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AIM- What is Frame by Frame Animation? What is Tween Animation? How can you achieve edge-to-edge content display in your app? Create Android Application to demonstrate Frameby frame animation and splash screen to demonstrate twin animation according to below instructions.

Submitted By :- Ghadiya_Harshil
Enrollment number :- 21012021031



**Ganpat
University**

॥ विद्यया समाजोत्कर्षः ॥

**U.V. Patel
College of
Engineering**

Department of Information Technology

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" tools:context=".MainActivity">

<TextView
android:id="@+id/text"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="20dp"
android:text="MAD_Animation_Practical"
android:textSize="22sp"
android:textStyle="bold"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

<com.google.android.material.card.MaterialCardView android:id="@+id/card"
android:layout_width="match_parent"
    android:layout_height="wrap_content"
android:layout_margin="5dp"
app:cardElevation="20dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@id/text">

<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical">

<ImageView
android:id="@+id/animation"
android:layout_width="match_parent"

android:layout_height="194dp"
android:scaleType="fitXY"
android:src="@drawable/alarm1" />

<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

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```
android:orientation="vertical"
android:padding="16dp">
```

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Create Alarm Time"
android:textAppearance="?attr/textAppearanceHeadline6" />
```

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="8dp"
android:text="By pressing buttons, Alarm can be created and cancelled"
android:textAppearance="?attr/textAppearanceBody2"
android:textColor="?android:attr/textColorSecondary" />
```

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:text="Check current time by looking below real digital clock."
android:textAppearance="?attr/textAppearanceBody2"
android:textColor="?android:attr/textColorSecondary" />
```

```
<ImageView android:layout_width="27dp"
android:layout_height="27dp"
android:layout_marginTop="2dp"
android:layout_marginEnd="25dp"
android:id="@+id/heart" android:scaleType="fitXY"
android:layout_gravity="right"
android:src="@drawable/ic_heart_0"/>
```

```
<LinearLayout android:layout_width="wrap_content" android:layout_height="wrap_content"
android:orientation="horizontal">
```

```
<com.google.android.material.button.MaterialButton
android:id="@+id/create"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="8dp"
android:backgroundTint="@color/blue"
android:text="Create Alarm"
app:icon="@drawable/baseline_add_alarm_24">
```

```
</com.google.android.material.button.MaterialButton>
```

```
<com.google.android.material.button.MaterialButton
android:id="@+id/cancel"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="8dp"
android:backgroundTint="@color/blue"
android:text="Cancel Alarm"
app:icon="@drawable/baseline_alarm_off_24">

</com.google.android.material.button.MaterialButton>
</LinearLayout>
</LinearLayout>
</LinearLayout>
</com.google.android.material.card.MaterialCardView>

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

activity_splash.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"
android:layout_width="match_parent"
android:layout_height="match_parent"
xmlns:tools="http://schemas.android.com/tools"
tools:context=".MainActivity"
android:background="@drawable/rectangle_gradient">

    <ImageView
    android:id="@+id/uvpce_logo"
    android:layout_width="match_parent"
    android:layout_height="200dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/uvpce_logo" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

twin_animation.xml

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android" android:duration="1000">
```

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```
<scale
android:fromXScale="2.0"
android:fromYScale="2.0"
android:toXScale="1.0"
android:toYScale="1.0"
android:duration="750"
android:pivotX="50%"
android:pivotY="50%"/>
```

```
<translate
android:fromXDelta="1.0"
android:fromYDelta="1.0"
android:toXDelta="10.0"
android:toYDelta="100.0"
android:duration="750"/>
```

```
<rotate
android:fromDegrees="0"
android:toDegrees="360"
android:pivotX="50%"
android:pivotY="50%"
android:duration="1500"/>
```

```
<scale
android:fromXScale="1.0"
android:fromYScale="1.0"
android:toXScale="2.0"
android:toYScale="2.0"
android:duration="750"
android:pivotX="50%"/>
```

```
<translate
android:fromXDelta="10.0"
```

```
android:fromYDelta="100.0"
android:toXDelta="-10.0"
android:toYDelta="-100.0"
android:duration="750"/>
</set>
```

rectangle_gradient.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
android:shape="rectangle">
<gradient
```

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```
android:startColor="@color/pink"
android:endColor="@color/blue" android:type="radial"
android:gradientRadius="1500" android:centerX="0.9"
android:centerY="0.9">
</gradient>
</shape>
```

uvpce animation list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<animation-list xmlns:android="http://schemas.android.com/apk/res/android"
    android:oneshot="false">
<item android:drawable="@drawable/uvpce_logo" android:duration="100" />
<item android:drawable="@drawable/uvpce_logo_1" android:duration="100" />
<item
    android:drawable="@drawable/uvpce_logo_2" android:duration="100" />
<item
    android:drawable="@drawable/uvpce_logo_3" android:duration="200" />
<item
    android:drawable="@drawable/uvpce_logo_4" android:duration="200" />
<item
    android:drawable="@drawable/uvpce_logo_5" android:duration="100" />
<item
    android:drawable="@drawable/uvpce_logo_6" android:duration="100" />
<item
    android:drawable="@drawable/uvpce_logo_7" android:duration="100" />
</animation-list>
```

heart animation list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<animation-list xmlns:android="http://schemas.android.com/apk/res/android" android:oneshot="false">
<item
    android:drawable="@drawable/ic_heart_0" android:duration="200" />
<item
    android:drawable="@drawable/ic_heart_25" android:duration="200" />
<item
    android:drawable="@drawable/ic_heart_50" android:duration="200" />
<item
    android:drawable="@drawable/ic_heart_75" android:duration="200" />
<item
    android:drawable="@drawable/ic_heart_100" android:duration="200" />
</animation-list>
```

alarm_animation_list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<animation-list xmlns:android="http://schemas.android.com/apk/res/android" android:oneshot="false">

<item android:drawable="@drawable/alarm1" android:duration="200"/>

<item android:drawable="@drawable/alarm2" android:duration="200"/>

<item android:drawable="@drawable/alarm3" android:duration="200"/>

<item android:drawable="@drawable/alarm4" android:duration="200"/>

<item android:drawable="@drawable/alarm5" android:duration="200"/>

<item android:drawable="@drawable/alarm6" android:duration="200"/>

<item android:drawable="@drawable/alarm7" android:duration="200"/>

<item android:drawable="@drawable/alarm8" android:duration="200"/>

<item android:drawable="@drawable/alarm9" android:duration="200"/>

<item android:drawable="@drawable/alarm10" android:duration="200"/>
</animation-list>
```

MainActivity.kt

```
Package com.example.mad_practical_9_21012021031
import android.graphics.drawable.AnimationDrawable import
androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.ImageView

class MainActivity : AppCompatActivity()
{
lateinit var alarmAnimation : AnimationDrawable lateinit var heartAnimation : AnimationDrawable
override fun onCreate(savedInstanceState: Bundle?)
{
super.onCreate(savedInstanceState)
setContentView(R.layout.activity_main)

val imageAlarm : ImageView = findViewById(R.id.animation)
```

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```
imageAlarm.setBackgroundResource(R.drawable.alarm_animation_list)
alarmAnimation = imageAlarm.background as AnimationDrawable
val animate = findViewById<ImageView>(R.id.heart)
animate.setBackgroundResource(R.drawable.heart_animation_list)
heartAnimation = animate.background as AnimationDrawable
}
override fun onWindowFocusChanged(hasFocus: Boolean)
{ if (hasFocus)
{
alarmAnimation.start()
heartAnimation.start()
}
else
{
alarmAnimation.stop()
heartAnimation.stop()
}
super.onWindowFocusChanged(hasFocus)
}
}
```

SplashActivity.kt

```
package com.example.mad_practical_9_21012021031
import android.content.Intent
import android.graphics.drawable.AnimationDrawable import
androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.animation.Animation
import android.view.animation.Animation.AnimationListener import
android.view.animation.AnimationUtils
import android.widget.ImageView

class SplashActivity : AppCompatActivity(),AnimationListener {

lateinit var logoanimation : AnimationDrawable lateinit var twinAnimation: Animation
lateinit var img: ImageView
override fun onCreate(savedInstanceState: Bundle?)
{
super.onCreate(savedInstanceState)
setContentView(R.layout.activity_splash)
img = findViewById<ImageView>(R.id.uvpce_logo)
img.setBackgroundResource(R.drawable.uvpce_animation_list)
logoanimation = img.background as AnimationDrawable
twinAnimation = AnimationUtils.loadAnimation(this, R.anim.twin_animation)
twinAnimation.setAnimationListener(this)
}
```


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```
override fun onWindowFocusChanged(hasFocus: Boolean)
{ super.onWindowFocusChanged(hasFocus)
if (hasFocus)
{
logoanimation.start()
img.startAnimation(twinAnimation)
}
else
{
logoanimation.stop()
}
}
override fun onAnimationStart(p0: Animation?)
{
}
override fun onAnimationEnd(p0: Animation?)
{ Intent(this,MainActivity::class.java).also
{
startActivity(it)
}
}
override fun onAnimationRepeat(p0: Animation?)
{
}
}
<activity>
```

AndroidManifest.xml

```
android:name=".SplashActivity" android:exported="true">
<intent-filter>
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
<activity
android:name=".MainActivity" android:exported="false">
</activity>
```

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Output :

