COURSE OUTCOME 4

PROGRAM 1

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

MainActivity.java	
| | ```java
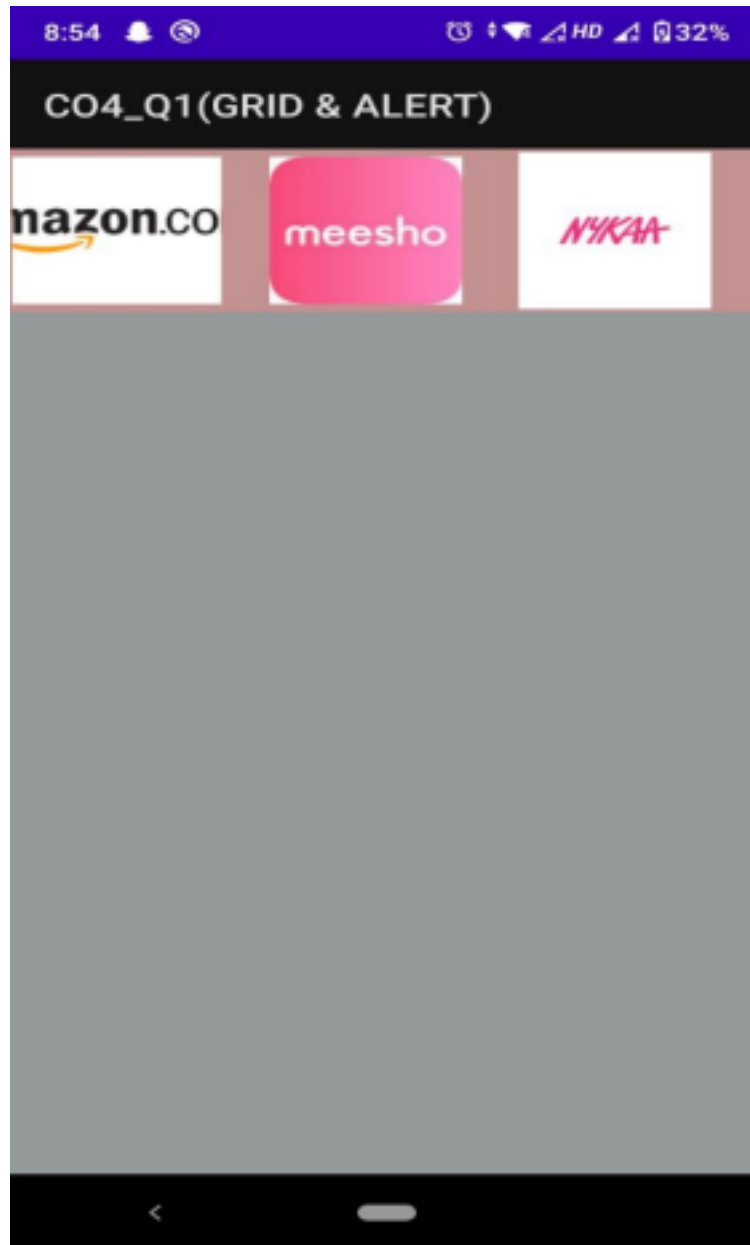package com.example.co4_q1gridalert;

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<?> 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)
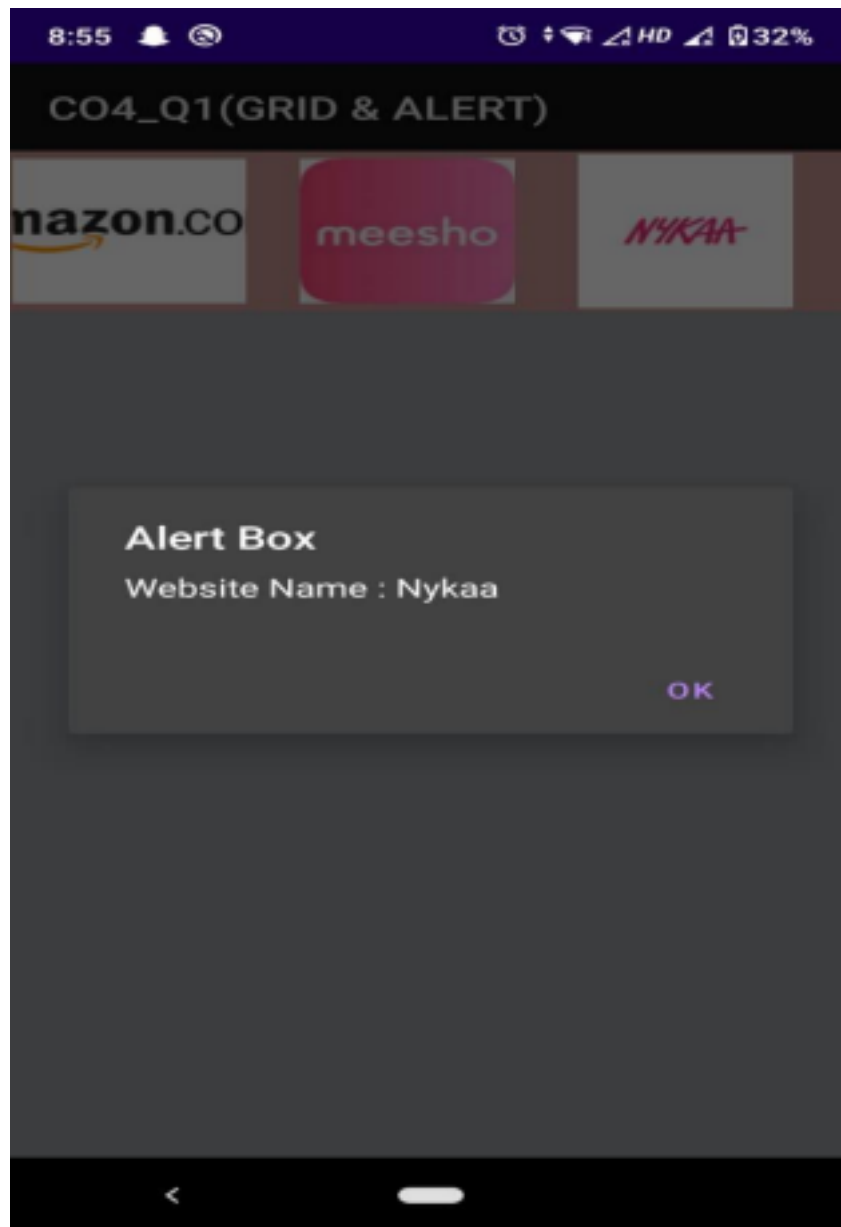{
                            }
``` |

| | ```
                });

            AlertDialog alert = builder.create();

            alert.setTitle("Alert Box");
            alert.show();
        }
    });
  }
}
``` |
| ImageAdapter.java | ```
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;
  }
``` |

| | ```
public Integer[] thumbImages = {
    R.drawable.d1,
    R.drawable.d2,
    R.drawable.d3
};
}
``` |

| activity_main.xml | ```xml
<?xml version="1.0" encoding="UTF-8"?>
-<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">
<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"/>
</LinearLayout>
``` |

OUTPUT

RESULT
Program has been successfully executed and output is obtained.

PROGRAM 2

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

MainActivity.java	package com.example.spinner;
	import androidx.appcompat.app.AppCompatActivity;

import android.view.View;
import android.widget.Adapter;
import android.widget.AdapterView;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
    implements AdapterView.OnItemSelectedListener {
  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
OnItemSelectedListener 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<?> arg0, View arg1, |

| | ```java
int position, long id) {
    Toast.makeText(getApplicationContext(), fruit[position],
Toast.LENGTH_LONG).show();
  }

  @Override
  public void onNothingSelected(AdapterView<?> arg0) {
    // TODO Auto-generated method stub
  }
}
``` |

| activity_main.xml | ```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:id="@+id/but"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#C1D5E4"
    android:backgroundTint="#76C7EC"
    tools:context=".MainActivity">


    <Spinner
        android:id="@+id/spinner"
        android:layout_width="160dp"
        android:layout_height="50dp"
        android:layout_marginStart="124dp"
        android:layout_marginTop="268dp"
        android:background="#FFFDFD"
        android:backgroundTint="#FFF9F9"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:ignore="SpeakableTextPresentCheck" />
</androidx.constraintlayout.widget.ConstraintLayout>
``` |

\

RESULT
Program has been successfully executed and output is obtained.

PROGRAM 3

AIM: Apply themes via code and manifest file.

MainActivity.java	```java
	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);
	    }
	}```

MainActivity2.java	```java
	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);
	    }
	}```

activity_main.xml	```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">
	
	<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" />
	
	</androidx.constraintlayout.widget.ConstraintLayout>

activity_main2.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-aut
	o"
	  xmlns:tools="http://schemas.android.com/tools"
	  android:layout_width="match_parent"
	  android:layout_height="match_parent"
	  tools:context=".MainActivity2"/>

theme.xml	<resources
	  xmlns:tools="http://schemas.android.com/tools"
	  > <!-- Base application theme. -->
	  <style name="Theme.Thememanifest"
	parent="Theme.MaterialComponents.DayNight.DarkAct
	    ionBar"> <!-- Primary brand color. -->
	    <item name="colorPrimary">#C899</item>
	    <item
	name="colorPrimaryVariant">@color/purple_700</ite
	m> <item
	name="colorOnPrimary">@color/white</item>
	    <!-- Secondary brand color. -->
	    <item
	name="colorSecondary">@color/teal_200</item>
	    <item

	name="colorSecondaryVariant">@color/teal_700</item> <item name="colorOnSecondary">#D78666</item> <!-- Status bar color. --> <item name="android:statusBarColor" tools:targetApi="l">?attr/colorPrimaryVariant</item>

| AndroidManifest.xml | ```xml
    <!-- Customize your theme here. -->
  </style>
  <style name="Theme.Thememanifest1"
parent="Theme.MaterialComponents.DayNight.DarkAction
    Bar"> <!-- Primary brand color. -->
    <item name="colorPrimary">@color/teal_700</item>
    <item
name="android:windowBackground">@color/purple_500</i
tem> <item name="colorPrimaryVariant">#D09909</item>
    <item name="colorOnPrimary">@color/white</item>
    <!-- Secondary brand color. -->
    <item name="colorSecondary">@color/teal_200</item>
    <item
name="colorSecondaryVariant">@color/purple_200</item>
    <item name="colorOnSecondary">#D54444</item>
    <!-- Status bar color. -->
    <item name="android:statusBarColor"
tools:targetApi="l">?attr/colorPrimaryVariant</item>
    <!-- Customize your theme here. -->
  </style>
</resources>

<?xml version="1.0" encoding="utf-8"?>
<manifest
  xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.thememanifest">

  <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">
    <activity
      android:name=".MainActivity2"
      android:theme="@style/Theme.Thememanifest1"
      android:exported="false" />
    <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>
``` |
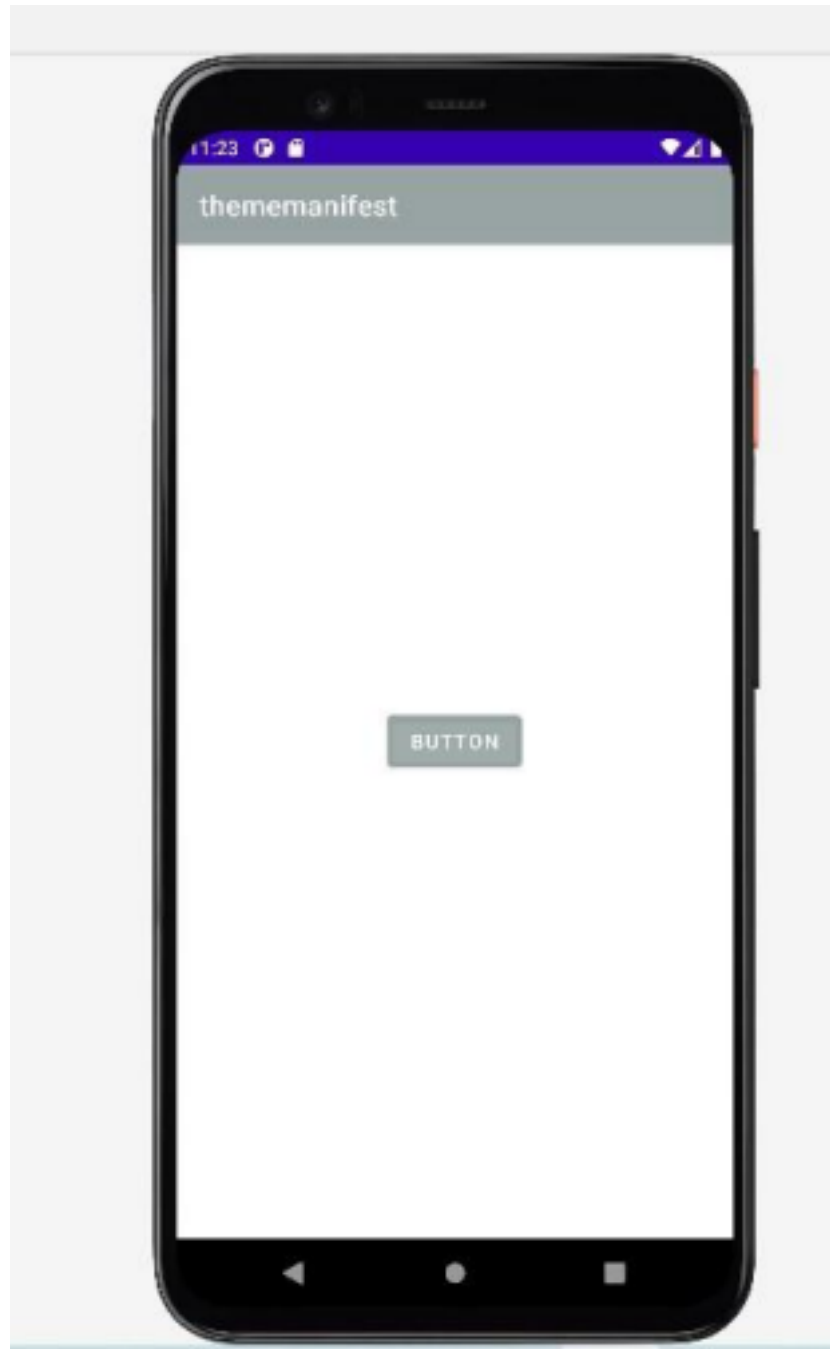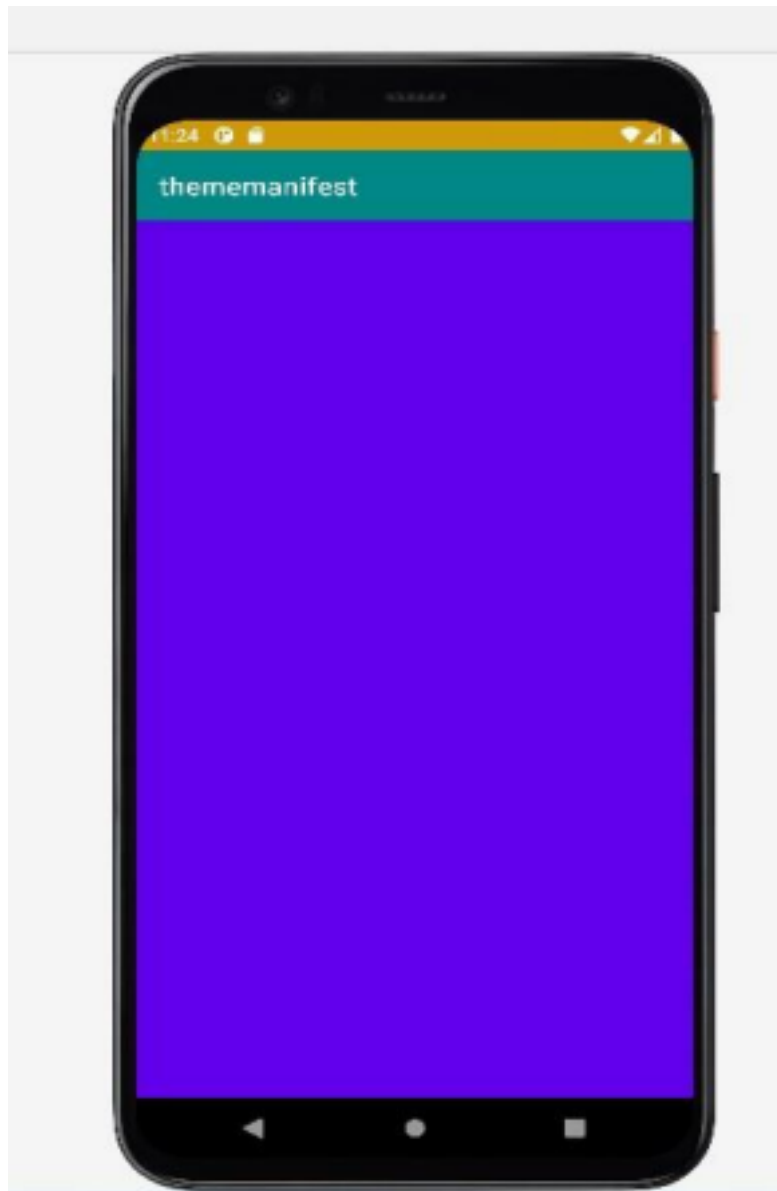
OUTPUT

RESULT
Program has been successfully executed and output is obtained.

PROGRAM 4

AIM: Develop application using Fragments.

MainActivity.java	```java
	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();
	    }
	
	}
	``

Fragment1.java	```java
	package com.example.fragment;
	
	import android.os.Bundle;
	
	import androidx.fragment.app.Fragment;
	``

| | ```java
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Fragment1 extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater,
ViewGroup container,
                    Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_1, container,
        false); }
}
``` |
| Fragment2.java | ```java
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); }
}
``` |
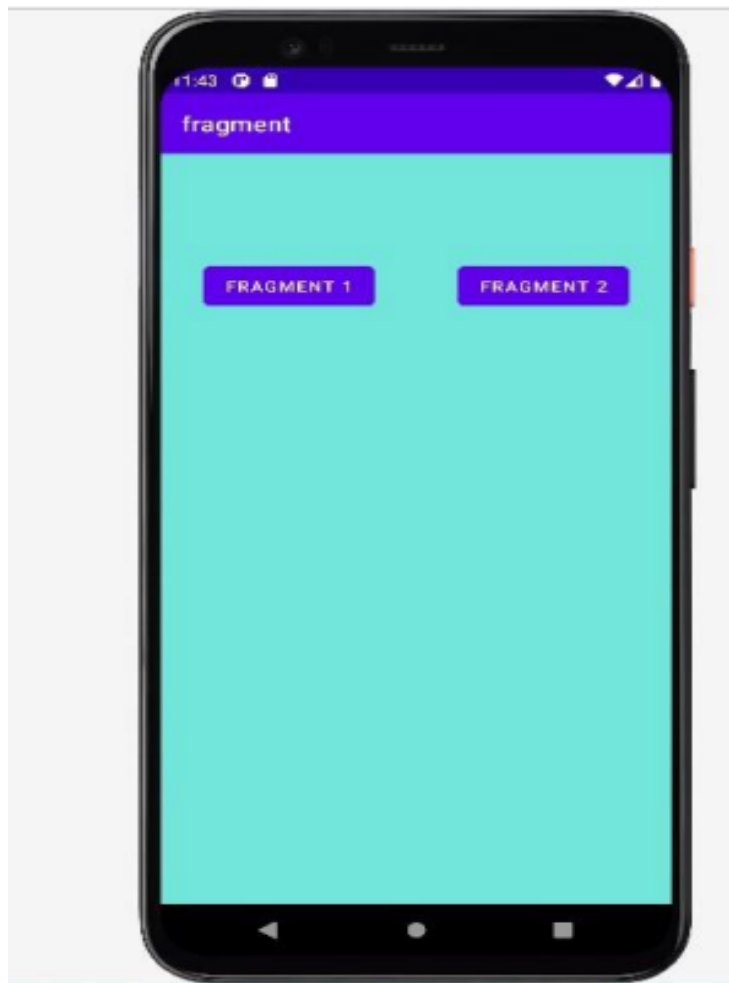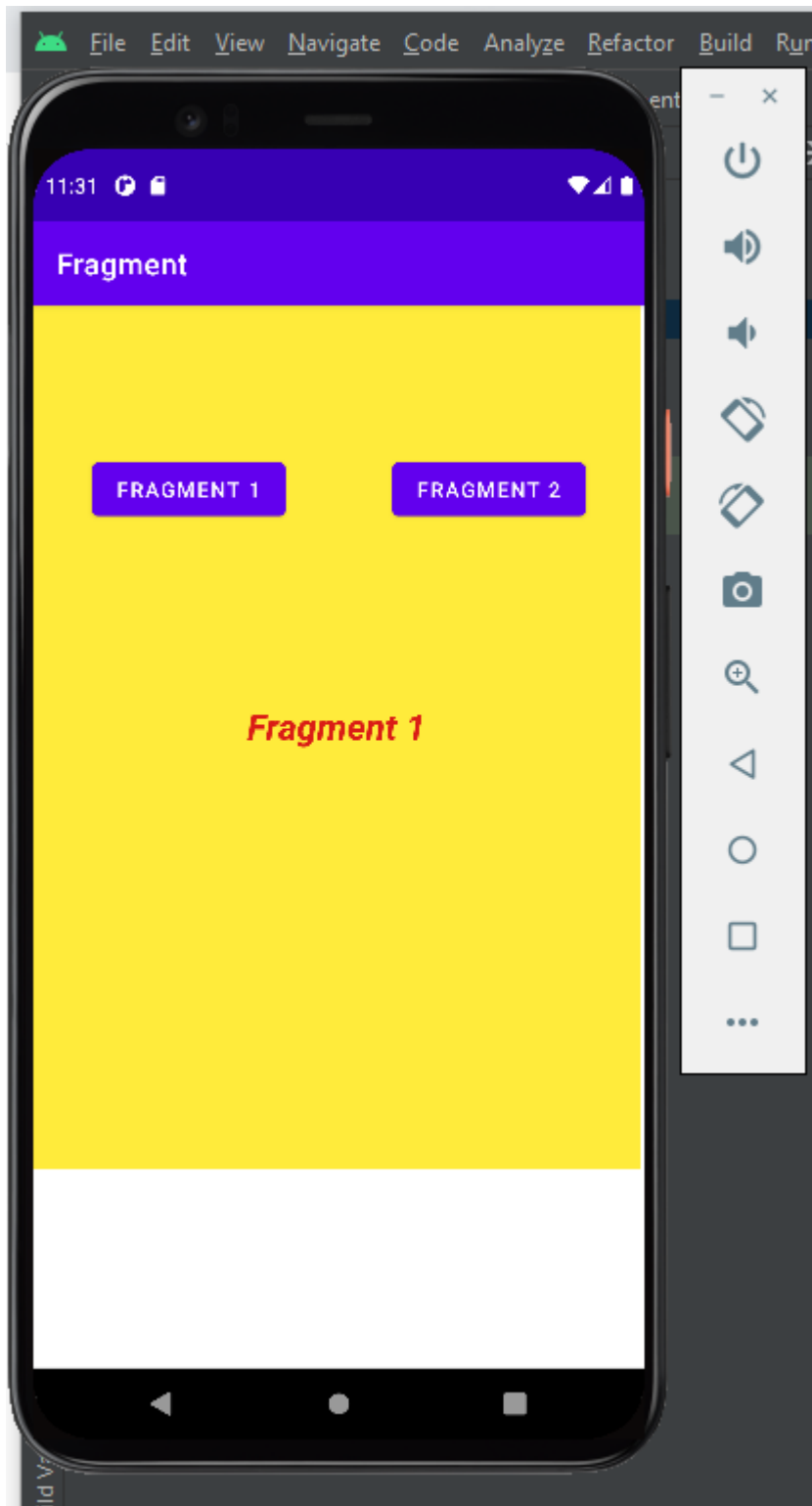
| activity_main.xml | `<?xml version="1.0" encoding="utf-8"?>`
`<androidx.constraintlayout.widget.ConstraintLayout`
`xmlns:android="http://schemas.android.com/apk/res/android"`
`    xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools"`
`    android:layout_width="match_parent"`
`    android:layout_height="match_parent"`
`    android:background="#72E6DB"`
`    tools:context=".MainActivity">`

`    <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="fragement2Start"`
`        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" />`
`<Button`
`        android:id="@+id/f1"`
`        android:layout_width="wrap_content"`
`        android:layout_height="wrap_content"`
`        android:layout_marginTop="100dp"`
`        android:onClick="fragement1Start"`
`        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" />`
`    <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">`
`    </FrameLayout>`

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

| fragment_1.xml | ```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/andr
    oid"
    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">
<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" />
</androidx.constraintlayout.widget.ConstraintLayout>
``` |
| fragment_2.xml | ```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/andr
    oid"
    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">
<!-- TODO: Update blank fragment layout -->
 <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"
``` |
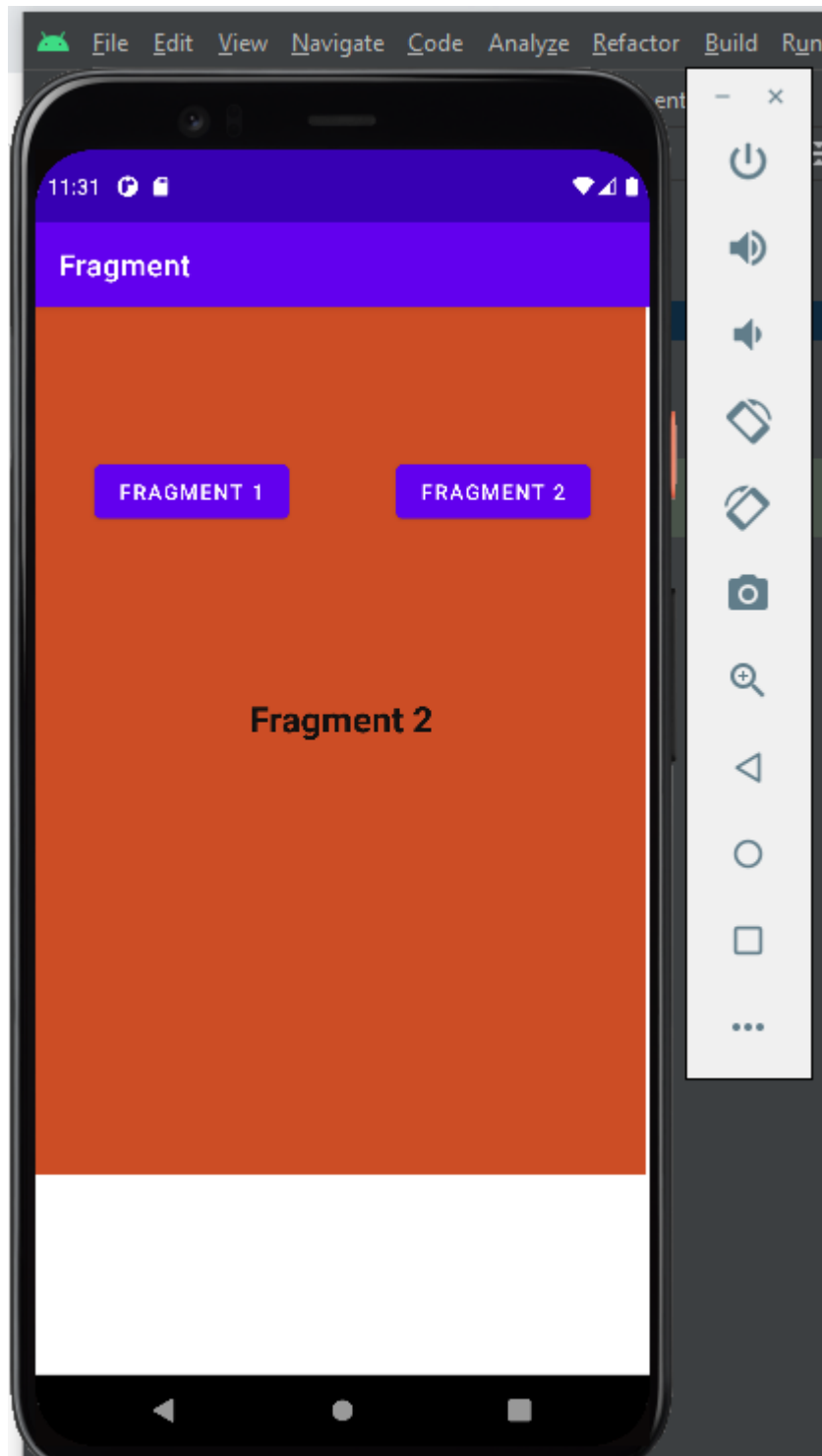
	android:textStyle="bold" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout>

OUTPUT

RESULT

Program has been successfully executed and output is obtained.

PROGRAM 5

AIM: Implement Navigation drawer.

MainActivity.java	package com.example.navigation;
| | ```java
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.NavigationVi
ew; 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.ActivityMainBindi

ng; 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(

| | ```
            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();
    }
}
```<br> |

GalleryFragment.java	```java
	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); }}
	``

| GalleryViewMode | ```
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); }
}
``` |
|---|---|
| contact_Fragment. | ```
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.FragmentContactBindi

ng; 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();
``` |

	final TextView textView = binding.textContact;
	contactViewModel.getText().observe(getViewLifecyc leOwner(), textView::setText);
	return root;
	}
	}

ContactViewMode	```java
	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<String> mText;
	
	    public ContactViewModel() {
	        mText = new MutableLiveData<>();
	        mText.setValue("This is contact fragment");
	    }
	    public LiveData<String> getText() {
	        return mText;
	    }
	}
	``

HomeFragment.jav	```java
	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.FragmentHomeBindi
	
	ng; 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);
	``

	binding = FragmentHomeBinding.inflate(inflater, container, false); View root = binding.getRoot(); final TextView textView = binding.textHome; homeViewModel.getText().observe(getViewLifecyc leOwner(), textView::setText); return root; } @Override public void onDestroyView() { super.onDestroyView(); binding = null; } }
HomeViewModel.java	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<String> mText; public HomeViewModel() { mText = new MutableLiveData<>(); mText.setValue("This is home fragment"); } public LiveData<String> getText() { return mText; } }
SlideshowFragment.ja va	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; importcom.example.navigation.databinding.FragmentSlideshow Binding;

| | ```java
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(getViewLifecyc
leOwner(), textView::setText);
        return root;
    }

    @Override
    public void onDestroyView() {
        super.onDestroyView();
        binding = null;
    }
}
``` |
| SlideshowViewModel.java | ```java
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<String> mText;

    public SlideshowViewModel() {
        mText = new MutableLiveData<>();
        mText.setValue("This is slideshow fragment");
    }

    public LiveData<String> getText() {
        return mText;
    }
``` |
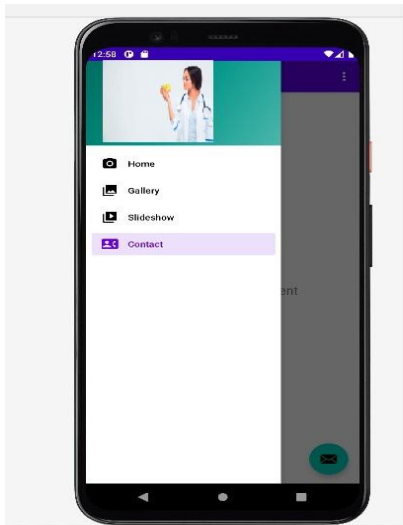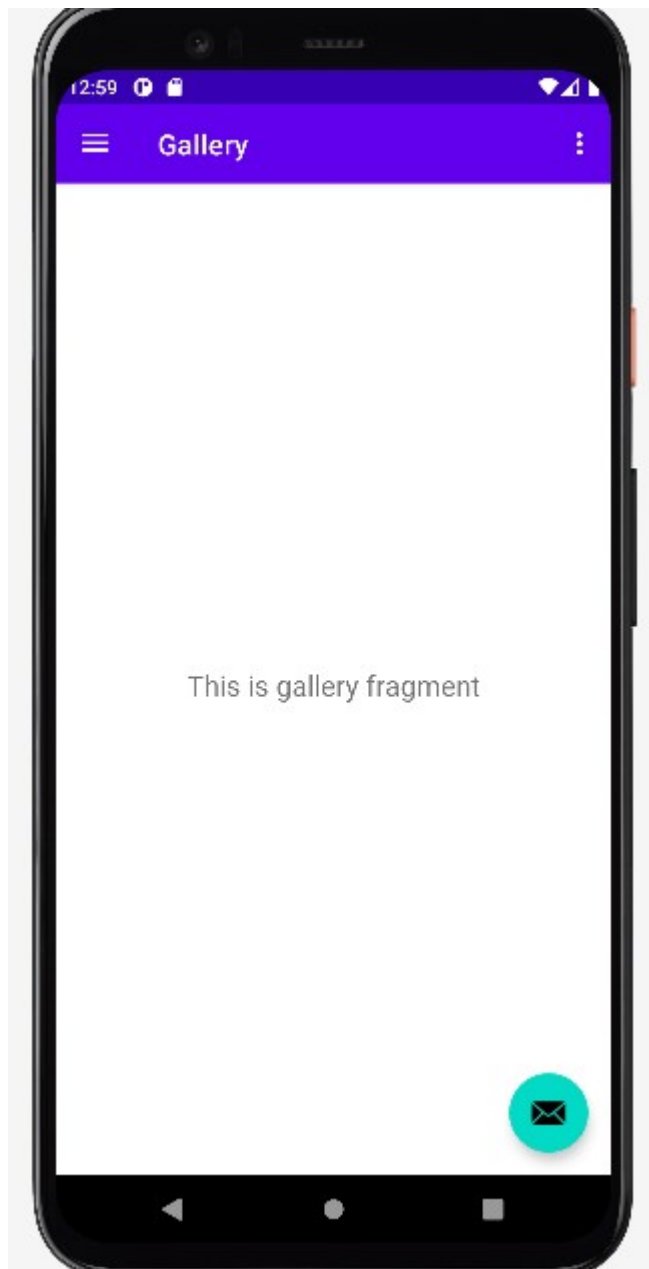
	`}`

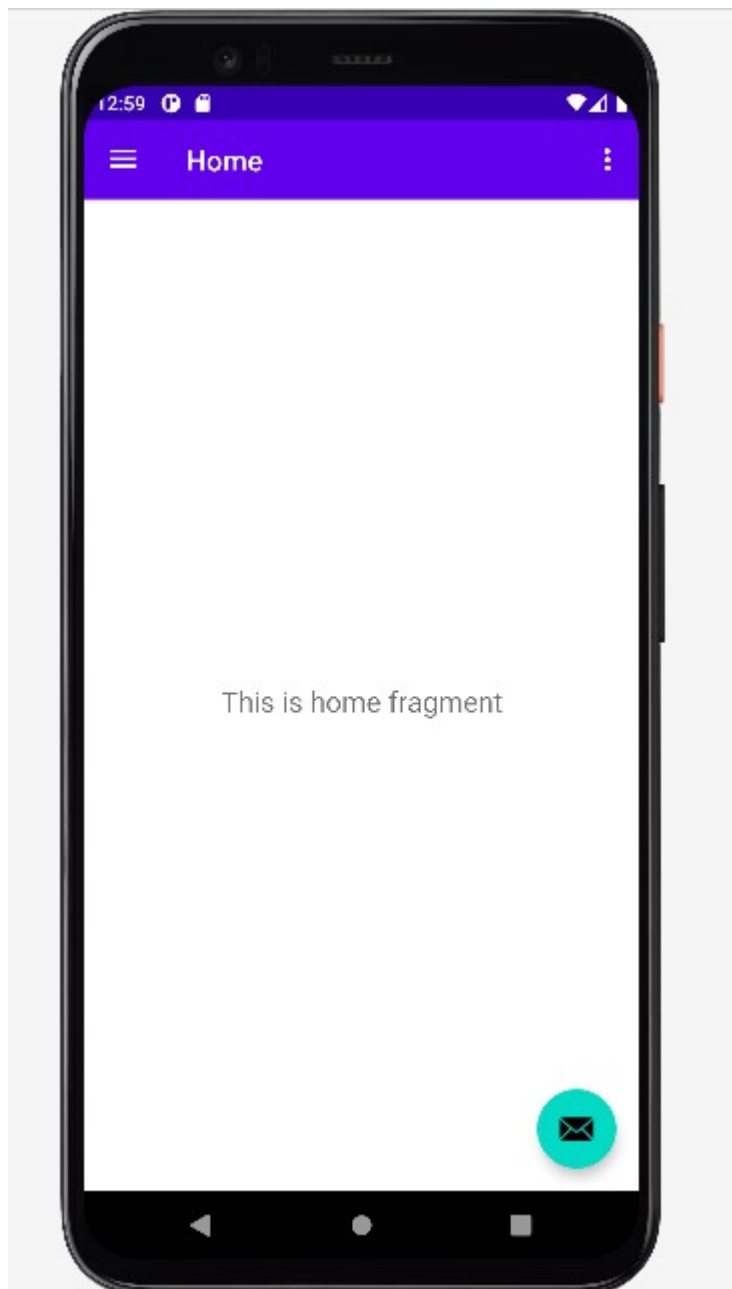|	

activity_main.xml	```xml
	<?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:id="@+id/drawer_layout"
	    android:layout_width="match_parent"
	    android:layout_height="match_parent"
	    android:fitsSystemWindows="true"
	    tools:openDrawer="start">
	
	    <include
	        android:id="@+id/app_bar_main"
	        layout="@layout/app_bar_main"
	        android:layout_width="match_parent"
	        android:layout_height="match_parent" />
	
	    <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" />
	</androidx.drawerlayout.widget.DrawerLayout>
	``

fragment_gallery.xml	```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=".ui.gallery.GalleryFragment">
	
	    <TextView
	        android:id="@+id/text_gallery"
	        android:layout_width="match_parent"
	        android:layout_height="wrap_content"
	        android:layout_marginStart="8dp"
	``

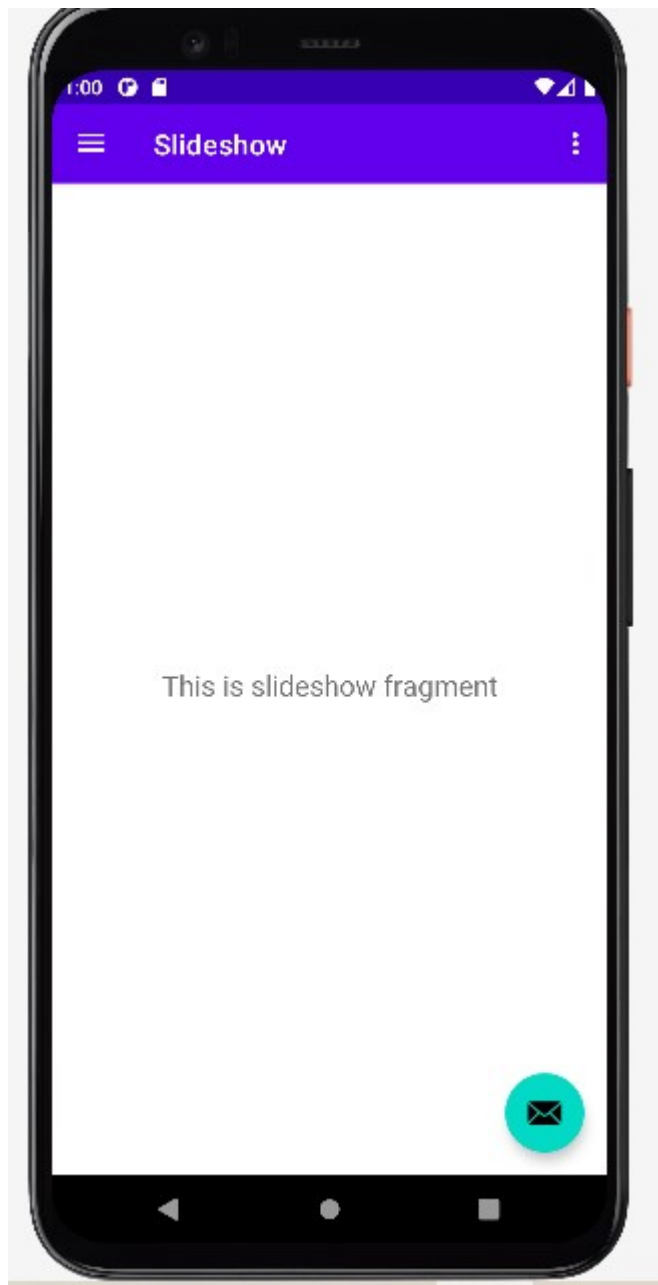|	
	android:layout_marginTop="8dp" android:layout_marginEnd="8dp" android:textAlignment="center" android:textSize="20sp" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout>

fragment_contact.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=".ui.contact.contact_Fragment">
	
	   <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" />
	</androidx.constraintlayout.widget.ConstraintLayout>

fragment_home.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=".ui.home.HomeFragment">
	
	   <TextView
	     android:id="@+id/text_home"
	     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="pa rent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout>

fragment_slideshow.xml	<?xml version="1.0" encoding="utf-8"?>
	<androidx.constraintlayout.widget.ConstraintLayout
	xmlns:android="http://schemas.android.com/apk/res/and
	roid"
	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">
	
	   <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="pa
	rent"
	     app:layout_constraintEnd_toEndOf="parent"
	     app:layout_constraintStart_toStartOf="parent"
	     app:layout_constraintTop_toTopOf="parent" />
	</androidx.constraintlayout.widget.ConstraintLayout>

RESULT
Program has been successfully executed and output is obtained.