# Animation

- ❑Animation is the process of creating motion and shape change.

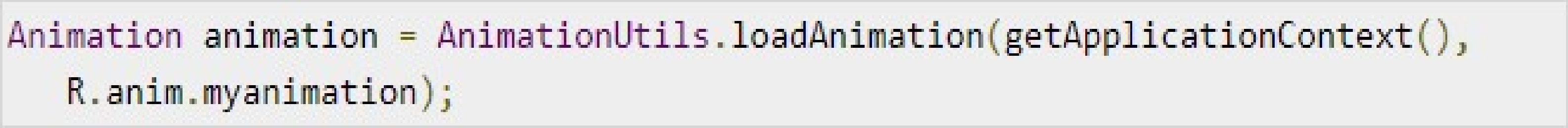
- **Animation** in android is possible from many ways. In this lesson, we will discuss one easy and widely used way of making animation called tweened animation.

# Tween Animation

- **Tween Animation** takes some parameters such as start value , end value, size , time duration , rotation angle etc. and perform the required animation on that object. It can be applied to any type of object. So in order to use this , android has provided us a class called ***Animation.***

# Tween Animation

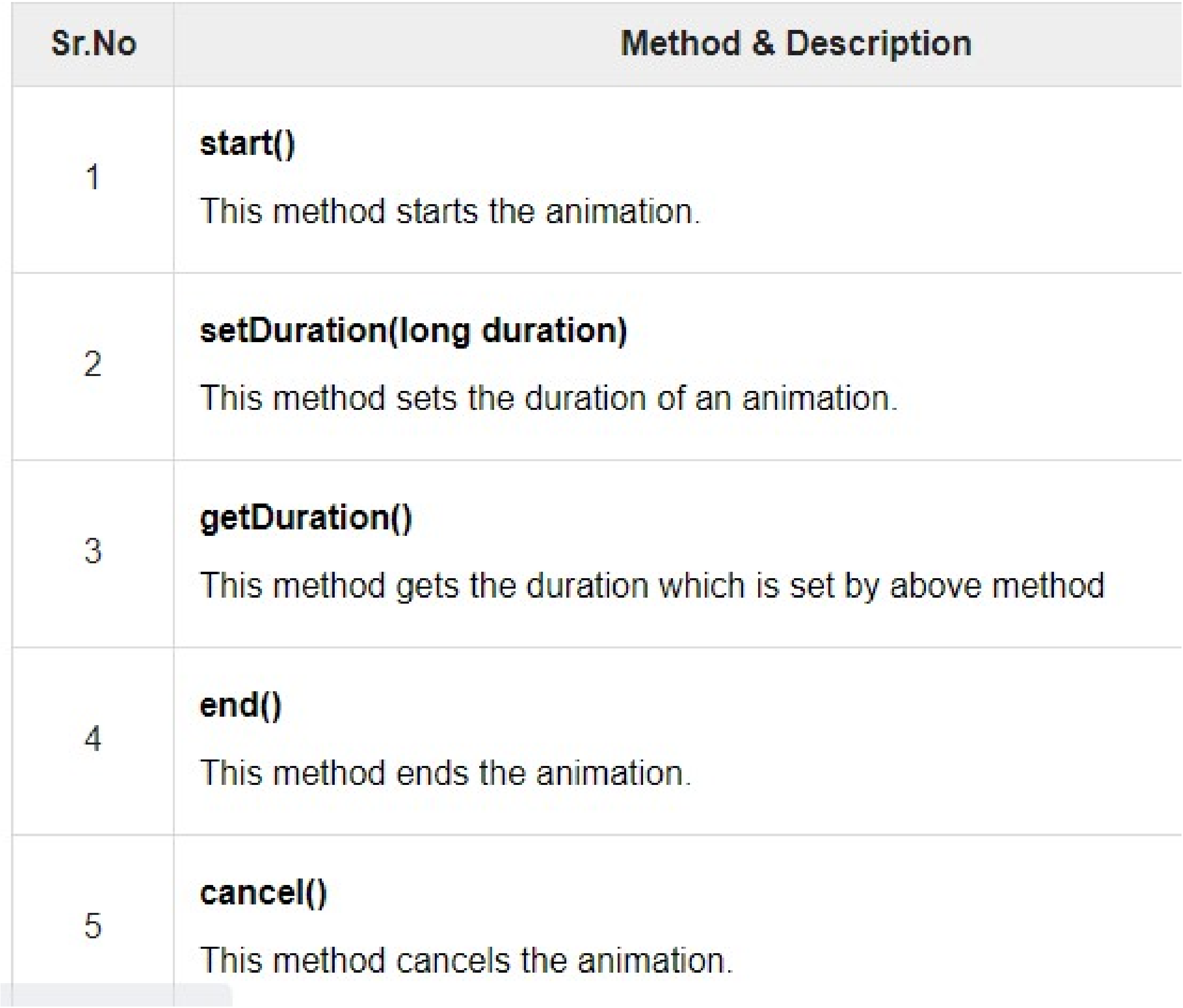
- In order to perform animation in android , we are going to call a static function **loadAnimation()** of the class *AnimationUtils*. We are going to receive the result in an instance of Animation Object.
- Its syntax is as follows:



```
Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
   R.anim.myanimation);
```

- Note the second parameter. It is the name of the our animation xml file. You have to create a new folder called **anim** under res directory and make an xml file under **anim** folder.

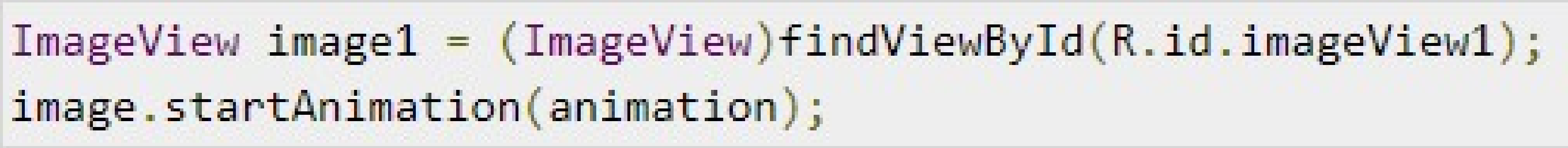
# Useful Functions in Animation Class



| Sr.No | Method & Description |
|---|---|
| 1 | **start()**<br>This method starts the animation. |
| 2 | **setDuration(long duration)**<br>This method sets the duration of an animation. |
| 3 | **getDuration()**<br>This method gets the duration which is set by above method |
| 4 | **end()**<br>This method ends the animation. |
| 5 | **cancel()**<br>This method cancels the animation. |

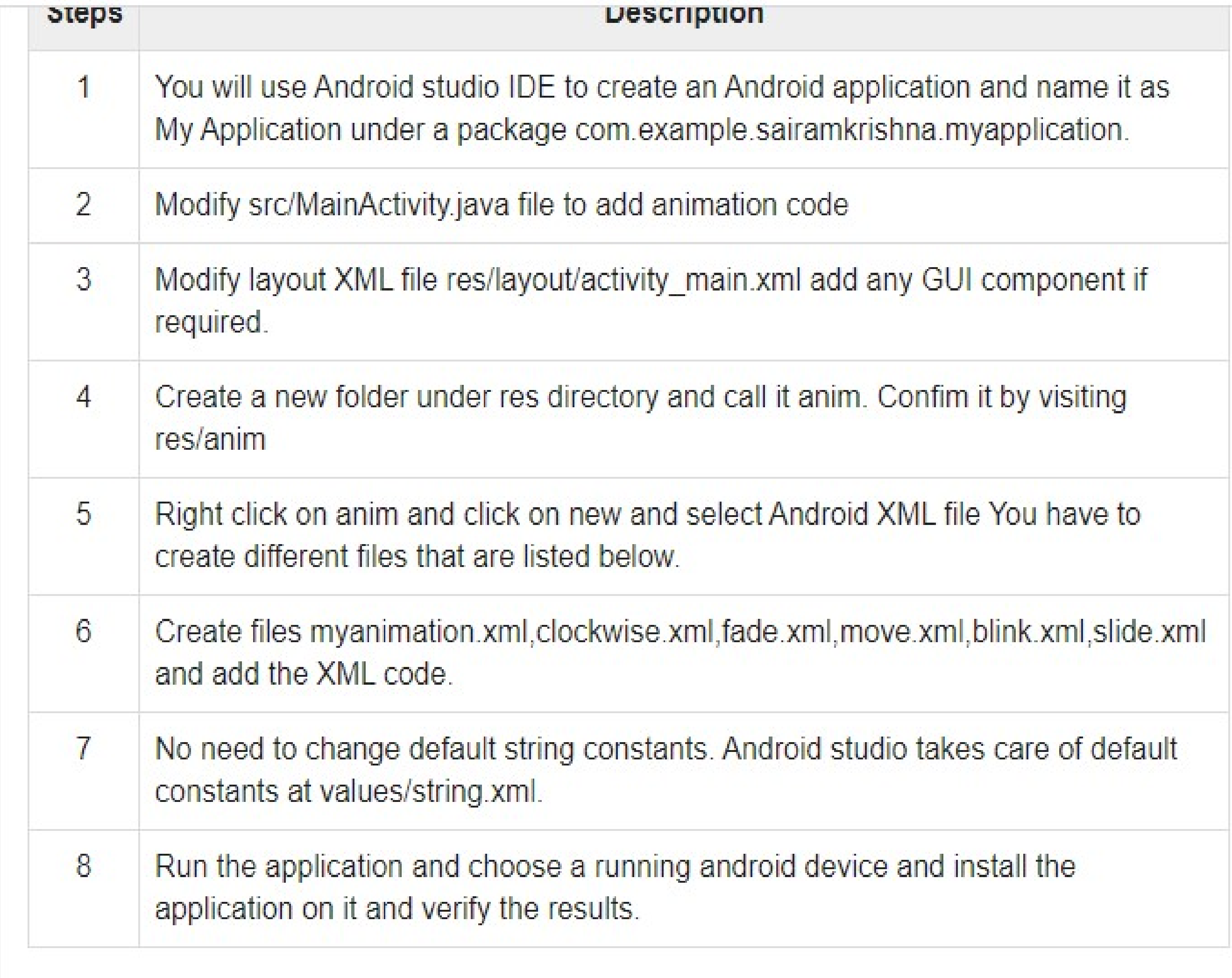
# startAnimation()

- In order to apply this animation to an object, we will just call the **startAnimation()** method of the object.
- Its syntax is:



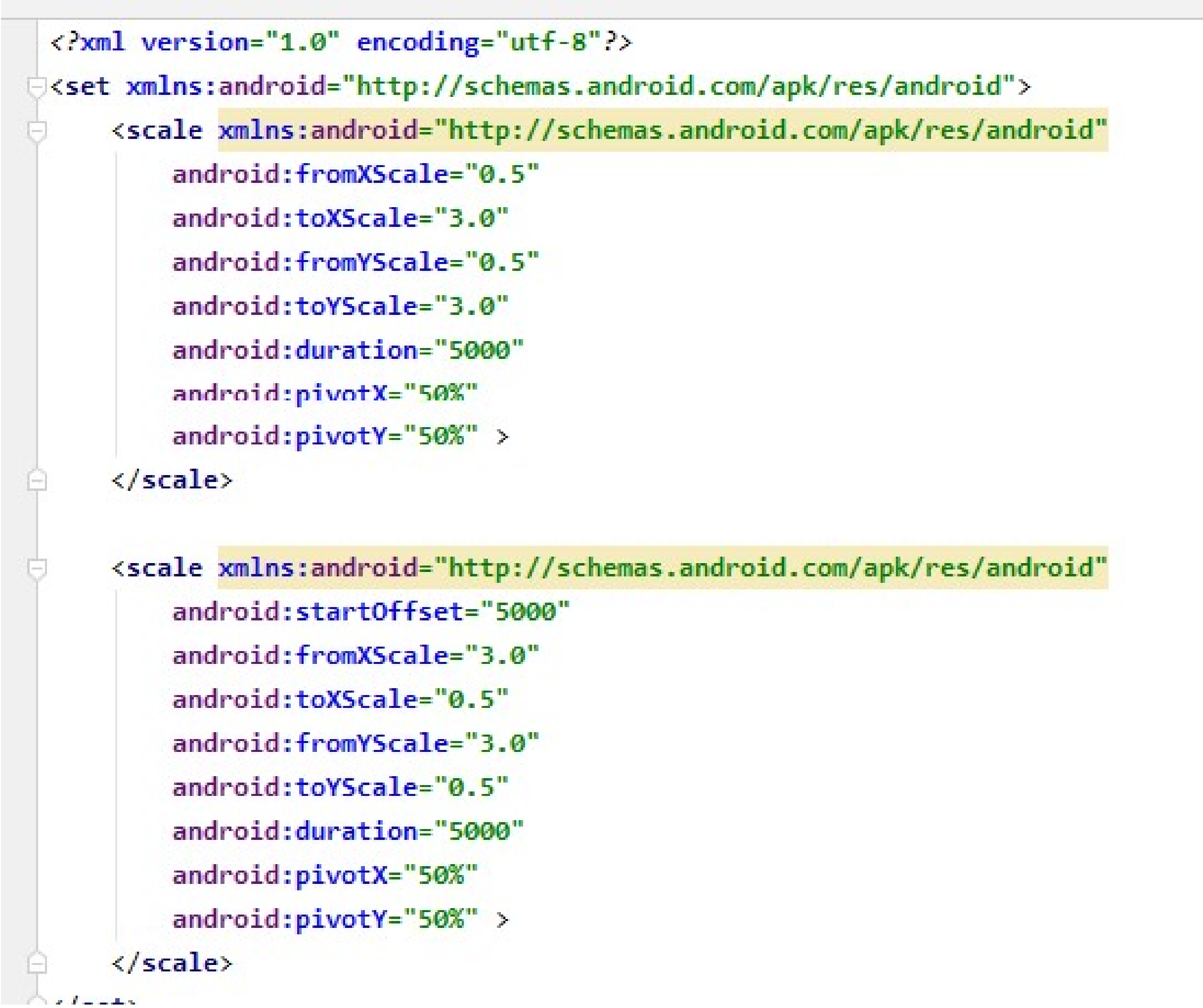
```
ImageView image1 = (ImageView)findViewById(R.id.imageView1);
image.startAnimation(animation);
```

# Example to demonstrates the use of Animation in android.



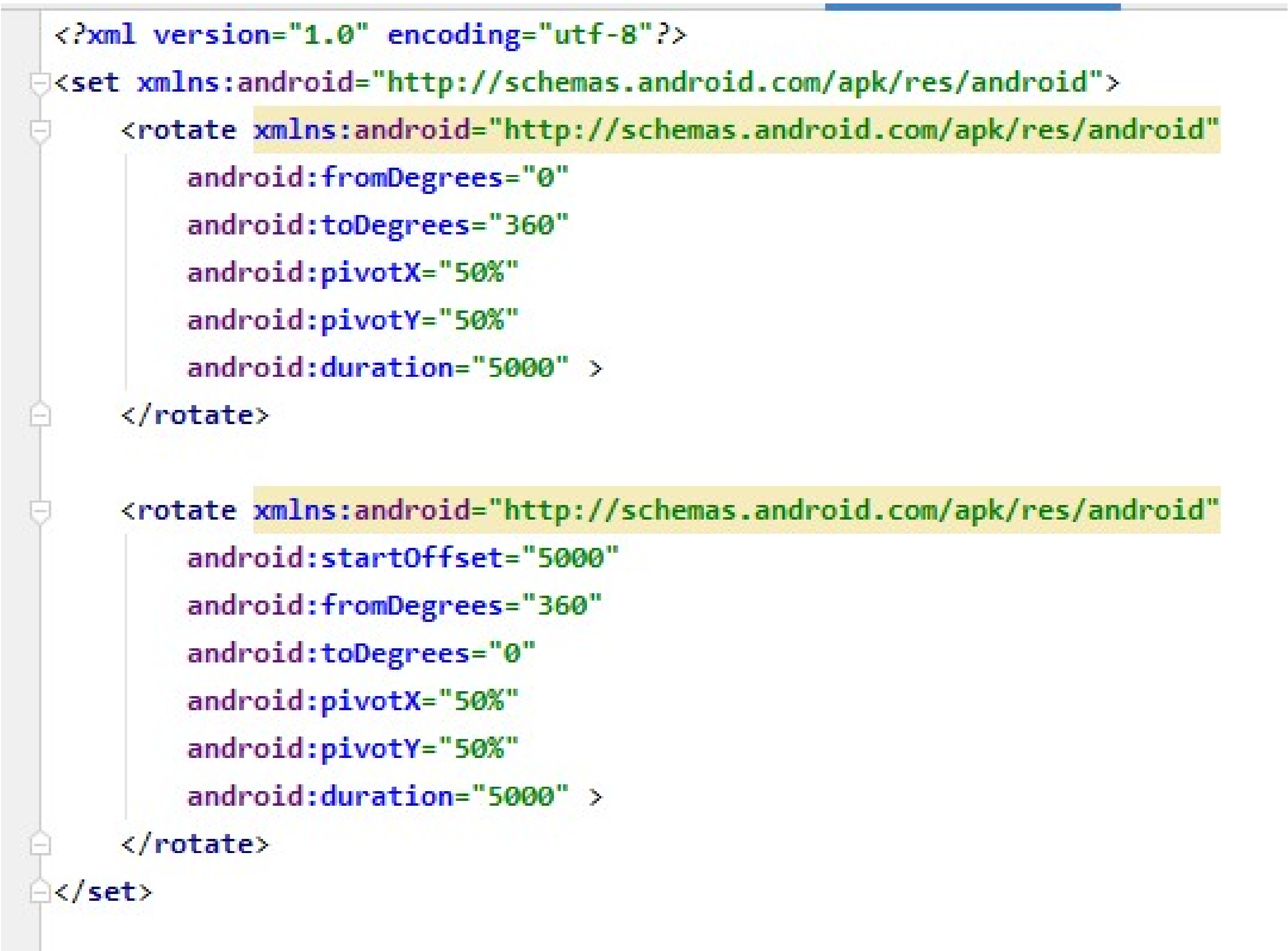
| Steps | Description |
|---|---|
| 1 | You will use Android studio IDE to create an Android application and name it as My Application under a package com.example.sairamkrishna.myapplication. |
| 2 | Modify src/MainActivity.java file to add animation code |
| 3 | Modify layout XML file res/layout/activity_main.xml add any GUI component if required. |
| 4 | Create a new folder under res directory and call it anim. Confim it by visiting res/anim |
| 5 | Right click on anim and click on new and select Android XML file You have to create different files that are listed below. |
| 6 | Create files myanimation.xml,clockwise.xml,fade.xml,move.xml,blink.xml,slide.xml and add the XML code. |
| 7 | No need to change default string constants. Android studio takes care of default constants at values/string.xml. |
| 8 | Run the application and choose a running android device and install the application on it and verify the results. |

# Zoom.xml(or myanimation.xml)



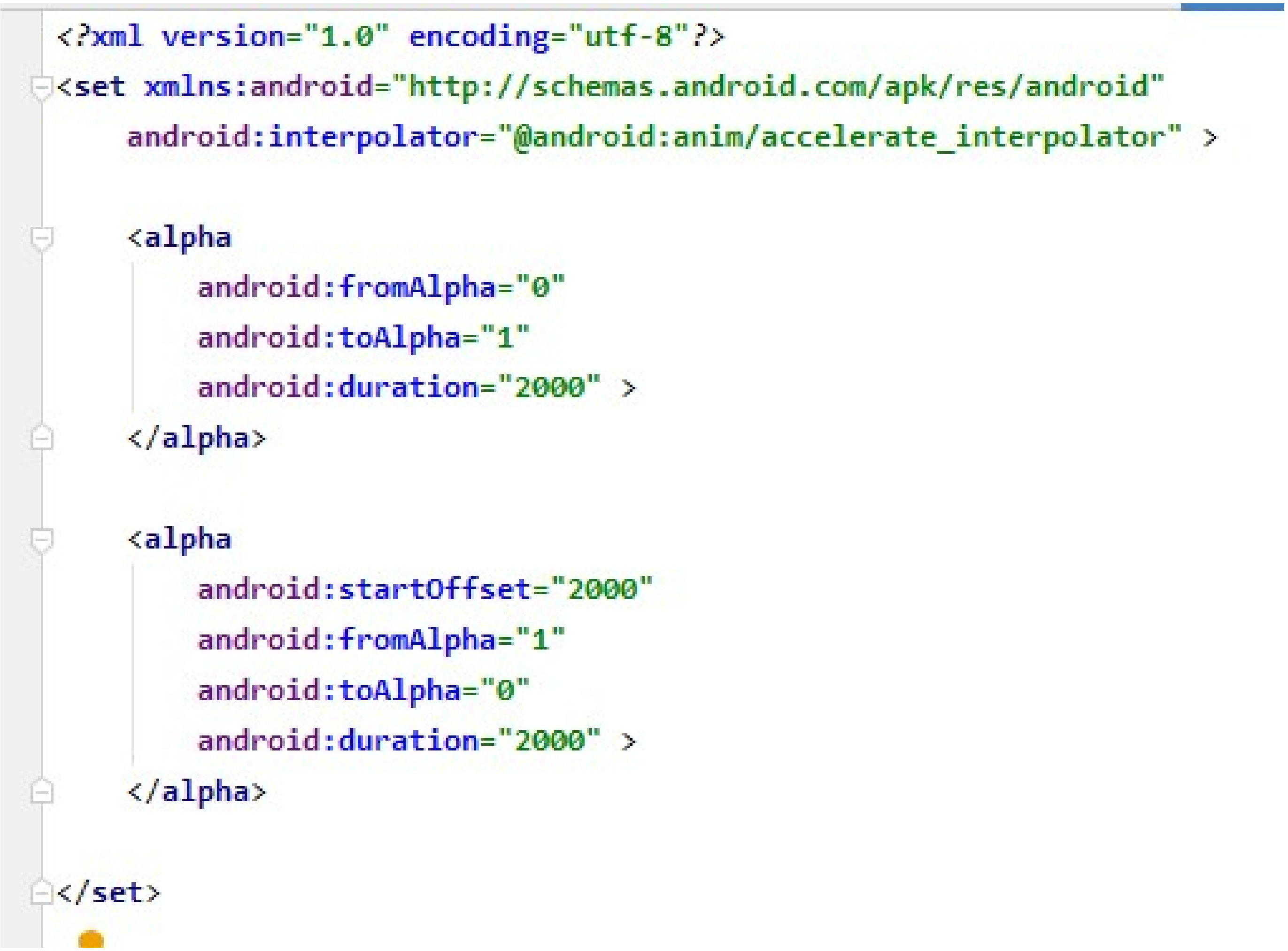
```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <scale xmlns:android="http://schemas.android.com/apk/res/android"
        android:fromXScale="0.5"
        android:toXScale="3.0"
        android:fromYScale="0.5"
        android:toYScale="3.0"
        android:duration="5000"
        android:pivotX="50%"
        android:pivotY="50%" >
    </scale>

    <scale xmlns:android="http://schemas.android.com/apk/res/android"
        android:startOffset="5000"
        android:fromXScale="3.0"
        android:toXScale="0.5"
        android:fromYScale="3.0"
        android:toYScale="0.5"
        android:duration="5000"
        android:pivotX="50%"
        android:pivotY="50%" >
    </scale>
</set>
```

# Clockwise.xml



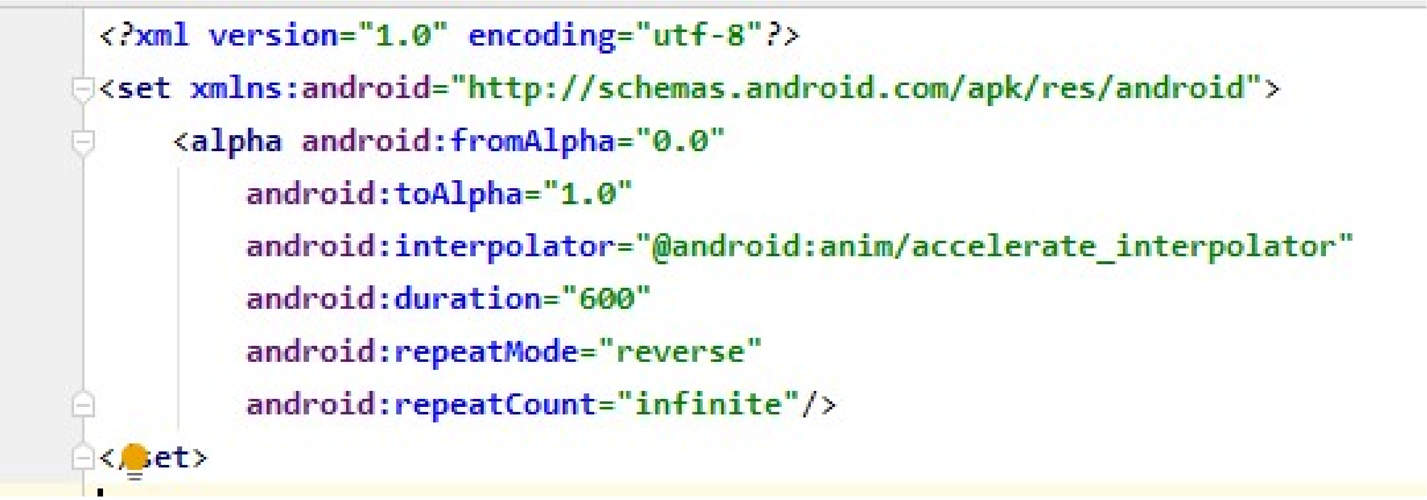
```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <rotate xmlns:android="http://schemas.android.com/apk/res/android"
        android:fromDegrees="0"
        android:toDegrees="360"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration="5000" >
    </rotate>

    <rotate xmlns:android="http://schemas.android.com/apk/res/android"
        android:startOffset="5000"
        android:fromDegrees="360"
        android:toDegrees="0"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration="5000" >
    </rotate>
</set>
```

# Fade.xml



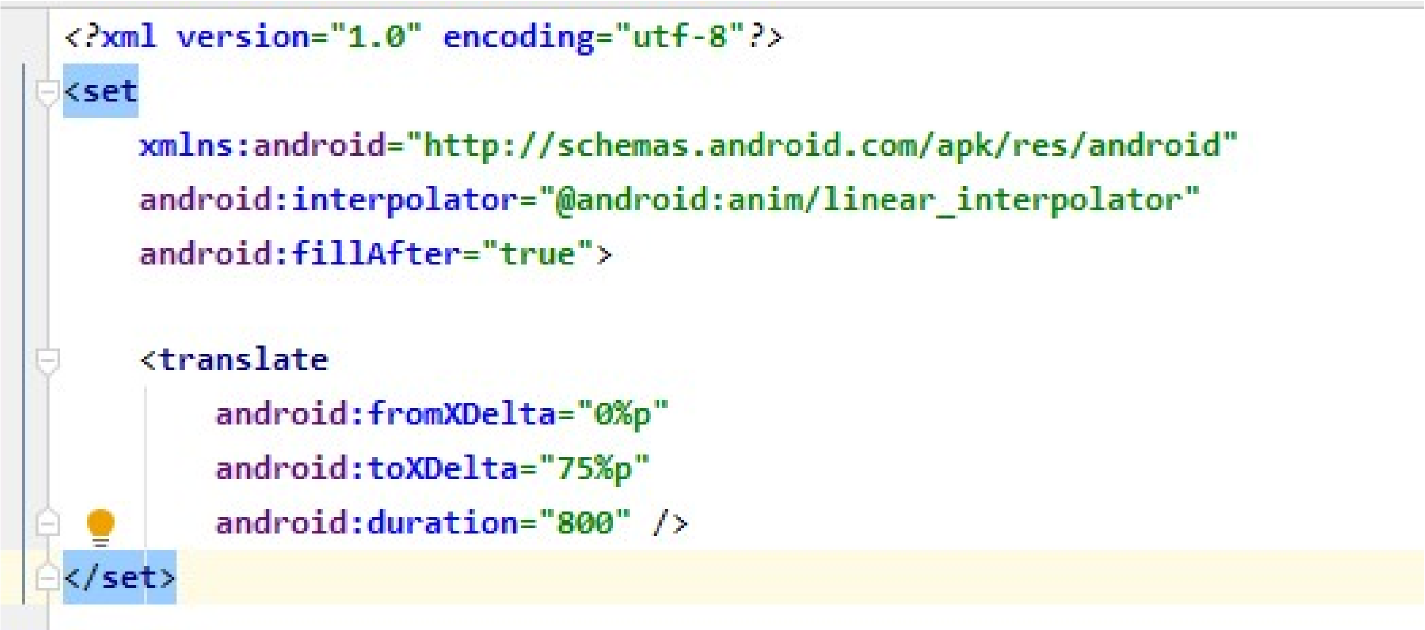
```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:interpolator="@android:anim/accelerate_interpolator" >

    <alpha
        android:fromAlpha="0"
        android:toAlpha="1"
        android:duration="2000" >
    </alpha>

    <alpha
        android:startOffset="2000"
        android:fromAlpha="1"
        android:toAlpha="0"
        android:duration="2000" >
    </alpha>

</set>
```

# Blink.xml



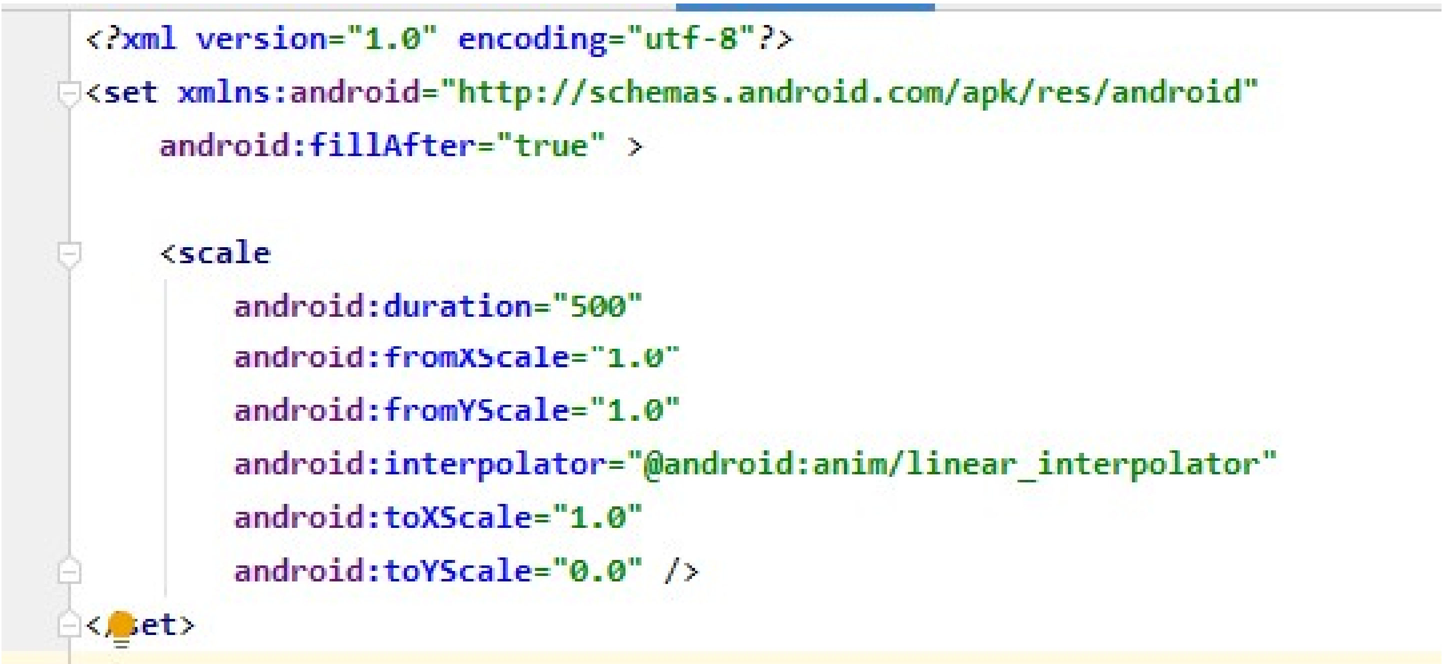
```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <alpha android:fromAlpha="0.0"
        android:toAlpha="1.0"
        android:interpolator="@android:anim/accelerate_interpolator"
        android:duration="600"
        android:repeatMode="reverse"
        android:repeatCount="infinite"/>
</set>
```

# 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>
```

# Slide.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:interpolator="@android:anim/linear_interpolator"
        android:toXScale="1.0"
        android:toYScale="0.0" />
</set>
```