**Assignment 4: Using Service & Fragment**

Main Activity: (Service\_Fragment\_Activity\_One)

Java File:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.annotation.SuppressLint;  
**import** android.app.DownloadManager;  
**import** android.content.Context;  
**import** android.graphics.BitmapFactory;  
**import** android.graphics.Bitmap;  
**import** android.net.Uri;  
**import** android.os.AsyncTask;  
**import** android.os.Bundle;  
**import** android.os.Environment;  
**import** android.view.View;  
**import** android.widget.Button;  
**import** android.widget.EditText;  
**import** android.widget.ImageView;  
**import** android.widget.Toast;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.fragment.app.Fragment;  
**import** androidx.fragment.app.FragmentManager;  
**import** androidx.fragment.app.FragmentTransaction;  
  
**import** com.example.smd\_assignments.R;  
  
**import** java.io.File;  
**import** java.io.InputStream;  
**import** java.net.URL;  
  
**public class** Service\_Fragment\_Activity\_One **extends** AppCompatActivity {  
  
 EditText **editText**;  
 Button **button**;  
 **int count** = 0;  
  
 @SuppressLint(**"MissingInflatedId"**)  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_service\_fragment\_one***);  
  
 **editText** = findViewById(R.id.***txtUrl***);  
 **button** = findViewById(R.id.***downloadButton***);  
  
 **button**.setOnClickListener(v -> {  
 **count**++;  
 String Url = **editText**.getText().toString();  
 downloadImage(**"image"**+**count**, Url);  
  
 Bundle bundle = **new** Bundle();  
 bundle.putString(**"message"**,**editText**.getText().toString());  
  
 **if**(**count** == 1) {  
 FragmentManager fragmentManager = getSupportFragmentManager();  
 FragmentTransaction fragmentTransaction = fragmentManager.beginTransaction();  
 PictureFragment\_One fragment\_1 = **new** PictureFragment\_One();  
 fragment\_1.setArguments(bundle);  
 fragmentTransaction.replace(R.id.***fragment1***, fragment\_1).commit();  
 }  
  
 **if**(**count** == 2) {  
 FragmentManager fragmentManager1 = getSupportFragmentManager();  
 FragmentTransaction fragmentTransaction1 = fragmentManager1.beginTransaction();  
 PictureFragment\_Two fragment\_2 = **new** PictureFragment\_Two();  
 fragment\_2.setArguments(bundle);  
 fragmentTransaction1.replace(R.id.***fragment2***, fragment\_2).commit();  
 }  
  
 **if**(**count** == 3) {  
 FragmentManager fragmentManager3 = getSupportFragmentManager();  
 FragmentTransaction fragmentTransaction3 = fragmentManager3.beginTransaction();  
 PictureFragment\_Three fragment\_3 = **new** PictureFragment\_Three();  
 fragment\_3.setArguments(bundle);  
 fragmentTransaction3.replace(R.id.***fragment3***, fragment\_3).commit();  
 }  
  
 **if**(**count** >= 4) {  
 FragmentManager fragmentManager4 = getSupportFragmentManager();  
 FragmentTransaction fragmentTransaction4 = fragmentManager4.beginTransaction();  
 PictureFragment\_Four fragment\_4 = **new** PictureFragment\_Four();  
 fragment\_4.setArguments(bundle);  
 fragmentTransaction4.replace(R.id.***fragment4***, fragment\_4).commit();  
 }  
  
 });  
  
 }  
  
 **public void** downloadImage(String FileName, String Url)  
 {  
 **try** {  
 DownloadManager downloadManager;  
 downloadManager = (DownloadManager) getSystemService(Context.***DOWNLOAD\_SERVICE***);  
  
 Uri uri = Uri.*parse*(Url);  
  
 DownloadManager.Request request = **new** DownloadManager.Request(uri);  
 request.setAllowedNetworkTypes(DownloadManager.Request.***NETWORK\_WIFI***)  
 .setAllowedOverRoaming(**false**)  
 .setTitle(FileName)  
 .setMimeType(**"image/jpeg"**)  
 .setNotificationVisibility(DownloadManager.Request.***VISIBILITY\_VISIBLE\_NOTIFY\_COMPLETED***)  
 .setDestinationInExternalPublicDir(Environment.*DIRECTORY\_PICTURES*, File.***separator*** + FileName + **".jpg"**);  
  
 downloadManager.enqueue(request);  
  
 Toast.*makeText*(**this**, **"Image Downloading Done"**, Toast.***LENGTH\_SHORT***).show();  
 }**catch** (Exception e)  
 {  
 Toast.*makeText*(**this**, **"Image Downloading Fail"**, Toast.***LENGTH\_SHORT***).show();  
 }  
 }  
}

XML File:

*<?***xml version="1.0" encoding="utf-8"***?>*<**androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:background="@drawable/image2"  
 tools:context=".Assignment\_4.Service\_Fragment\_Activity\_One"**>  
  
 <**EditText  
 android:id="@+id/txtUrl"  
 android:layout\_width="349dp"  
 android:layout\_height="114dp"  
 android:layout\_marginStart="40dp"  
 android:layout\_marginTop="28dp"  
 android:autofillHints=""  
 android:background="@null"  
 android:ems="10"  
 android:hint="@string/enter\_url\_here"  
 android:inputType="textPersonName"  
 android:padding="20dp"  
 android:textColor="@color/white"  
 android:textColorHint="#FFFFFF"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 tools:ignore="LabelFor,TextFields"** />  
  
  
 <**Button  
 android:id="@+id/downloadButton"  
 android:layout\_width="212dp"  
 android:layout\_height="59dp"  
 android:layout\_marginBottom="32dp"  
 android:background="#000851C1"  
 android:padding="10dp"  
 android:text="@string/download"  
 android:textSize="20dp"  
 android:textColor="@color/white"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"** />  
  
 <**androidx.fragment.app.FragmentContainerView  
 android:id="@+id/fragment1"  
 android:layout\_width="169dp"  
 android:layout\_height="156dp"  
 android:tag="my\_tag"  
 app:layout\_constraintBottom\_toTopOf="@+id/fragment3"  
 app:layout\_constraintEnd\_toStartOf="@+id/fragment2"  
 app:layout\_constraintHorizontal\_bias="0.53"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/txtUrl"  
 app:layout\_constraintVertical\_bias="0.655"  
 tools:layout="@layout/fragment\_picture\_\_one"**></**androidx.fragment.app.FragmentContainerView**>  
  
 <**androidx.fragment.app.FragmentContainerView  
 android:id="@+id/fragment2"  
 android:layout\_width="169dp"  
 android:layout\_height="156dp"  
 android:layout\_marginTop="76dp"  
 android:layout\_marginEnd="28dp"  
 android:tag="my\_tag"  
 app:layout\_constraintBottom\_toTopOf="@+id/fragment4"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/txtUrl"  
 app:layout\_constraintVertical\_bias="0.065"  
 tools:layout="@layout/fragment\_picture\_\_two"**></**androidx.fragment.app.FragmentContainerView**>  
  
 <**androidx.fragment.app.FragmentContainerView  
 android:id="@+id/fragment3"  
 android:layout\_width="169dp"  
 android:layout\_height="156dp"  
 android:layout\_marginBottom="140dp"  
 android:tag="my\_tag"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toStartOf="@+id/fragment4"  
 app:layout\_constraintHorizontal\_bias="0.571"  
 app:layout\_constraintStart\_toStartOf="parent"  
 tools:layout="@layout/fragment\_picture\_\_three"**></**androidx.fragment.app.FragmentContainerView**>  
  
 <**androidx.fragment.app.FragmentContainerView  
 android:id="@+id/fragment4"  
 android:layout\_width="169dp"  
 android:layout\_height="156dp"  
 android:layout\_marginEnd="28dp"  
 android:layout\_marginBottom="140dp"  
 android:tag="my\_tag"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 tools:layout="@layout/fragment\_picture\_\_four"**></**androidx.fragment.app.FragmentContainerView**>  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

Get Image from URL CLASS:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.graphics.Bitmap;  
**import** android.graphics.BitmapFactory;  
**import** android.os.AsyncTask;  
**import** android.widget.ImageView;  
  
**import** java.io.InputStream;  
  
  
**public class** GetImageFromUrl **extends** AsyncTask<String, Void, Bitmap>  
{  
 Bitmap **myBitmap**;  
 ImageView **imageView**;  
  
 **public** GetImageFromUrl(ImageView imageView) {  
 **this**.**imageView** = imageView;  
 }  
  
 @Override  
 **protected** Bitmap doInBackground(String... url) {  
 String Urldisplay = url[0];  
 **try** {  
  
 InputStream src = **new** java.net.URL(Urldisplay).openStream();  
 **myBitmap** = BitmapFactory.*decodeStream*(src);  
 } **catch** (Exception e) {  
 e.printStackTrace();  
 }  
 **return myBitmap**;  
 }  
  
 @Override  
 **protected void** onPostExecute(Bitmap result) {  
 **super**.onPostExecute(result);  
 **imageView**.setImageBitmap(result);  
 }  
  
}

Fragment One: (PictureFragment\_One)

Java File:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.graphics.Bitmap;  
**import** android.graphics.BitmapFactory;  
**import** android.media.Image;  
**import** android.os.AsyncTask;  
**import** android.os.Bundle;  
**import** android.view.LayoutInflater;  
**import** android.view.View;  
**import** android.view.ViewGroup;  
**import** android.widget.ImageView;  
**import** android.widget.Toast;  
  
**import** androidx.fragment.app.Fragment;  
  
**import** com.example.smd\_assignments.R;  
  
**import** java.io.InputStream;  
**import** java.net.URL;  
  
**public class** PictureFragment\_One **extends** Fragment {  
  
 ImageView **imageView\_One**;  
 String **Url**;  
  
 **public** PictureFragment\_One() {  
 }  
  
  
 @Override  
 **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  
 Bundle savedInstanceState) {  
 View view = inflater.inflate(R.layout.***fragment\_picture\_\_one***, container, **false**);  
  
 Bundle bundle = getArguments();  
 **if**(bundle != **null**)  
 {  
 **Url** = bundle.getString(**"message"**);  
 }  
  
 **imageView\_One** = view.findViewById(R.id.***imageView\_One***);  
 **imageView\_One**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **if**(**imageView\_One**.getVisibility() == View.***VISIBLE***)  
 {  
 **imageView\_One**.setVisibility(View.***GONE***);  
 }  
 **else** {  
 **imageView\_One**.setVisibility(View.***VISIBLE***);  
 }  
 }  
 });  
  
 GetImageFromUrl image = **new** GetImageFromUrl(**imageView\_One**);  
 image.execute(**Url**);  
 **return** view;  
 }  
}

XML File:

*<?***xml version="1.0" encoding="utf-8"***?>*<**FrameLayout 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="#EB000000"  
 tools:context=".Assignment\_4.PictureFragment\_One"**>  
  
  
 <**ImageView  
 android:id="@+id/imageView\_One"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="20dp"  
 android:contentDescription="@string/fragment2"** />  
  
</**FrameLayout**>

Fragment Two: (PictureFragment\_Two)

Java File:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.annotation.SuppressLint;  
**import** android.os.Bundle;  
  
**import** androidx.fragment.app.Fragment;  
  
**import** android.view.LayoutInflater;  
**import** android.view.View;  
**import** android.view.ViewGroup;  
**import** android.widget.ImageView;  
  
**import** com.example.smd\_assignments.R;  
  
**public class** PictureFragment\_Two **extends** Fragment {  
 ImageView **imageView\_Two**;  
 String **Url**;  
  
 **public** PictureFragment\_Two() {  
 *// Required empty public constructor* }  
  
 @SuppressLint(**"MissingInflatedId"**)  
 @Override  
 **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  
 Bundle savedInstanceState) {  
 *// Inflate the layout for this fragment* View view = inflater.inflate(R.layout.***fragment\_picture\_\_two***, container, **false**);  
 Bundle bundle = getArguments();  
 **if**(bundle != **null**)  
 {  
 **Url** = bundle.getString(**"message"**);  
 }  
  
 **imageView\_Two** = view.findViewById(R.id.***imageView\_Two***);  
 **imageView\_Two**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **if**(**imageView\_Two**.getVisibility() == View.***VISIBLE***)  
 {  
 **imageView\_Two**.setVisibility(View.***GONE***);  
 }  
 **else** {  
 **imageView\_Two**.setVisibility(View.***VISIBLE***);  
 }  
 }  
 });  
  
 GetImageFromUrl image = **new** GetImageFromUrl(**imageView\_Two**);  
 image.execute(**Url**);  
 **return** view;  
 }  
}

XML File:

*<?***xml version="1.0" encoding="utf-8"***?>*<**FrameLayout 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="#EB000000"  
 tools:context=".Assignment\_4.PictureFragment\_Two"**>  
  
  
 <**ImageView  
 android:id="@+id/imageView\_Two"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="20dp"  
 android:contentDescription="@string/fragments2"** />  
</**FrameLayout**>

Fragment Three: (PictureFragment\_Three)

Java File:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.annotation.SuppressLint;  
**import** android.os.Bundle;  
  
**import** androidx.fragment.app.Fragment;  
  
**import** android.view.LayoutInflater;  
**import** android.view.View;  
**import** android.view.ViewGroup;  
**import** android.widget.ImageView;  
  
**import** com.example.smd\_assignments.R;  
  
**public class** PictureFragment\_Three **extends** Fragment {  
  
 ImageView **imageView\_Three**;  
 String **Url**;  
  
 **public** PictureFragment\_Three() {  
 *// Required empty public constructor* }  
  
 @SuppressLint(**"MissingInflatedId"**)  
 @Override  
 **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  
 Bundle savedInstanceState) {  
 View view = inflater.inflate(R.layout.***fragment\_picture\_\_three***, container, **false**);  
 Bundle bundle = getArguments();  
 **if**(bundle != **null**)  
 {  
 **Url** = bundle.getString(**"message"**);  
 }  
  
 **imageView\_Three** = view.findViewById(R.id.***imageView\_Three***);  
 **imageView\_Three**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **if**(**imageView\_Three**.getVisibility() == View.***VISIBLE***)  
 {  
 **imageView\_Three**.setVisibility(View.***GONE***);  
 }  
 **else** {  
 **imageView\_Three**.setVisibility(View.***VISIBLE***);  
 }  
 }  
 });  
  
 GetImageFromUrl image = **new** GetImageFromUrl(**imageView\_Three**);  
 image.execute(**Url**);  
 **return** view;  
 }  
}

XML File:

*<?***xml version="1.0" encoding="utf-8"***?>*<**FrameLayout 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="#EB000000"  
 tools:context=".Assignment\_4.PictureFragment\_Three"**>  
  
  
 <**ImageView  
 android:id="@+id/imageView\_Three"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="20dp"  
 android:contentDescription="@string/fragment3"** />  
</**FrameLayout**>

Fragment Four: (PictureFragment\_Four)

Java File:

**package** com.example.smd\_assignments.Assignment\_4;  
  
**import** android.annotation.SuppressLint;  
**import** android.os.Bundle;  
  
**import** androidx.fragment.app.Fragment;  
  
**import** android.view.LayoutInflater;  
**import** android.view.View;  
**import** android.view.ViewGroup;  
**import** android.widget.ImageView;  
  
**import** com.example.smd\_assignments.R;  
**public class** PictureFragment\_Four **extends** Fragment {  
  
 ImageView **imageView\_Four**;  
 String **Url**;  
  
 **public** PictureFragment\_Four() {  
 }  
 @SuppressLint(**"MissingInflatedId"**)  
 @Override  
 **public** View onCreateView(LayoutInflater inflater, ViewGroup container,  
 Bundle savedInstanceState) {  
 *// Inflate the layout for this fragment* View view = inflater.inflate(R.layout.***fragment\_picture\_\_four***, container, **false**);  
 Bundle bundle = getArguments();  
 **if**(bundle != **null**)  
 {  
 **Url** = bundle.getString(**"message"**);  
 }  
  
 **imageView\_Four** = view.findViewById(R.id.***imageView\_Four***);  
 **imageView\_Four**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **if**(**imageView\_Four**.getVisibility() == View.***VISIBLE***)  
 {  
 **imageView\_Four**.setVisibility(View.***GONE***);  
 }  
 **else** {  
 **imageView\_Four**.setVisibility(View.***VISIBLE***);  
 }  
 }  
 });  
  
 GetImageFromUrl image = **new** GetImageFromUrl(**imageView\_Four**);  
 image.execute(**Url**);  
 **return** view;  
 }  
}

XML File:

*<?***xml version="1.0" encoding="utf-8"***?>*<**FrameLayout 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="#EB000000"  
 tools:context=".Assignment\_4.PictureFragment\_Four"**>  
  
  
 <**ImageView  
 android:id="@+id/imageView\_Four"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="20dp"  
 android:contentDescription="@string/fragment4"** />  
</**FrameLayout**>

**Output:**

Graphical user interface, application

Description automatically generated Graphical user interface, application

Description automatically generated