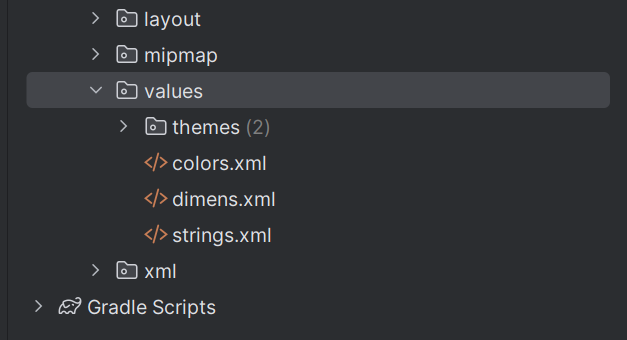
**Bài tập 1: Sử dụng Animation**

Bước 1: Ta tạo file dimens.xlm như trong hình



Bước 2: Ta copy code vào 2 file dimens.xml và strings.xml theo thứ tự

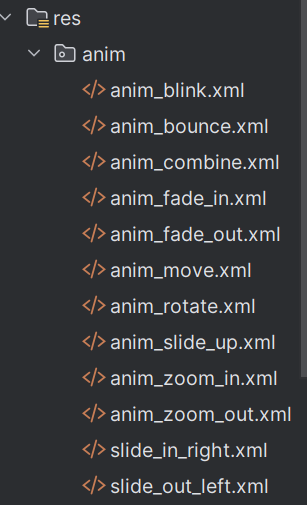
<resources>  
 <dimen name="margin\_base">5dp</dimen>  
 <dimen name="margin\_basex2">10dp</dimen>  
 <dimen name="text\_medium">16sp</dimen>  
 <dimen name="image\_base">100dp</dimen>  
</resources>

<resources>  
 <string name="app\_name">BaiTapLyThuyetLap6</string>  
 <string name="from\_xml">From XML</string>  
 <string name="from\_code">From CODE</string>  
 <string name="fade\_in">Fade In</string>  
 <string name="fade\_out">Fade Out</string>  
 <string name="blink">Blink</string>  
 <string name="zoom\_in">Zoom In</string>  
 <string name="zoom\_out">Zoom Out</string>  
 <string name="rotate">Rotate</string>  
 <string name="move">Move</string>  
 <string name="slide\_up">Slide Up</string>  
 <string name="bounce">Bounce</string>  
 <string name="combine">Combine</string>  
</resources>

Bước 3: Ta xây dựng giao diện trong activity\_main.xml

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 tools:context=".MainActivity">  
 <FrameLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="0dp"  
 android:layout\_weight="6">  
 <ImageView  
 android:id="@+id/iv\_uit\_logo"  
 android:layout\_width="@dimen/image\_base"  
 android:layout\_height="@dimen/image\_base"  
 android:layout\_gravity="center"  
 android:scaleType="fitCenter"  
 android:src="@drawable/img"/>  
 </FrameLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_basex2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <TextView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/from\_xml"  
 android:gravity="center"  
 android:textStyle="bold"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <TextView  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/from\_code"  
 android:textStyle="bold"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <ScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="0dp"  
 android:layout\_weight="5">  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_fade\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/fade\_in"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_fade\_in\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/fade\_in"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_fade\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/fade\_out"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/> <Button  
 android:id="@+id/btn\_fade\_out\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/fade\_out"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_blink\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/blink"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_blink\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/blink"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_zoom\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/zoom\_in"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_zoom\_in\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/zoom\_in"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_zoom\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/zoom\_out"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_zoom\_out\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/zoom\_out"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/> </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_rotate\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/rotate"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_rotate\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/rotate"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_move\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/move"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_move\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/move"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_slide\_up\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/slide\_up"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/> <Button  
 android:id="@+id/btn\_slide\_up\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/slide\_up"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_bounce\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/bounce"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_bounce\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/bounce"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/> </LinearLayout>  
 <LinearLayout  
 android:layout\_marginTop="@dimen/margin\_base"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal">  
 <Button  
 android:id="@+id/btn\_combine\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/combine"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/>  
 <Button  
 android:id="@+id/btn\_combine\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="@string/combine"  
 android:gravity="center"  
 android:layout\_marginRight="@dimen/margin\_base"/> </LinearLayout>  
 </LinearLayout>  
 </ScrollView>  
</LinearLayout>

Bước 4: Từ thư mục res, ta tạo thư mục anim để chứa các hiệu ứng



Bước 5: Tạo file anim\_fade\_in.xml và dán code thầy đã cho vào

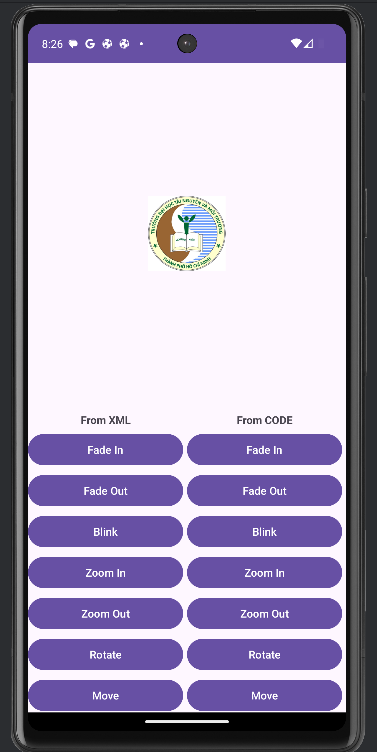
<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android" android:fillAfter="true" >  
 <alpha  
 android:duration="1000"  
 android:fromAlpha="0.0"  
 android:toAlpha="1.0" />  
</set>

Bước 6: Tương tự tạo các file: anim\_fade\_out.xml, anim\_blink.xml, anim\_zoom\_in.xml, anim\_zoom\_out.xml, anim\_rotate.xml, anim\_move.xml, anim\_slide\_up.xml, anim\_bounce.xml, anim\_combine.xml và dán code vào từng file đó.

Bước 7: Ta vào MainActivity để khai báo

import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
 private ImageView ivUitLogo;  
  
 // Button khai báo  
 private Button btnFadeInXml, btnFadeOutXml, btnBlinkXml, btnZoomInXml, btnZoomOutXml,  
 btnRotateXml, btnMoveXml, btnSlideUpXml, btnBounceXml, btnCombineXml;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 findViewsByIds();  
  
 // Gọi lần lượt  
 handleClickAnimationXml(btnFadeInXml, R.anim.*anim\_fade\_in*);  
 handleClickAnimationXml(btnFadeOutXml, R.anim.*anim\_fade\_out*);  
 handleClickAnimationXml(btnBlinkXml, R.anim.*anim\_blink*);  
 handleClickAnimationXml(btnZoomInXml, R.anim.*anim\_zoom\_in*);  
 handleClickAnimationXml(btnZoomOutXml, R.anim.*anim\_zoom\_out*);  
 handleClickAnimationXml(btnRotateXml, R.anim.*anim\_rotate*);  
 handleClickAnimationXml(btnMoveXml, R.anim.*anim\_move*);  
 handleClickAnimationXml(btnSlideUpXml, R.anim.*anim\_slide\_up*);  
 handleClickAnimationXml(btnBounceXml, R.anim.*anim\_bounce*);  
 handleClickAnimationXml(btnCombineXml, R.anim.*anim\_combine*);  
 }  
  
 private void findViewsByIds() {  
 ivUitLogo = findViewById(R.id.*iv\_uit\_logo*);  
 btnFadeInXml = findViewById(R.id.*btn\_fade\_in\_xml*);  
 btnFadeOutXml = findViewById(R.id.*btn\_fade\_out\_xml*);  
 btnBlinkXml = findViewById(R.id.*btn\_blink\_xml*);  
 btnZoomInXml = findViewById(R.id.*btn\_zoom\_in\_xml*);  
 btnZoomOutXml = findViewById(R.id.*btn\_zoom\_out\_xml*);  
 btnRotateXml = findViewById(R.id.*btn\_rotate\_xml*);  
 btnMoveXml = findViewById(R.id.*btn\_move\_xml*);  
 btnSlideUpXml = findViewById(R.id.*btn\_slide\_up\_xml*);  
 btnBounceXml = findViewById(R.id.*btn\_bounce\_xml*);  
 btnCombineXml = findViewById(R.id.*btn\_combine\_xml*);  
 }  
  
 private void handleClickAnimationXml(Button btn, int animId) {  
 btn.setOnClickListener(v -> {  
 Animation animation = AnimationUtils.*loadAnimation*(getApplicationContext(), animId);  
 ivUitLogo.startAnimation(animation);  
 });  
 }  
}

Bước 8: Kết quả khi chạy



**Bài tập 2: Animation từ Code**

Bước 1: Thêm hàm dưới đây vào MainActivity

private void handleClickAnimationCode(Button btn, final Animation animation) {  
 btn.setOnClickListener(v -> ivUitLogo.startAnimation(animation));  
}  
  
// Các hàm tạo animation bằng code  
private Animation createFadeInAnim() {  
 AlphaAnimation anim = new AlphaAnimation(0.0f, 1.0f);  
 anim.setDuration(1000);  
 anim.setFillAfter(true);  
 return anim;  
}

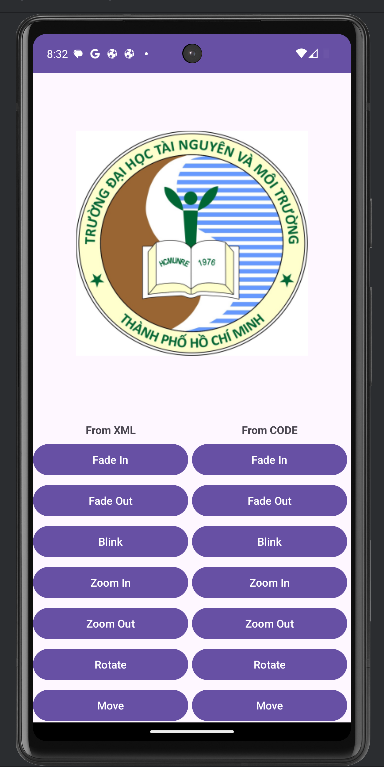
Bước 2: Trong hàm onCreate(), thêm các đoạn sau

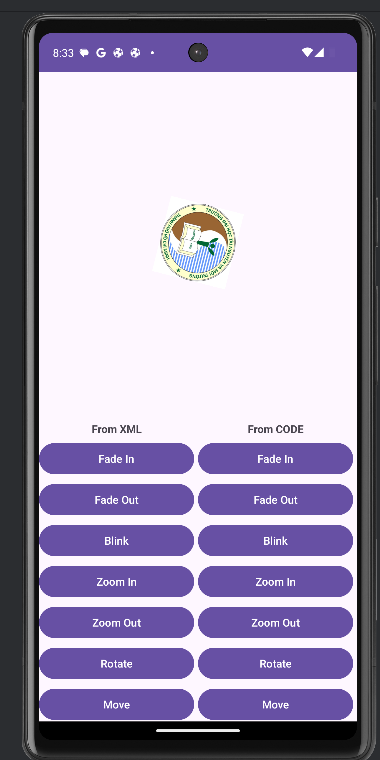
handleClickAnimationCode(findViewById(R.id.*btn\_fade\_in\_code*), createFadeInAnim());  
handleClickAnimationCode(findViewById(R.id.*btn\_zoom\_in\_code*), createZoomInAnim());  
handleClickAnimationCode(findViewById(R.id.*btn\_rotate\_code*), createRotateAnim());

Bước 3: Ta tạo thêm các createZoomOutAnim(), createRotateAnim()

private Animation createZoomInAnim() {  
 ScaleAnimation anim = new ScaleAnimation(  
 1, 3, 1, 3,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f);  
 anim.setDuration(1000);  
 return anim;  
}  
  
private Animation createRotateAnim() {  
 RotateAnimation anim = new RotateAnimation(  
 0, 360,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f);  
 anim.setDuration(600);  
 return anim;  
}

Bước 4: Kết quả như hình





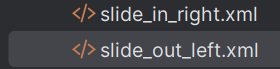
**Bài tập 3: Animation khi mở Activity mới**

Bước 1: Tạo SecondActivity.java + activity\_second.xml

Bước 2: Trong MainActivity, bắt sự kiện click vào logo

ivUitLogo.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(MainActivity.this, SecondActivity.class);  
 startActivity(intent);  
  
 // Animation chuyển màn hình  
 overridePendingTransition(R.anim.*slide\_in\_right*, R.anim.*slide\_out\_left*);  
 }  
});

Bước 3: Tạo thêm 2 file anim slide\_in\_right.xml và slide\_out\_left.xml và gõ đoạn code dưới đây

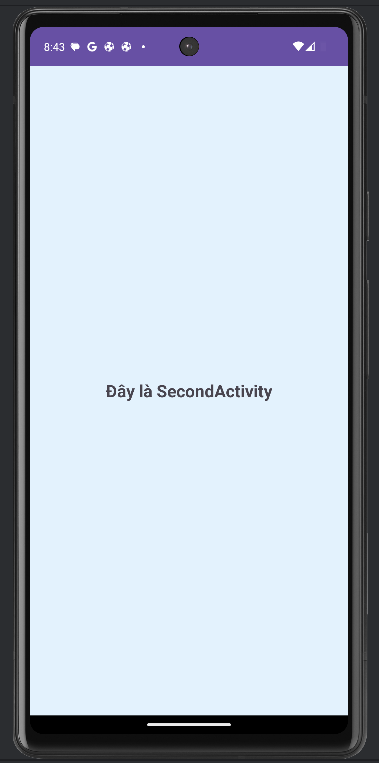


<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
 <translate xmlns:android="http://schemas.android.com/apk/res/android"  
 android:duration="500"  
 android:fromXDelta="100%p"  
 android:toXDelta="0"/>  
</set>

Bước 4: Trong file activity\_second.xml, copy đoạn code giao diện dưới đây

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:gravity="center"  
 android:background="#E3F2FD">  
  
 <TextView  
 android:text="Đây là SecondActivity"  
 android:textSize="22sp"  
 android:textStyle="bold"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"/>  
</LinearLayout>

Bước 5: Kết quả

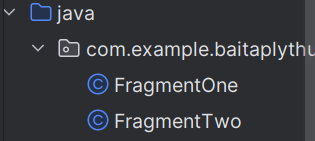


Bài 4: ViewPager2

Bước 1: Tạo một Activity mới tên **ViewPagerActivity và giao diện** activity\_viewpager.xml cùng đoạn code sau

<?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"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <androidx.viewpager2.widget.ViewPager2  
 android:id="@+id/viewPager"  
 android:layout\_width="0dp"  
 android:layout\_height="0dp"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"/>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

Bước 2: Tạo FragmentOne.java và FragmentTwo.java với copy lần lượt code theo thứ tự



package com.example.baitaplythuyetlap6;  
  
import android.os.Bundle;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
  
import androidx.annotation.NonNull;  
import androidx.annotation.Nullable;  
import androidx.fragment.app.Fragment;  
  
public class FragmentOne extends Fragment {  
 @Nullable  
 @Override  
 public View onCreateView(@NonNull LayoutInflater inflater,  
 @Nullable ViewGroup container,  
 @Nullable Bundle savedInstanceState) {  
 return inflater.inflate(R.layout.fragment\_one, container, false);  
 }  
}

package com.example.baitaplythuyetlap6;  
  
import android.os.Bundle;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
  
import androidx.annotation.NonNull;  
import androidx.annotation.Nullable;  
import androidx.fragment.app.Fragment;  
  
public class FragmentTwo extends Fragment {  
 @Nullable  
 @Override  
 public View onCreateView(@NonNull LayoutInflater inflater,  
 @Nullable ViewGroup container,  
 @Nullable Bundle savedInstanceState) {  
 return inflater.inflate(R.layout.*fragment\_two*, container, false);  
 }  
}

Bước 3: Tạo 2 giao diện fragment\_one.xml và fragment\_two.xml copy lần lượt code theo thứ tự

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:gravity="center"  
 android:orientation="vertical"  
 android:background="#FFCDD2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TextView  
 android:text="Fragment One"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"/>  
</LinearLayout>

<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:gravity="center"  
 android:orientation="vertical"  
 android:background="#C8E6C9"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TextView  
 android:text="Fragment Two"  
 android:textSize="24sp"  
 android:textStyle="bold"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"/>  
</LinearLayout>

Bước 4: Tạo ViewPagerAdapter.java và dán code sau vào

package com.example.baitaplythuyetlap6;  
  
import androidx.annotation.NonNull;  
import androidx.fragment.app.Fragment;  
import androidx.fragment.app.FragmentActivity;  
import androidx.viewpager2.adapter.FragmentStateAdapter;  
  
public class ViewPagerAdapter extends FragmentStateAdapter {  
 public ViewPagerAdapter(@NonNull FragmentActivity fragmentActivity) {  
 super(fragmentActivity);  
 }  
  
 @NonNull  
 @Override  
 public Fragment createFragment(int position) {  
 if (position == 0) {  
 return new FragmentOne(); // Trang 1  
 } else {  
 return new FragmentTwo(); // Trang 2  
 }  
 }  
  
 @Override  
 public int getItemCount() {  
 return 2; // phải >= 2  
 }  
}

Bước 5: Code trong ViewPagerActivity

package com.example.baitaplythuyetlap6;  
  
import android.os.Bundle;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.viewpager2.widget.ViewPager2;  
  
public class ViewPagerActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_viewpager*);  
  
 ViewPager2 viewPager = findViewById(R.id.*viewPager*);  
 ViewPagerAdapter adapter = new ViewPagerAdapter(this);  
 viewPager.setAdapter(adapter);  
 }  
}

Bước 6: Kết quả

