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Bài tập 1: Sử dụng Animation từ file XML

Bước 1 : Xây dựng các file dimens.xml

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

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Bước 2 : Xây dựng file strings.xml

<resources>  
 <string name="app\_name">baitaplythuyetlab6</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>

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Bước 3 : Xây dựng giao diện

<?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/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <!-- ImageView Logo -->  
 <ImageView  
 android:id="@+id/iv\_uit\_logo"  
 android:layout\_width="120dp"  
 android:layout\_height="120dp"  
 android:src="@drawable/logo"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:contentDescription="Logo" />  
  
 <!-- Fade In Button -->  
 <Button  
 android:id="@+id/btn\_fade\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade In"  
 app:layout\_constraintTop\_toBottomOf="@id/iv\_uit\_logo"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="12dp"/>  
  
 <!-- Fade Out Button -->  
 <Button  
 android:id="@+id/btn\_fade\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade Out"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_in\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Blink Button -->  
 <Button  
 android:id="@+id/btn\_blink\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Blink"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_out\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Zoom In Button -->  
 <Button  
 android:id="@+id/btn\_zoom\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom In"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_blink\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Zoom Out Button -->  
 <Button  
 android:id="@+id/btn\_zoom\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom Out"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_in\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Rotate Button -->  
 <Button  
 android:id="@+id/btn\_rotate\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Rotate"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_out\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Move Button -->  
 <Button  
 android:id="@+id/btn\_move\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Move"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_rotate\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Slide Up Button -->  
 <Button  
 android:id="@+id/btn\_slide\_up\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Slide Up"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_move\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Bounce Button -->  
 <Button  
 android:id="@+id/btn\_bounce\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Bounce"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_slide\_up\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- Combine Button -->  
 <Button  
 android:id="@+id/btn\_combine\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Combine"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_bounce\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

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Bước 4 : Tạo folder anim trong folder res và tạo các file.xml như trong hình

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**anim\_blink.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
 <alpha  
 android:fromAlpha="0.0"  
 android:toAlpha="1.0"  
 android:duration="300"  
 android:repeatMode="reverse"  
 android:repeatCount="3"/>  
</set>

**anim\_bounce.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fillAfter="true"  
 android:interpolator="@android:anim/bounce\_interpolator">  
 <scale  
 android:duration="500"  
 android:fromXScale="1.0"  
 android:fromYScale="0.0"  
 android:toXScale="1.0"  
 android:toYScale="1.0" />  
</set>

**anim\_fade\_out.xml**

<?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="1.0"  
 android:toAlpha="0.0" />  
</set>

**anim\_move.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:interpolator="@android:anim/linear\_interpolator"  
 android:fillAfter="true">  
 <translate  
 android:fromXDelta="0%p"  
 android:toXDelta="75%p"  
 android:duration="800" />  
</set>

**anim\_rotate.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
 <rotate  
 android:fromDegrees="0"  
 android:toDegrees="360"  
 android:pivotX="50%"  
 android:pivotY="50%"  
 android:duration="600"  
 android:repeatMode="restart"  
 android:repeatCount="2"  
 android:interpolator="@android:anim/cycle\_interpolator"/>  
</set>

**anim\_slide\_up.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fillAfter="true">  
 <scale  
 android:duration="500"  
 android:fromXScale="1.0"  
 android:fromYScale="1.0"  
 android:toXScale="1.0"  
 android:toYScale="0.0" />  
</set>

**anim\_zoom\_in.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fillAfter="true">  
 <scale  
 android:duration="1000"  
 android:fromXScale="1"  
 android:fromYScale="1"  
 android:pivotX="50%"  
 android:pivotY="50%"  
 android:toXScale="3"  
 android:toYScale="3" />  
</set>

**anim\_zoom\_out.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fillAfter="true">  
 <scale  
 android:duration="1000"  
 android:fromXScale="1.0"  
 android:fromYScale="1.0"  
 android:pivotX="50%"  
 android:pivotY="50%"  
 android:toXScale="0.5"  
 android:toYScale="0.5" />  
</set>

**anim\_combine.xml**

<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android"  
 android:fillAfter="true"  
 android:interpolator="@android:anim/linear\_interpolator">  
 <scale  
 android:duration="4000"  
 android:fromXScale="1"  
 android:fromYScale="1"  
 android:pivotX="50%"  
 android:pivotY="50%"  
 android:toXScale="3"  
 android:toYScale="3" />  
 <rotate  
 android:duration="500"  
 android:fromDegrees="0"  
 android:pivotX="50%"  
 android:pivotY="50%"  
 android:repeatCount="2"  
 android:repeatMode="restart"  
 android:toDegrees="360" />  
</set>

**anim\_fade\_in**

<?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 5 cấu hình trong MainActivity.main

package com.example.baitaplythuyetlab6;  
  
import android.os.Bundle;  
import android.view.View;  
import android.view.animation.Animation;  
import android.view.animation.AnimationUtils;  
import android.widget.Button;  
import android.widget.ImageView;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 private Button btnFadeInXml, btnFadeOutXml, btnBlinkXml, btnZoomInXml, btnZoomOutXml,  
 btnRotateXml, btnMoveXml, btnSlideUpXml, btnBounceXml, btnCombineXml;  
  
 private ImageView ivUitLogo;  
 private Animation.AnimationListener animationListener;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 findViewsByIds();  
 initVariables();  
  
 // Gán click animation XML cho các button  
 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 initVariables() {  
 animationListener = new Animation.AnimationListener() {  
 @Override  
 public void onAnimationStart(Animation animation) {}  
  
 @Override  
 public void onAnimationEnd(Animation animation) {  
 Toast.*makeText*(getApplicationContext(), "Animation Stopped", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 public void onAnimationRepeat(Animation animation) {}  
 };  
 }  
  
 private void handleClickAnimationXml(Button btn, final int animId) {  
 btn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Animation animation = AnimationUtils.*loadAnimation*(MainActivity.this, animId);  
 animation.setAnimationListener(animationListener);  
 ivUitLogo.startAnimation(animation);  
 }  
 });  
 }  
}

A screenshot of a computer screen

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Kết quả:

 Fade In (btn\_fade\_in\_xml)

* Làm view dần xuất hiện (từ trong suốt → đầy đủ).
* Thường dùng khi muốn hiển thị một thành phần mượt mà.

 Fade Out (btn\_fade\_out\_xml)

* Ngược lại với Fade In: làm view dần biến mất (từ đầy đủ → trong suốt).

 Blink (btn\_blink\_xml)

* Làm view nhấp nháy liên tục.
* Thường dùng để thu hút sự chú ý của người dùng.

 Zoom In (btn\_zoom\_in\_xml)

* Phóng to view từ nhỏ lên kích thước ban đầu.
* Tạo cảm giác view “lớn dần” khi xuất hiện.

 Zoom Out (btn\_zoom\_out\_xml)

* Thu nhỏ view từ kích thước ban đầu xuống nhỏ dần.
* Thường dùng khi muốn ẩn view với hiệu ứng “co lại”.

 Rotate (btn\_rotate\_xml)

* Quay view quanh tâm của nó (360°, hoặc góc tùy chỉnh).
* Dùng để tạo hiệu ứng xoay đẹp mắt.

 Move (btn\_move\_xml)

* Di chuyển view từ vị trí này sang vị trí khác.
* Có thể dùng kèm trượt theo trục X hoặc Y.

 Slide Up (btn\_slide\_up\_xml)

* View trượt từ dưới lên trên.
* Thường dùng khi muốn ẩn/hiện menu hay thông báo.

 Bounce (btn\_bounce\_xml)

* View nhún nhảy lên xuống như bật lò xo.
* Tạo hiệu ứng vui nhộn hoặc nhấn mạnh view.

 Combine (btn\_combine\_xml)

* Thường là kết hợp nhiều animation cùng lúc (ví dụ: fade + rotate + move).
* Dùng khi muốn hiệu ứng phức tạp, ấn tượng hơn.

A screenshot of a phone

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**Bài tập 2: Sử dụng Animation từ code**

**Bước 1 cập nhật trong MainActivity.java**

package com.example.baitaplythuyetlab6;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.view.animation.\*;  
import android.widget.Button;  
import android.widget.ImageView;  
  
public class MainActivity extends AppCompatActivity {  
  
 private ImageView ivUitLogo;  
  
 // Buttons bài tập 1 (XML)  
 private Button btnFadeInXml, btnFadeOutXml, btnBlinkXml,  
 btnZoomInXml, btnZoomOutXml, btnRotateXml,  
 btnMoveXml, btnSlideUpXml, btnBounceXml, btnCombineXml;  
  
 // Buttons bài tập 2 (Code)  
 private Button btnFadeInCode, btnFadeOutCode, btnBlinkCode,  
 btnZoomInCode, btnZoomOutCode, btnRotateCode,  
 btnMoveCode, btnSlideUpCode, btnBounceCode, btnCombineCode;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 findViewsByIds();  
  
 // ===== Bài tập 1: Animation từ XML =====  
 setupAnimationsFromXml();  
  
 // ===== Bài tập 2: Animation từ Code =====  
 setupAnimationsFromCode();  
 }  
  
 private void findViewsByIds() {  
 ivUitLogo = findViewById(R.id.*iv\_uit\_logo*);  
  
 // Buttons XML  
 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*);  
  
 // Buttons Code  
 btnFadeInCode = findViewById(R.id.*btn\_fade\_in\_code*);  
 btnFadeOutCode = findViewById(R.id.*btn\_fade\_out\_code*);  
 btnBlinkCode = findViewById(R.id.*btn\_blink\_code*);  
 btnZoomInCode = findViewById(R.id.*btn\_zoom\_in\_code*);  
 btnZoomOutCode = findViewById(R.id.*btn\_zoom\_out\_code*);  
 btnRotateCode = findViewById(R.id.*btn\_rotate\_code*);  
 btnMoveCode = findViewById(R.id.*btn\_move\_code*);  
 btnSlideUpCode = findViewById(R.id.*btn\_slide\_up\_code*);  
 btnBounceCode = findViewById(R.id.*btn\_bounce\_code*);  
 btnCombineCode = findViewById(R.id.*btn\_combine\_code*);  
 }  
  
 // ===== Bài tập 1: Animation từ XML =====  
 private void setupAnimationsFromXml() {  
 btnFadeInXml.setOnClickListener(v -> {  
 Animation fadeIn = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_fade\_in*);  
 ivUitLogo.startAnimation(fadeIn);  
 });  
  
 btnFadeOutXml.setOnClickListener(v -> {  
 Animation fadeOut = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_fade\_out*);  
 ivUitLogo.startAnimation(fadeOut);  
 });  
  
 btnBlinkXml.setOnClickListener(v -> {  
 Animation blink = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_blink*);  
 ivUitLogo.startAnimation(blink);  
 });  
  
 btnZoomInXml.setOnClickListener(v -> {  
 Animation zoomIn = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_zoom\_in*);  
 ivUitLogo.startAnimation(zoomIn);  
 });  
  
 btnZoomOutXml.setOnClickListener(v -> {  
 Animation zoomOut = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_zoom\_out*);  
 ivUitLogo.startAnimation(zoomOut);  
 });  
  
 btnRotateXml.setOnClickListener(v -> {  
 Animation rotate = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_rotate*);  
 ivUitLogo.startAnimation(rotate);  
 });  
  
 btnMoveXml.setOnClickListener(v -> {  
 Animation move = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_move*);  
 ivUitLogo.startAnimation(move);  
 });  
  
 btnSlideUpXml.setOnClickListener(v -> {  
 Animation slideUp = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_slide\_up*);  
 ivUitLogo.startAnimation(slideUp);  
 });  
  
 btnBounceXml.setOnClickListener(v -> {  
 Animation bounce = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_bounce*);  
 ivUitLogo.startAnimation(bounce);  
 });  
  
 btnCombineXml.setOnClickListener(v -> {  
 Animation combine = AnimationUtils.*loadAnimation*(this, R.anim.*anim\_combine*);  
 ivUitLogo.startAnimation(combine);  
 });  
 }  
  
 // ===== Bài tập 2: Animation từ Code =====  
 private void setupAnimationsFromCode() {  
  
 // Fade In  
 Animation fadeIn = new AlphaAnimation(0f, 1f);  
 fadeIn.setDuration(1000);  
 handleClickAnimationCode(btnFadeInCode, fadeIn);  
  
 // Fade Out  
 Animation fadeOut = new AlphaAnimation(1f, 0f);  
 fadeOut.setDuration(1000);  
 handleClickAnimationCode(btnFadeOutCode, fadeOut);  
  
 // Blink  
 Animation blink = new AlphaAnimation(1f, 0f);  
 blink.setDuration(300);  
 blink.setRepeatMode(Animation.*REVERSE*);  
 blink.setRepeatCount(5);  
 handleClickAnimationCode(btnBlinkCode, blink);  
  
 // Zoom In  
 Animation zoomIn = new ScaleAnimation(  
 0f, 1f, 0f, 1f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f  
 );  
 zoomIn.setDuration(500);  
 handleClickAnimationCode(btnZoomInCode, zoomIn);  
  
 // Zoom Out  
 Animation zoomOut = new ScaleAnimation(  
 1f, 0f, 1f, 0f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f  
 );  
 zoomOut.setDuration(500);  
 handleClickAnimationCode(btnZoomOutCode, zoomOut);  
  
 // Rotate  
 Animation rotate = new RotateAnimation(  
 0f, 360f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f  
 );  
 rotate.setDuration(1000);  
 handleClickAnimationCode(btnRotateCode, rotate);  
  
 // Move  
 Animation move = new TranslateAnimation(0f, 200f, 0f, 0f);  
 move.setDuration(1000);  
 handleClickAnimationCode(btnMoveCode, move);  
  
 // Slide Up  
 Animation slideUp = new TranslateAnimation(0f, 0f, 200f, 0f);  
 slideUp.setDuration(500);  
 handleClickAnimationCode(btnSlideUpCode, slideUp);  
  
 // Bounce  
 Animation bounce = new TranslateAnimation(0f, 0f, 0f, -100f);  
 bounce.setInterpolator(new BounceInterpolator());  
 bounce.setDuration(1000);  
 handleClickAnimationCode(btnBounceCode, bounce);  
  
 // Combine (Fade + Rotate)  
 AnimationSet combine = new AnimationSet(true);  
 combine.addAnimation(new AlphaAnimation(0f, 1f));  
 combine.addAnimation(new RotateAnimation(  
 0f, 360f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f,  
 Animation.*RELATIVE\_TO\_SELF*, 0.5f  
 ));  
 combine.setDuration(1000);  
 handleClickAnimationCode(btnCombineCode, combine);  
 }  
  
 // ===== Hàm dùng chung cho animation từ code =====  
 private void handleClickAnimationCode(Button btn, final Animation animation) {  
 btn.setOnClickListener(v -> ivUitLogo.startAnimation(animation));  
 }  
}

Bước 2 cập nhật trong activity\_main

<?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/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <!-- ImageView Logo -->  
 <ImageView  
 android:id="@+id/iv\_uit\_logo"  
 android:layout\_width="120dp"  
 android:layout\_height="120dp"  
 android:src="@drawable/logo"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:contentDescription="Logo" />  
  
 <!-- ================= Nhóm XML (Bài tập 1) ================= -->  
 <Button  
 android:id="@+id/btn\_fade\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade In"  
 app:layout\_constraintTop\_toBottomOf="@id/iv\_uit\_logo"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="12dp"/>  
  
 <Button  
 android:id="@+id/btn\_fade\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade Out"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_in\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_blink\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Blink"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_out\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_zoom\_in\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom In"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_blink\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_zoom\_out\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom Out"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_in\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_rotate\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Rotate"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_out\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_move\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Move"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_rotate\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_slide\_up\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Slide Up"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_move\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_bounce\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Bounce"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_slide\_up\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_combine\_xml"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Combine"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_bounce\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <!-- ================= Nhóm Code (Bài tập 2) ================= -->  
 <Button  
 android:id="@+id/btn\_fade\_in\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade In (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_combine\_xml"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="16dp"/>  
  
 <Button  
 android:id="@+id/btn\_fade\_out\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Fade Out (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_in\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_blink\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Blink (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_fade\_out\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_zoom\_in\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom In (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_blink\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_zoom\_out\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Zoom Out (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_in\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_rotate\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Rotate (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_zoom\_out\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_move\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Move (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_rotate\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_slide\_up\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Slide Up (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_move\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_bounce\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Bounce (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_slide\_up\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/btn\_combine\_code"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:text="Combine (Code)"  
 app:layout\_constraintTop\_toBottomOf="@id/btn\_bounce\_code"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="8dp"/>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

A screenshot of a phone

AI-generated content may be incorrect.