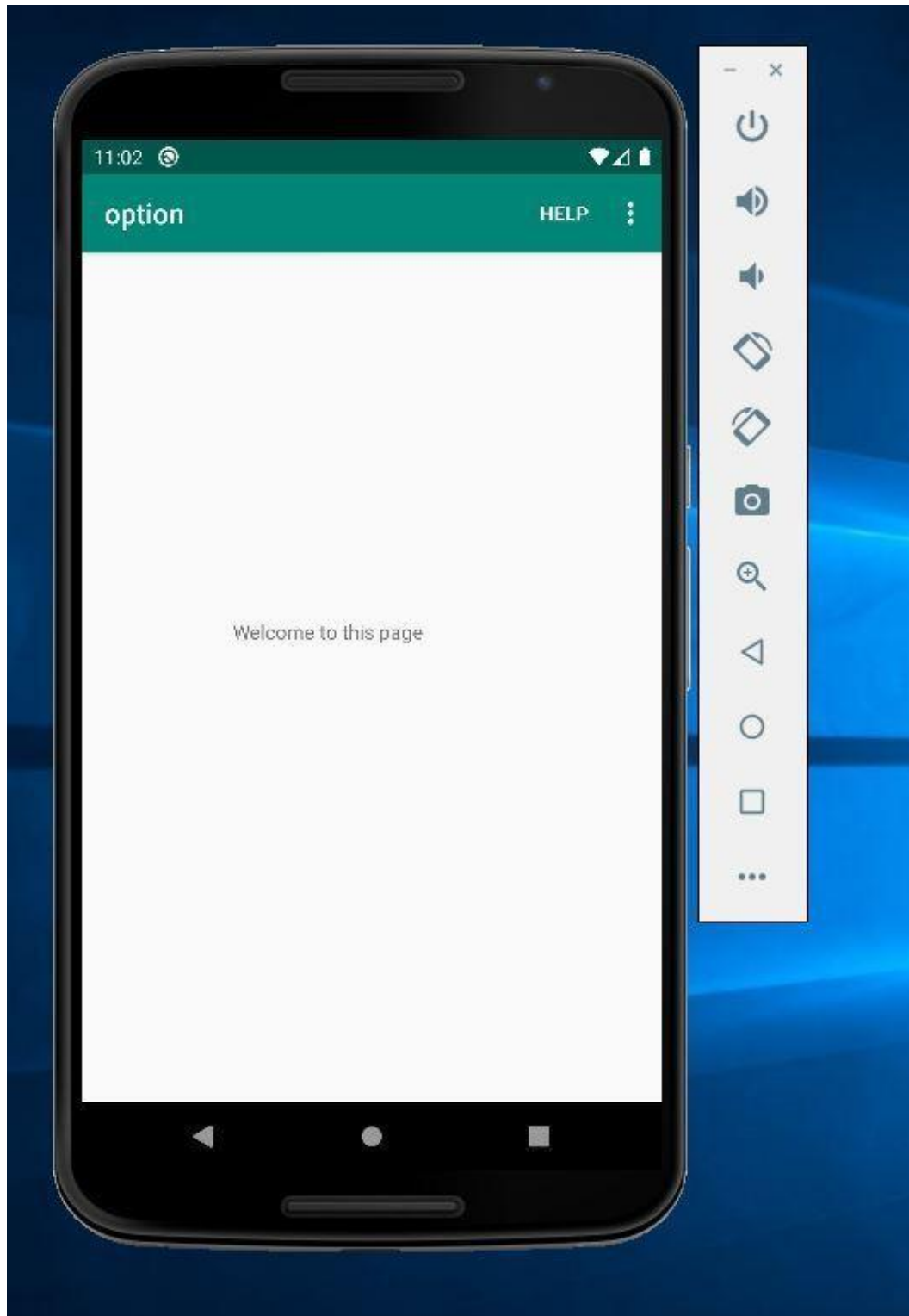


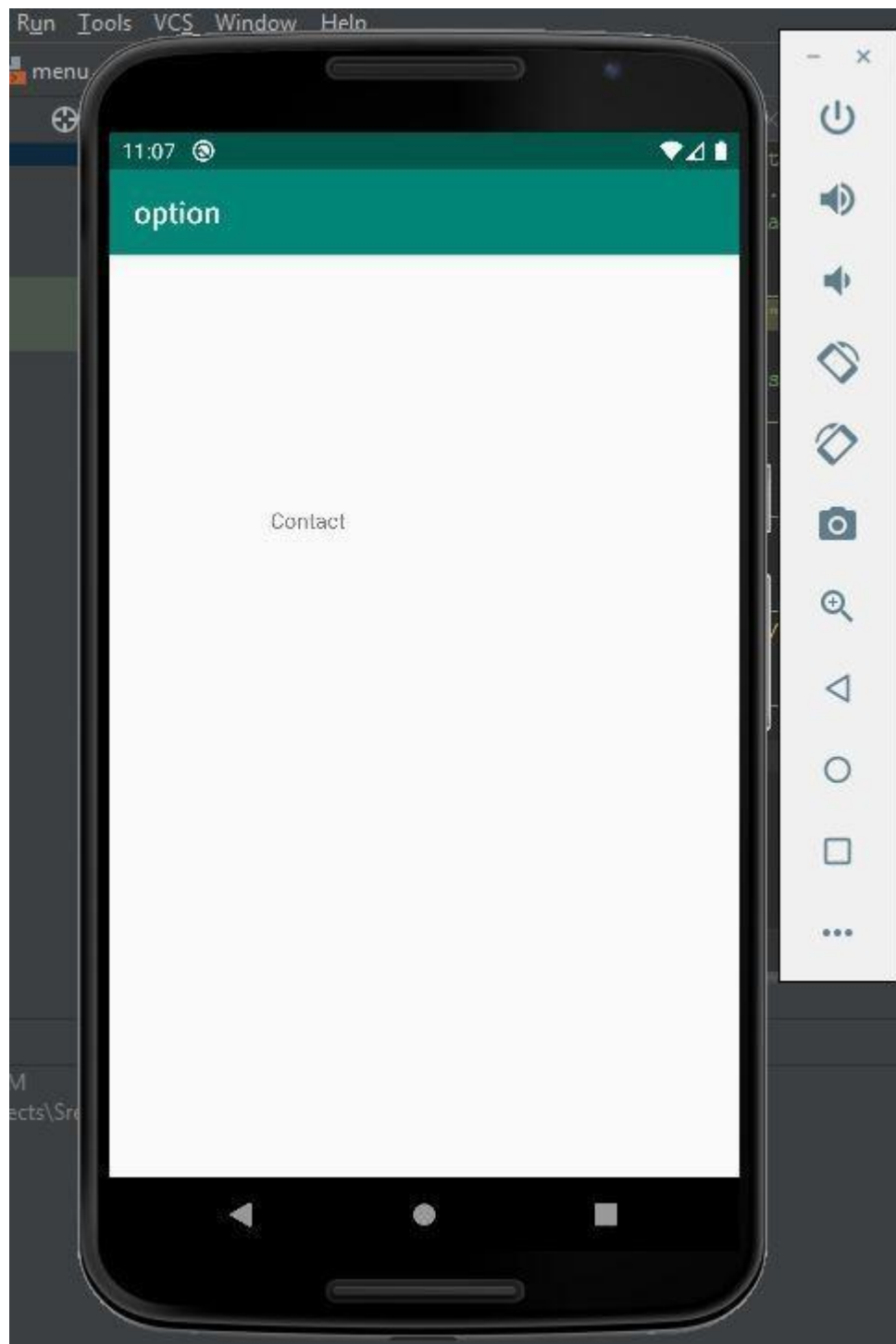
	<pre> android:layout_width="197dp" android:layout_height="84dp" android:text="Welcome to this page" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_contact.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".contact"&gt; &lt;TextView     android:id="@+id/textView2"     android:layout_width="172dp"     android:layout_height="45dp"     android:text="Contact"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintHorizontal_bias="0.439"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent"     app:layout_constraintVertical_bias="0.294" /&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_help.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".help"&gt;  &lt;TextView     android:id="@+id/textView2"     android:layout_width="172dp"     android:layout_height="45dp"     android:text="Help"     app:layout_constraintBottom_toBottomOf="parent" </pre>

	<pre> app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.439" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" app:layout_constraintVertical_bias="0.294" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_settings.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".settings"&gt; &lt;TextView     android:id="@+id/textView2"     android:layout_width="172dp"     android:layout_height="45dp"     android:text="Settings"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintHorizontal_bias="0.439"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent"     app:layout_constraintVertical_bias="0.294" /&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_share.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".share"&gt; &lt;TextView     android:id="@+id/textView2"     android:layout_width="172dp"     android:layout_height="45dp"     android:text="Share"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintHorizontal_bias="0.439"     app:layout_constraintStart_toStartOf="parent" </pre>

	<pre> app:layout_constraintTop_toTopOf="parent" app:layout_constraintVertical_bias="0.294" /&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
menu_option.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;menu xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:android="http://schemas.android.com/apk/res/android"&gt;   &lt;item     android:id="@+id/action_settings"     android:title="settings"/&gt;   &lt;item     app:showAsAction="always"     android:id="@+id/action_help"     android:title="help"/&gt;   &lt;item     android:id="@+id/action_home"     android:title="home"/&gt;   &lt;item     android:id="@+id/action_contact"     android:title="contact"/&gt;   &lt;item     android:id="@+id/action_share"     android:title="share"/&gt; &lt;/menu&gt; </pre>

## OUTPUT





## **RESULT**

Program has been successfully executed and output is obtained.

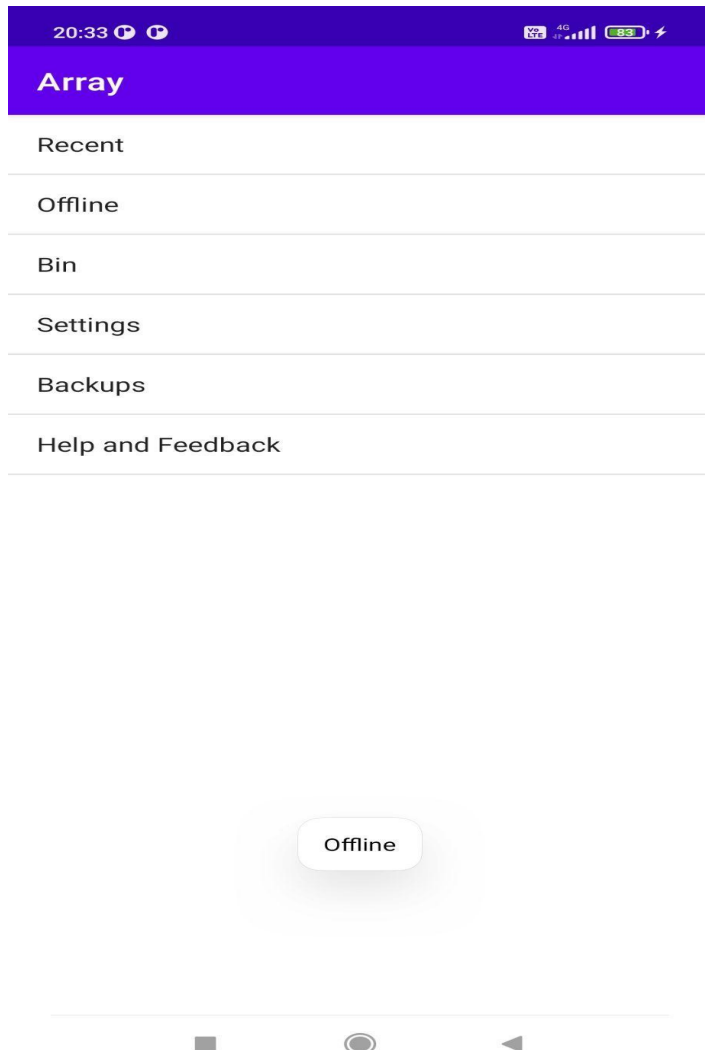
## PROGRAM 5

**AIM:** Develop an application that uses ArrayAdapter with ListView.

MainActivity.java	<pre>package com.example.array;  import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.ListView; import android.widget.AdapterView; import android.widget.AdapterView.OnItemClickListener; import android.widget.ArrayAdapter; import android.widget.Toast;  public class MainActivity extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState) {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);         ListView list=findViewById(R.id.listview);         String[] item=new String[] {"Recent","Offline","Bin","Settings","Backups","Help and Feedback"};         ArrayAdapter&lt;String&gt; myAdapter=new ArrayAdapter&lt;String&gt;(MainActivity.this, android.R.layout.simple_list_item_1,item);         list.setAdapter(myAdapter);         list.setOnItemClickListener(new AdapterView.OnItemClickListener() {              @Override             public void onItemClick(AdapterView&lt;?&gt; parent,View view,int position,long id) {                 String item_name=item[position];                 Toast.makeText(MainActivity.this,item_name, Toast.LENGTH_SHORT).show();             }          });     } }</pre>
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activity_main.xml	<pre>&lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"&gt; &lt;ListView     android:id="@+id/listview"     android:layout_width="409dp"     android:layout_height="729dp"     tools:layout_editor_absoluteX="1dp"     tools:layout_editor_absoluteY="1dp"     tools:ignore="MissingConstraints" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt;</pre>
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## **OUTPUT**



## **RESULT**

Program has been successfully executed and output is obtained.



## PROGRAM 1

**AIM:** Develop an application that uses GridView with images and displays an Alert box on selection.

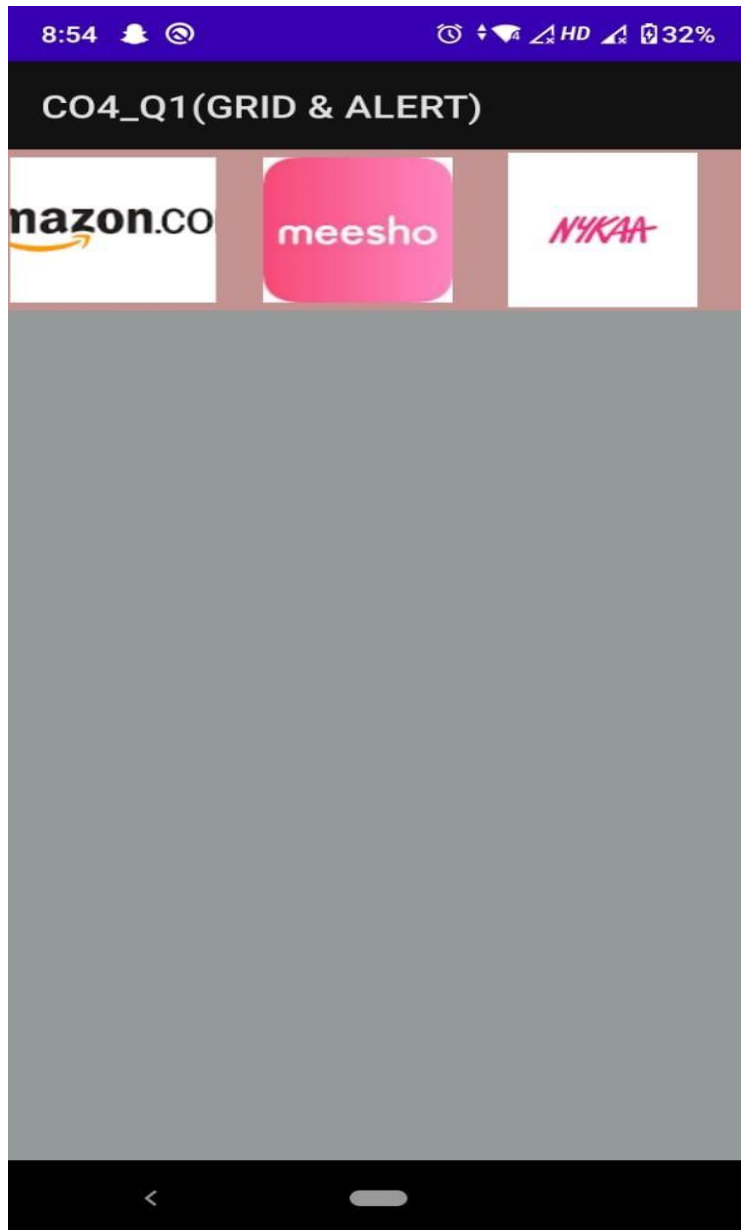
MainActivity.java	<pre>package com.example.co4_q1gridalert;  import androidx.appcompat.app.AlertDialog; import androidx.appcompat.app.AppCompatActivity; import android.content.Context; import android.content.DialogInterface; import android.os.Bundle; import android.view.View; import android.widget.AdapterView; import android.widget.GridView;  public class MainActivity extends AppCompatActivity {     GridView gd;     int logos[] = {R.drawable.d1,R.drawable.d2, R.drawable.d3};     String[] names = {"AMAZON","Meesho","Nykaa"};     final Context context = this;     AlertDialog.Builder builder;      @Override     protected void onCreate(Bundle savedInstanceState)     {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);         GridView gv = (GridView) findViewById(R.id.gridView);         gv.setAdapter(new ImageAdapter(this));         builder = new AlertDialog.Builder(this);          gv.setOnItemClickListener(new         AdapterView.OnItemClickListener() {             public void onItemClick(AdapterView&lt;?&gt; parent, View v,             int position, long id) {                  builder.setMessage("Website Name :                 "+String.valueOf(names[position]))                 .setCancelable(false)                 .setPositiveButton("Ok", new                 DialogInterface.OnClickListener() {                     public void onClick(DialogInterface dialog, int id)                     {                  }             }         }     } }</pre>
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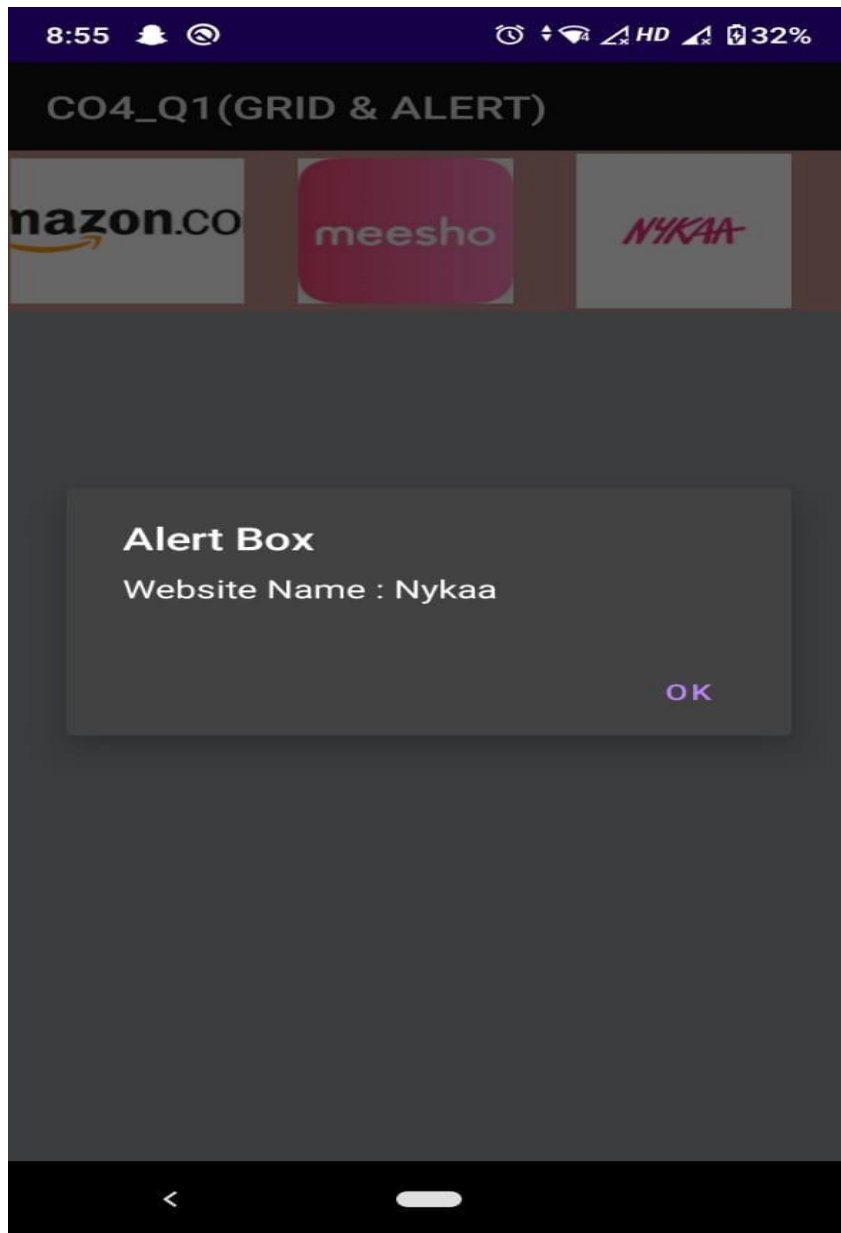
	<pre>         });          AlertDialog alert = builder.create();          alert.setTitle("Alert Box");         alert.show();     }     }); } } </pre>
ImageAdapter.java	<pre> package com.example.co4_q1gridalert;  import android.content.Context; import android.view.View; import android.view.ViewGroup; import android.widget.BaseAdapter; import android.widget.GridView; import android.widget.ImageView;  public class ImageAdapter extends BaseAdapter {     private Context mContext;     public ImageAdapter(Context c) {         mContext = c;     }     public int getCount() {         return thumbImages.length;     }     public Object getItem(int position) {         return null;     }     public long getItemId(int position) {         return 0;     }     public View getView(int position, View convertView, ViewGroup parent) {         ImageView imageView = new ImageView(mContext);         imageView.setLayoutParams(new GridView.LayoutParams(200, 200));          imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);         imageView.setPadding(8, 8, 8, 8);         imageView.setImageResource(thumbImages[position]);         return imageView;     } } </pre>

	<pre> public Integer[] thumbImages =     {R.drawable.d1,      R.drawable.d2,      R.drawable.d3     }; } </pre>
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activity_main.xml	<pre> &lt;?xml version="1.0" encoding="UTF-8"?&gt;  &lt;LinearLayout tools:context=".MainActivity"     android:background="#94999A"     android:layout_height="match_parent"     android:layout_width="match_parent"     xmlns:tools="http://schemas.android.com/tools"     xmlns:app="http://schemas.android.com/apk/res-auto"     xmlns:android="http://schemas.android.com/apk/res/android"&gt;      &lt;GridView android:background="#DFB7E6"         android:layout_height="wrap_content"         android:layout_width="fill_parent" android:padding="1dp"         android:numColumns="3" android:footerDividersEnabled="false"         android:backgroundTint="#C59292" android:id="@+id/gridView"/&gt;  &lt;/LinearLayout&gt; </pre>
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## OUTPUT





## **RESULT**

Program has been successfully executed and output is obtained.

## PROGRAM 2

**AIM:** Develop an application that implements Spinner components and perform event handling.

MainActivity.java	<pre>package com.example.spinner;  import androidx.appcompat.app.AppCompatActivity;  import android.view.View; import android.widget.AdapterView; import android.widget.AdapterView.OnItemClickListener; import android.os.Bundle; import android.widget.ArrayAdapter; import android.widget.Spinner; import android.widget.Toast;  public class MainActivity extends AppCompatActivity implements     AdapterView.OnItemClickListener {     String[] fruit = {"APPLE", "ORANGE", "GRAPE", "PASSION FRUIT", "BANANA", "OTHERS"};      @Override     protected void onCreate(Bundle savedInstanceState)     {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);         //Getting the instance of Spinner and applying         OnItemClickListener on it         Spinner spin = (Spinner) findViewById(R.id.spinner);         spin.setOnItemSelectedListener(this);          //Creating the ArrayAdapter instance having the country list         ArrayAdapter aa = new ArrayAdapter(this,         android.R.layout.simple_spinner_item, fruit);          aa.setDropDownViewResource(android.R.layout.simple_spinner_d         ropdown_item);         //Setting the ArrayAdapter data on the Spinner         spin.setAdapter(aa);      }      //Performing action onItemSelected and onNothing selected     @Override     public void onItemSelected(AdapterView&lt;?&gt; arg0, View arg1,</pre>
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	<pre> int position, long id)     { Toast.makeText(getApplicationContext(),       fruit[position],       Toast.LENGTH_LONG).show();     }      @Override     public void onNothingSelected(AdapterView&lt;?&gt; arg0) {         // TODO Auto-generated method stub     } } </pre>
--	--

activity_main.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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:id="@+id/button" android:layout_width="match_parent" android:layout_height="match_parent" android:background="#C1D5E4" android:backgroundTint="#76C7EC" tools:context=".MainActivity"&gt;  &lt;Spinner     android:id="@+id/spinner"     android:layout_width="160dp"     android:layout_height="50dp"     android:layout_marginStart="124dp"     android:layout_marginTop="268dp"     android:background="#FFFDFF"     android:backgroundTint="#FFF9F9"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent"     tools:ignore="SpeakableTextPresentCheck" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
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## OUTPUT







## **RESULT**

Program has been successfully executed and output is obtained.

### PROGRAM 3

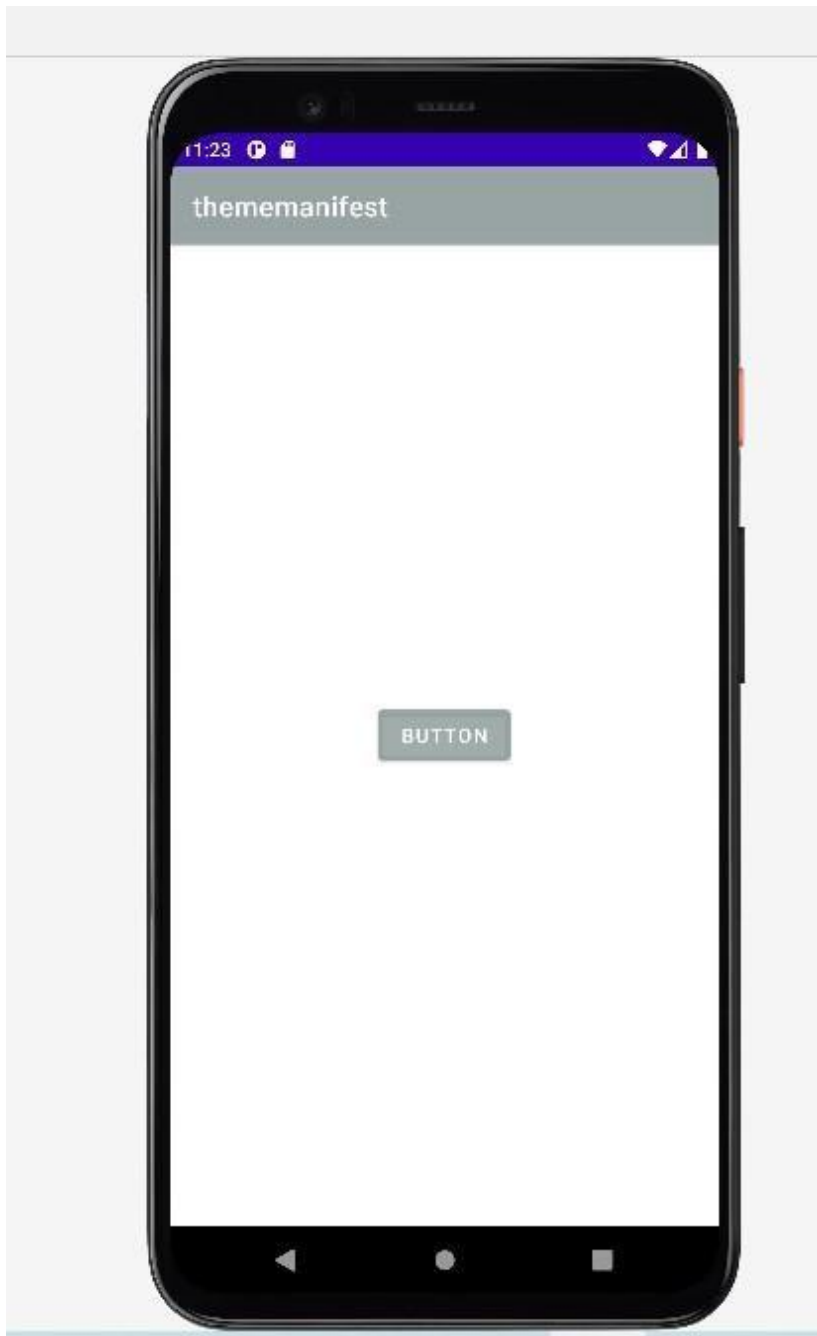
**AIM:**Apply themes via code and manifest file.

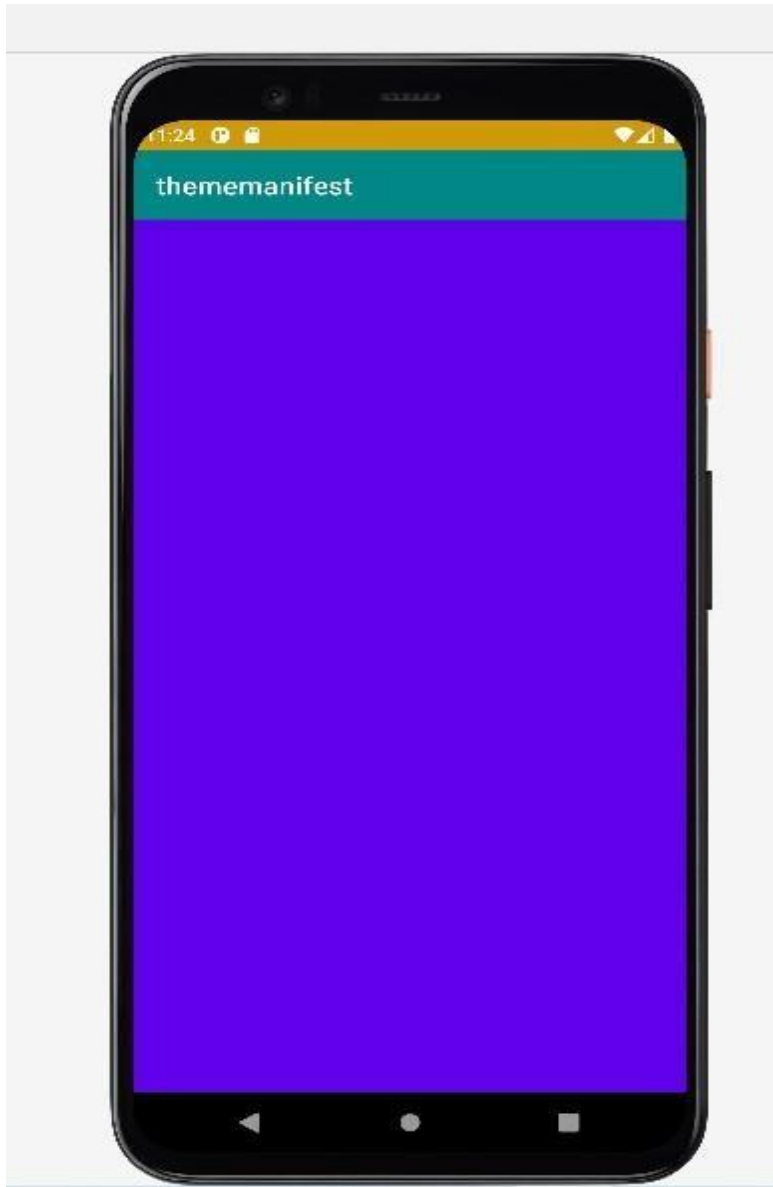
MainActivity.java	<pre>package com.example.thememanifest;  import androidx.appcompat.app.AppCompatActivity;  import android.content.Intent; import android.os.Bundle; import android.view.View;  public class MainActivity extends AppCompatActivity      { @Override     protected void onCreate(Bundle savedInstanceState)         { super.onCreate(savedInstanceState);           setContentView(R.layout.activity_main);         }     public void click(View view)     {         Intent i=new Intent(this,MainActivity2.class);         startActivity(i);     }     }</pre>
MainActivity2.java	<pre>package com.example.thememanifest;  import androidx.appcompat.app.AppCompatActivity;  import android.os.Bundle;  public class MainActivity2 extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState)         { super.onCreate(savedInstanceState);           setContentView(R.layout.activity_main2);         }     }</pre>
activity_main.xml	<pre>&lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto"</pre>

	<pre> xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent" android:layout_height="match_parent" tools:context=".MainActivity"&gt;  &lt;Button     android:id="@+id/button"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:layout_marginStart="158dp"     android:layout_marginTop="341dp"     android:layout_marginEnd="159dp"     android:layout_marginBottom="342dp"     android:onClick="click"     android:text="Button"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent" /&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
activity_main2.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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"/&gt; </pre>
theme.xml	<pre> &lt;resources xmlns:tools="http://schemas.android.com/tools"&gt;     &lt;!-- Base application theme. --&gt;     &lt;style name="Theme.Thememanifest"         parent="Theme.MaterialComponents.DayNight.DarkActionBar"&gt;         &lt;!-- Primary brand color. --&gt;         &lt;item name="colorPrimary"&gt;#C899&lt;/item&gt;         &lt;item name="colorPrimaryVariant"&gt;@color/purple_700&lt;/item&gt;         &lt;item name="colorOnPrimary"&gt;@color/white&lt;/item&gt;         &lt;!-- Secondary brand color. --&gt;         &lt;item name="colorSecondary"&gt;@color/teal_200&lt;/item&gt;         &lt;item name="colorSecondaryVariant"&gt;@color/teal_700&lt;/item&gt;         &lt;item name="colorOnSecondary"&gt;#D78666&lt;/item&gt;         &lt;!-- Status bar color. --&gt;         &lt;item name="android:statusBarColor"             tools:targetApi="l"&gt;?attr/colorPrimaryVariant&lt;/item&gt; </pre>

	<pre>         &lt;!-- Customize your theme here. --&gt;     &lt;/style&gt;     &lt;style name="Theme.Thememanifest1" parent="Theme.MaterialComponents.DayNight.DarkActionBar"&gt;         &lt;!-- Primary brand color. --&gt;         &lt;item name="colorPrimary"&gt;@color/teal_700&lt;/item&gt;         &lt;item name="android:windowBackground"&gt;@color/purple_500&lt;/item&gt;         &lt;item name="colorPrimaryVariant"&gt;#D09909&lt;/item&gt;         &lt;item name="colorOnPrimary"&gt;@color/white&lt;/item&gt;         &lt;!-- Secondary brand color. --&gt;         &lt;item name="colorSecondary"&gt;@color/teal_200&lt;/item&gt;         &lt;item name="colorSecondaryVariant"&gt;@color/purple_200&lt;/item&gt;         &lt;item name="colorOnSecondary"&gt;#D54444&lt;/item&gt;         &lt;!-- Status bar color. --&gt;         &lt;item name="android:statusBarColor" tools:targetApi="1"&gt;?attr/colorPrimaryVariant&lt;/item&gt;         &lt;!-- Customize your theme here. --&gt;     &lt;/style&gt; &lt;/resources&gt; </pre>
AndroidManifest.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;manifest xmlns:android="http://schemas.android.com/apk/res/android" package="com.example.thememanifest"&gt;      &lt;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.Thememanifest"&gt;         &lt;activity             android:name=".MainActivity2"             android:theme="@style/Theme.Thememanifest1"             android:exported="false" /&gt;         &lt;activity             android:name=".MainActivity"             android:exported="true"&gt;             &lt;intent-filter&gt;                 &lt;action android:name="android.intent.action.MAIN" /&gt;             &lt;/intent-filter&gt;             &lt;category android:name="android.intent.category.LAUNCHER" /&gt;         &lt;/activity&gt;     &lt;/application&gt; &lt;/manifest&gt; </pre>

## OUTPUT





## **RESULT**

Program has been successfully executed and output is obtained.

## PROGRAM 4

**AIM:** Develop application using Fragments.

MainActivity.java	<pre>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.Toast;  public class MainActivity extends AppCompatActivity {      @Override     protected void onCreate(Bundle savedInstanceState) {         super.onCreate(savedInstanceState);         setContentView(R.layout.activity_main);     }      public void fragement1Start(View view){         replaceFragement(new Fragment1());     }      public void fragement2Start(View view){         replaceFragement(new Fragment2());     }      public void replaceFragement(Fragment pragment){         FragmentManager fm = getSupportFragmentManager();         FragmentTransaction ft = fm.beginTransaction();         ft.replace(R.id.fra,pragment);         ft.commit();     }  }</pre>
Fragment1.java	<pre>package com.example.fragment;  import android.os.Bundle;  import androidx.fragment.app.Fragment;</pre>

	<pre> import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup;  public class Fragment1 extends Fragment {     @Override     public View onCreateView(LayoutInflater inflater, ViewGroup container,         Bundle savedInstanceState) {         // Inflate the layout for this fragment         return inflater.inflate(R.layout.fragment_1, container, false);     } } </pre>
Fragment2.java	<pre> 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;  import android.os.Bundle;  import androidx.fragment.app.Fragment;  import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup;  public class Fragment2 extends Fragment  {     @Override     public View onCreateView(LayoutInflater inflater, ViewGroup container,         Bundle savedInstanceState) {         // Inflate the layout for this fragment         return inflater.inflate(R.layout.fragment_2, container, false);     } } </pre>

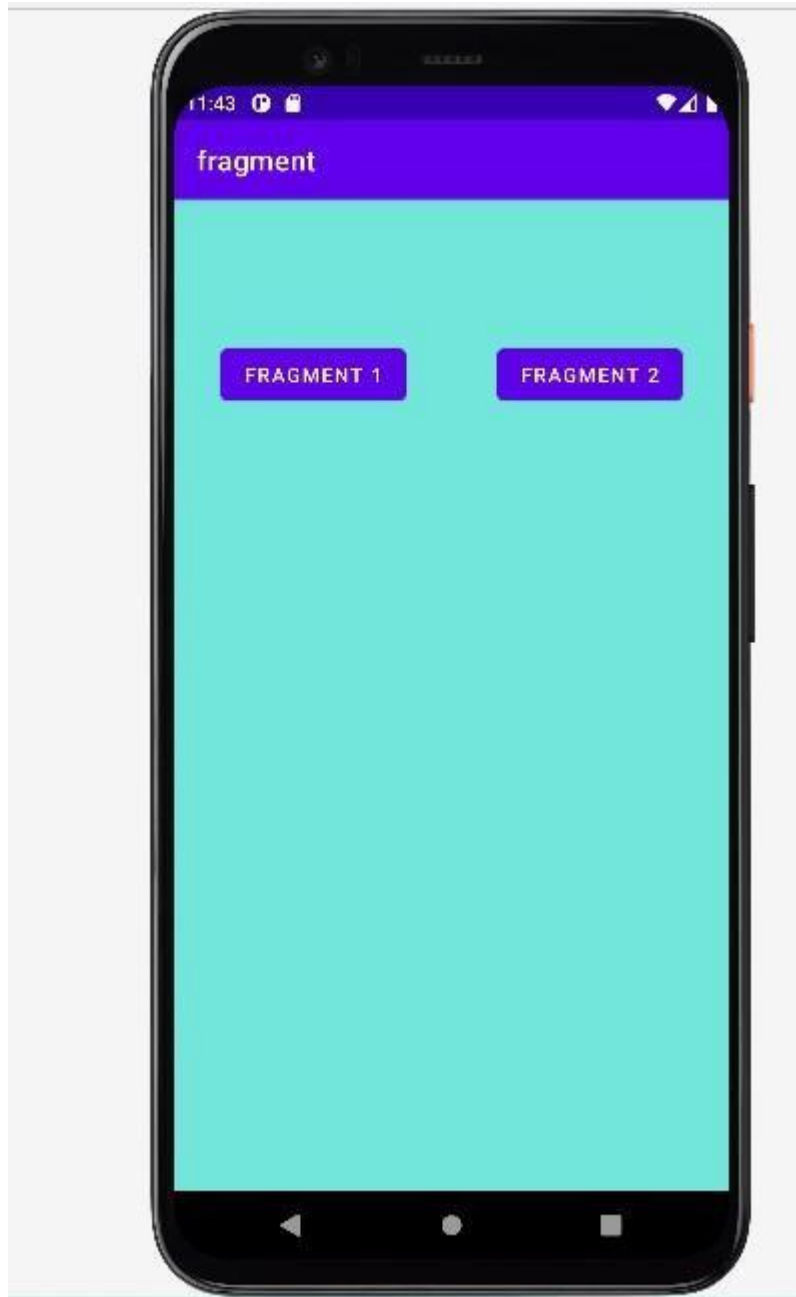


activity_main.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent" android:layout_height="match_parent" android:background="#72E6DB" tools:context=".MainActivity"&gt;  &lt;Button     android:id="@+id/f2"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:layout_marginStart="32dp"     android:layout_marginTop="100dp"     android:onClick="fragment2Start"     android:text="Fragment 2"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintHorizontal_bias="0.5"     app:layout_constraintStart_toEndOf="@+id/f1"     app:layout_constraintTop_toTopOf="parent" /&gt; &lt;Button     android:id="@+id/f1"     android:layout_width="wrap_content"     android:layout_height="wrap_content"     android:layout_marginTop="100dp"     android:onClick="fragment1Start"     android:text="Fragment 1"     app:layout_constraintEnd_toStartOf="@+id/f2"     app:layout_constraintHorizontal_bias="0.5"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent" /&gt; &lt;FrameLayout     android:id="@+id/fra"     android:layout_width="409dp"     android:layout_height="581dp"     android:backgroundTint="#FBDCD2"     tools:layout_editor_absoluteX="2dp"     tools:layout_editor_absoluteY="148dp"&gt; &lt;/FrameLayout&gt;  &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
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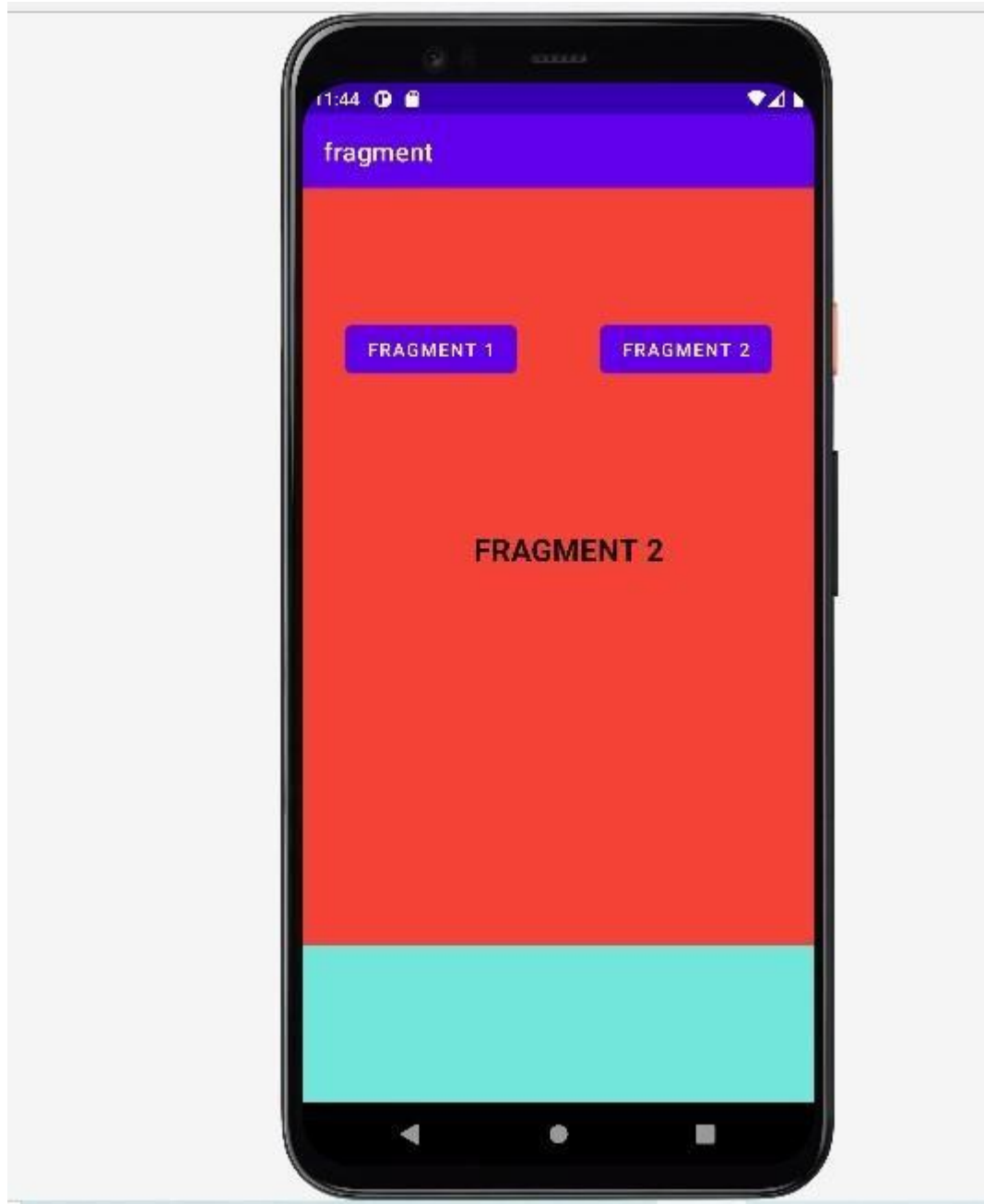
fragment_1.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools" android:id="@+id/frameLayout2" android:layout_width="match_parent" android:layout_height="match_parent" android:background="#8D9822" tools:context=".Fragment1"&gt; &lt;TextView     android:id="@+id/textView2"     android:layout_width="154dp"     android:layout_height="46dp"     android:text="FRAGMENT 1"     android:textAlignment="center"     android:textColor="#0A123E"     android:textSize="24sp"     android:textStyle="bold italic"     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="0.499" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
fragment_2.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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:id="@+id/frameLayout" android:layout_width="match_parent" android:layout_height="match_parent" android:background="#F44336" tools:context=".Fragment2"&gt; &lt;!-- TODO: Update blank fragment layout --&gt; &lt;TextView     android:id="@+id/textView"     android:layout_width="153dp"     android:layout_height="59dp"     android:text="FRAGMENT 2"     android:textAlignment="center"     android:textColor="#121111"     android:textSize="24sp" </pre>

	<pre>android:textStyle="bold" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt;</pre>
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## **OUTPUT**







## **RESULT**

Program has been successfully executed and output is obtained.

## PROGRAM 5

**AIM:** Implement Navigation drawer.

MainActivity.java	<pre>package com.example.navigation; import android.os.Bundle; import android.view.View; import android.view.Menu; import com.google.android.material.snackbar.Snackbar; import com.google.android.material.navigation.NavigationView; import androidx.navigation.NavController; import androidx.navigation.Navigation; import androidx.navigation.ui.AppBarConfiguration; import androidx.navigation.ui.NavigationUI; import androidx.drawerlayout.widget.DrawerLayout; import androidx.appcompat.app.AppCompatActivity; import com.example.navigation.databinding.ActivityMainBinding;  public class MainActivity extends AppCompatActivity {      private AppBarConfiguration mAppBarConfiguration;     private ActivityMainBinding binding;      @Override     protected void onCreate(Bundle savedInstanceState)     {super.onCreate(savedInstanceState);          binding = ActivityMainBinding.inflate(getLayoutInflater());         setContentView(binding.getRoot());          setSupportActionBar(binding.appBarMain.toolbar);         binding.appBarMain.fab.setOnClickListener(new View.OnClickListener()     { @Override         public void onClick(View view) {             Snackbar.make(view, "Replace with your own action", Snackbar.LENGTH_LONG)                 .setAction("Action", null).show();         }     });         DrawerLayout drawer = binding.drawerLayout;         NavigationView navigationView = binding.navView;         // Passing each menu ID as a set of Ids because each         // menu should be considered as top level destinations.         mAppBarConfiguration = new AppBarConfiguration.Builder(</pre>
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	<pre>         R.id.nav_home, R.id.nav_gallery,         R.id.nav_slideshow, R.id.nav_contact)         .setOpenableLayout(drawer)         .build();         NavController navController = Navigation.findNavController(this,         R.id.nav_host_fragment_content_main);         NavigationUI.setupActionBarWithNavController(this,         navController, mAppBarConfiguration);         NavigationUI.setupWithNavController(navigationView,         navController);     }      @Override     public boolean onCreateOptionsMenu(Menu menu) {         // Inflate the menu; this adds items to the action bar if it is present.         getMenuInflater().inflate(R.menu.main, menu);         return true;     }      @Override     public boolean onSupportNavigateUp() {         NavController navController = Navigation.findNavController(this,         R.id.nav_host_fragment_content_main);         return NavigationUI.navigateUp(navController,         mAppBarConfiguration)                super.onSupportNavigateUp();     } } </pre> <p>© 2022 GitHub, Inc.  <a href="#">Terms</a>  <a href="#">Privacy</a></p>
GalleryFragment.java	<pre> 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) {         // Inflate the layout for this fragment         return inflater.inflate(R.layout.fragment_1, container, false);     } } </pre>

GalleryViewModel.java	<pre> 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; import android.os.Bundle; import androidx.fragment.app.Fragment; import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup;  public class Fragment2 extends Fragment      {         @Override         public View onCreateView(LayoutInflater inflater, ViewGroup         container,                                 Bundle savedInstanceState) {             // Inflate the layout for this fragment             return inflater.inflate(R.layout.fragment_2, container, false);         }     } </pre>
contact_Fragment.java	<pre> package com.example.navigation.ui.contact; import android.os.Bundle; import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup; import android.widget.TextView; import androidx.annotation.NonNull; import androidx.fragment.app.Fragment; import androidx.lifecycle.ViewModelProvider; import com.example.navigation.databinding.FragmentContactBinding;  public class contact_Fragment extends Fragment {      private FragmentContactBinding binding;      public View onCreateView(@NonNull LayoutInflater inflater,                              ViewGroup container, Bundle savedInstanceState) {         ContactViewModel contactViewModel =             new ViewModelProvider(this).get(ContactViewModel.class);          binding = FragmentContactBinding.inflate(inflater, container, false);         View root = binding.getRoot(); </pre>



	<pre>         final TextView textView = binding.textContact;         contactViewModel.getText().observe(getViewLifecycleOwner(),         textView::setText);         return root;     } } </pre>
ContactViewModel.java	<pre> package com.example.navigation.ui.contact; import androidx.lifecycle.LiveData; import androidx.lifecycle.MutableLiveData; import androidx.lifecycle.ViewModel;  public class ContactViewModel extends ViewModel {private final MutableLiveData&lt;String&gt; mText;      public ContactViewModel() {         mText = new MutableLiveData&lt;&gt;();         mText.setValue("This is contact fragment");     }     public LiveData&lt;String&gt; getText()     {return mText;     } } </pre>
HomeFragment.java	<pre> package com.example.navigation.ui.home;  import android.os.Bundle; import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup; import android.widget.TextView;  import androidx.annotation.NonNull; import androidx.fragment.app.Fragment; import androidx.lifecycle.ViewModelProvider;  import com.example.navigation.databinding.FragmentHomeBinding;  public class HomeFragment extends Fragment {      private FragmentHomeBinding binding;      public View onCreateView(@NonNull LayoutInflater inflater,                            ViewGroup container, Bundle savedInstanceState) {         HomeViewModel homeViewModel =             new ViewModelProvider(this).get(HomeViewModel.class); </pre>

	<pre> binding = FragmentHomeBinding.inflate(inflater, container, false); View root = binding.getRoot();  final TextView textView = binding.textHome; homeViewModel.getText().observe(getViewLifecycleOwner(), textView::setText); return root; }  @Override public void onDestroyView() {super.onDestroyView(); binding = null; } } </pre>
HomeViewModel.java	<pre> package com.example.navigation.ui.home; import androidx.lifecycle.LiveData; import androidx.lifecycle.MutableLiveData; import androidx.lifecycle.ViewModel;  public class HomeViewModel extends ViewModel  {private final MutableLiveData&lt;String&gt; mText;  public HomeViewModel() { mText = new MutableLiveData&lt;&gt;(); mText.setValue("This is home fragment"); }  public LiveData&lt;String&gt; getText() {return mText; } } </pre>
SlideshowFragment.java	<pre> package com.example.navigation.ui.slideshow; import android.os.Bundle; import android.view.LayoutInflater; import android.view.View; import android.view.ViewGroup; import android.widget.TextView; import androidx.annotation.NonNull; import androidx.fragment.app.Fragment; import androidx.lifecycle.ViewModelProvider; import com.example.navigation.databinding.FragmentSlideshowBinding; </pre>

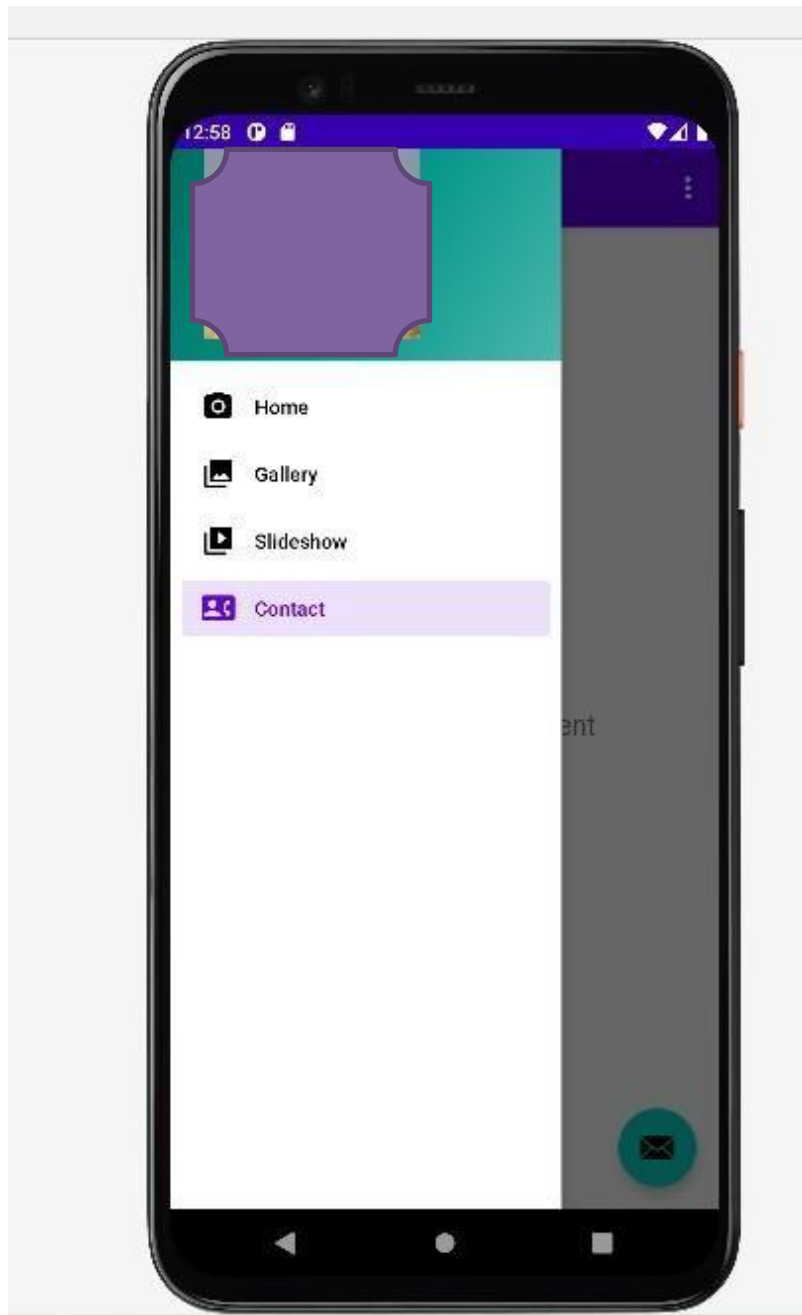
	<pre> public class SlideshowFragment extends Fragment      {private FragmentSlideshowBinding binding;      public View onCreateView(@NonNull LayoutInflater inflater,                              ViewGroup container, Bundle savedInstanceState) {         SlideshowViewModel slideshowViewModel =             new ViewModelProvider(this).get(SlideshowViewModel.class);          binding = FragmentSlideshowBinding.inflate(inflater, container, false);         View root = binding.getRoot();          final TextView textView = binding.textSlideshow;         slideshowViewModel.getText().observe(getViewLifecycleOwner(), textView::setText);         return root;     }      @Override     public void onDestroyView()     {super.onDestroyView();         binding = null;     } } </pre>
SlideshowViewModel.java	<pre> package com.example.navigation.ui.slideshow; import androidx.lifecycle.LiveData; import androidx.lifecycle.MutableLiveData; import androidx.lifecycle.ViewModel;  public class SlideshowViewModel extends ViewModel      {private final MutableLiveData&lt;String&gt; mText;      public SlideshowViewModel()     { mText = new         MutableLiveData&lt;&gt;();         mText.setValue("This is slideshow fragment");     }      public LiveData&lt;String&gt; getText()     {return mText;     } } </pre>

activity_main.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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:id="@+id/drawer_layout" android:layout_width="match_parent" android:layout_height="match_parent" android:fitsSystemWindows="true" tools:openDrawer="start"&gt;  &lt;include     android:id="@+id/app_bar_main"     layout="@layout/app_bar_main"     android:layout_width="match_parent"     android:layout_height="match_parent" /&gt;  &lt;com.google.android.material.navigation.NavigationView     android:id="@+id/nav_view"     android:layout_width="wrap_content"     android:layout_height="match_parent"     android:layout_gravity="start"     android:fitsSystemWindows="true"     app:headerLayout="@layout/nav_header_main"     app:menu="@menu/activity_main_drawer" /&gt; &lt;/androidx.drawerlayout.widget.DrawerLayout&gt; </pre>
fragment_gallery.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".ui.gallery.GalleryFragment"&gt;  &lt;TextView     android:id="@+id/text_gallery"     android:layout_width="match_parent"     android:layout_height="wrap_content"     android:layout_marginStart="8dp" </pre>

	<pre>         android:layout_marginTop="8dp"         android:layout_marginEnd="8dp"         android:textAlignment="center"         android:textSize="20sp"         app:layout_constraintBottom_toBottomOf="parent"         app:layout_constraintEnd_toEndOf="parent"         app:layout_constraintStart_toStartOf="parent"         app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
fragment_contact.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".ui.contact.contact_Fragment"&gt;      &lt;TextView         android:id="@+id/text_contact"         android:layout_width="match_parent"         android:layout_height="wrap_content"         android:layout_marginStart="8dp"         android:layout_marginTop="8dp"         android:layout_marginEnd="8dp"         android:textAlignment="center"         android:textSize="20sp"         app:layout_constraintBottom_toBottomOf="parent"         app:layout_constraintEnd_toEndOf="parent"         app:layout_constraintStart_toStartOf="parent"         app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
fragment_home.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".ui.home.HomeFragment"&gt;      &lt;TextView         android:id="@+id/text_home"         android:layout_width="match_parent" </pre>

	<pre> android:layout_height="wrap_content" android:layout_marginStart="8dp" android:layout_marginTop="8dp" android:layout_marginEnd="8dp" android:textAlignment="center" android:textSize="20sp" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>
fragment_slideshow.xml	<pre> &lt;?xml version="1.0" encoding="utf-8"?&gt; &lt;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=".ui.slideshow.SlideshowFragment"&gt;  &lt;TextView     android:id="@+id/text_slideshow"     android:layout_width="match_parent"     android:layout_height="wrap_content"     android:layout_marginStart="8dp"     android:layout_marginTop="8dp"     android:layout_marginEnd="8dp"     android:textAlignment="center"     android:textSize="20sp"     app:layout_constraintBottom_toBottomOf="parent"     app:layout_constraintEnd_toEndOf="parent"     app:layout_constraintStart_toStartOf="parent"     app:layout_constraintTop_toTopOf="parent" /&gt; &lt;/androidx.constraintlayout.widget.ConstraintLayout&gt; </pre>

## OUTPUT





## **RESULT**

Program has been successfully executed and output is obtained.