Mobile Application Development

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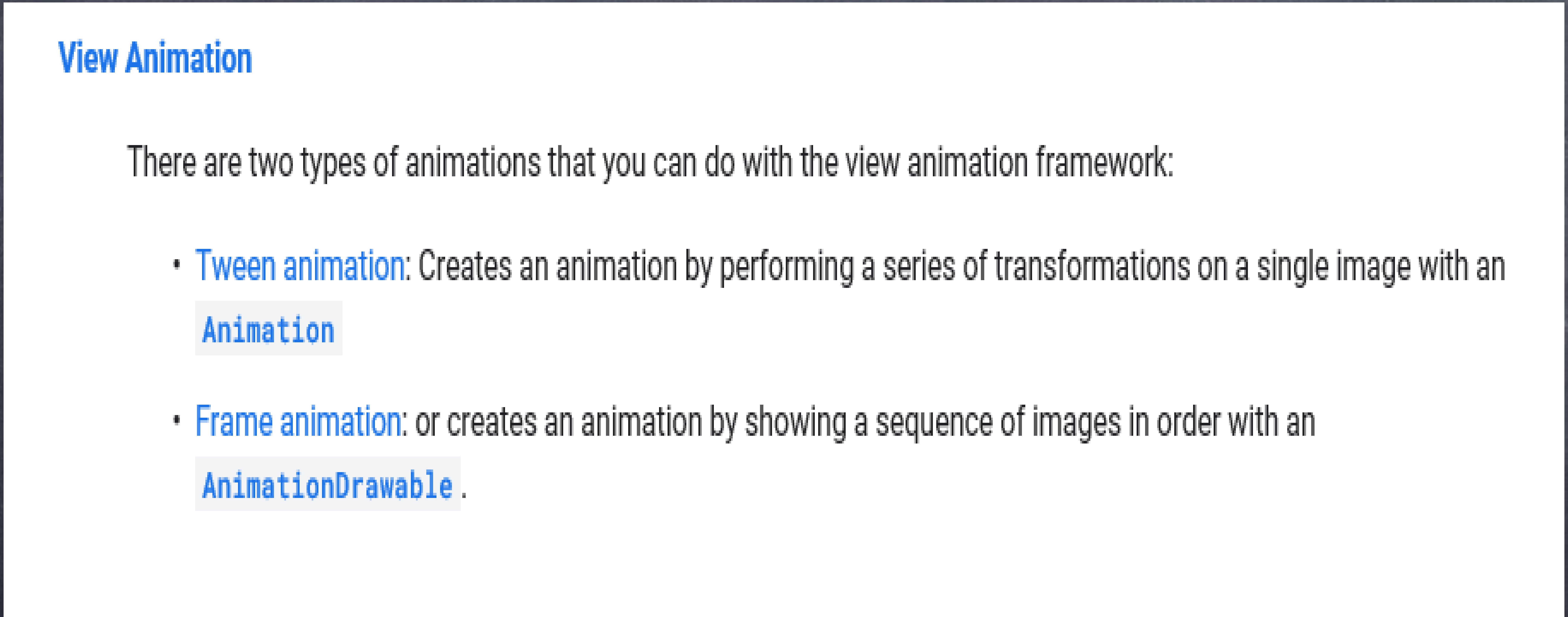
Android Resources

Android Resources:

Animation in Android



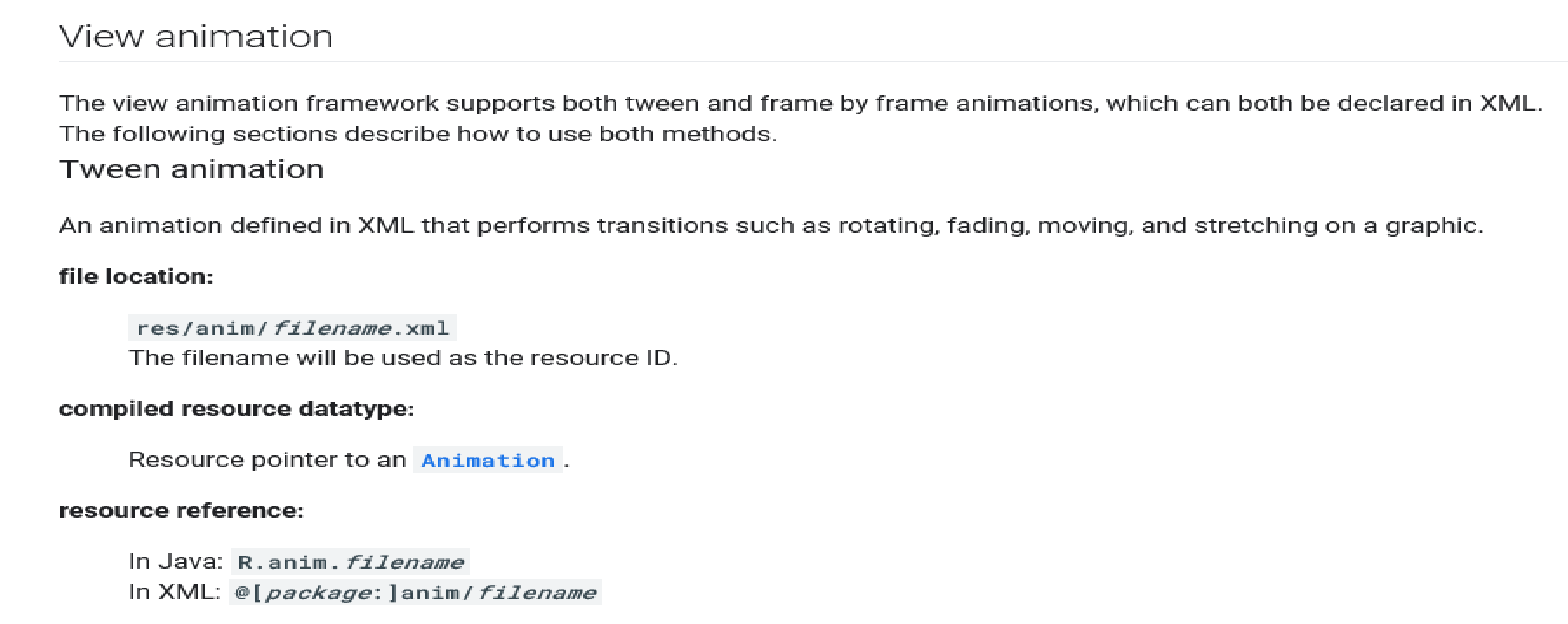
View Animation

There are two types of animations that you can do with the view animation framework:

- Tween animation: Creates an animation by performing a series of transformations on a single image with an `Animation`
- Frame animation: or creates an animation by showing a sequence of images in order with an `AnimationDrawable`.

Android Resources:

Animation in Android



View animation

The view animation framework supports both tween and frame by frame animations, which can both be declared in XML. The following sections describe how to use both methods.

Tween animation

An animation defined in XML that performs transitions such as rotating, fading, moving, and stretching on a graphic.

file location:

`res/anim/filename.xml`
The filename will be used as the resource ID.

compiled resource datatype:

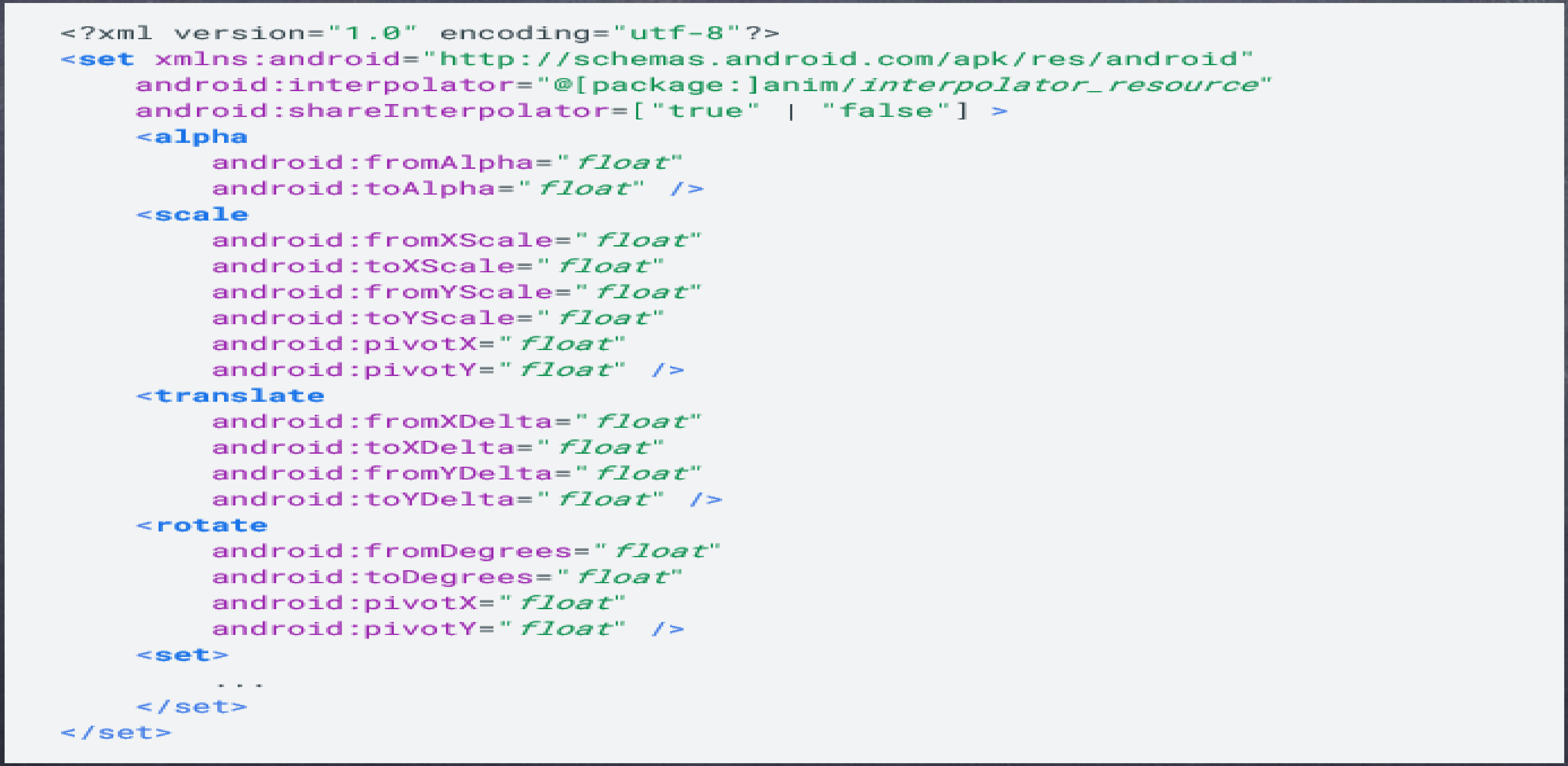
Resource pointer to an `Animation`.

resource reference:

In Java: `R.anim.filename`
In XML: `@[package:]anim/filename`

Android Resources:

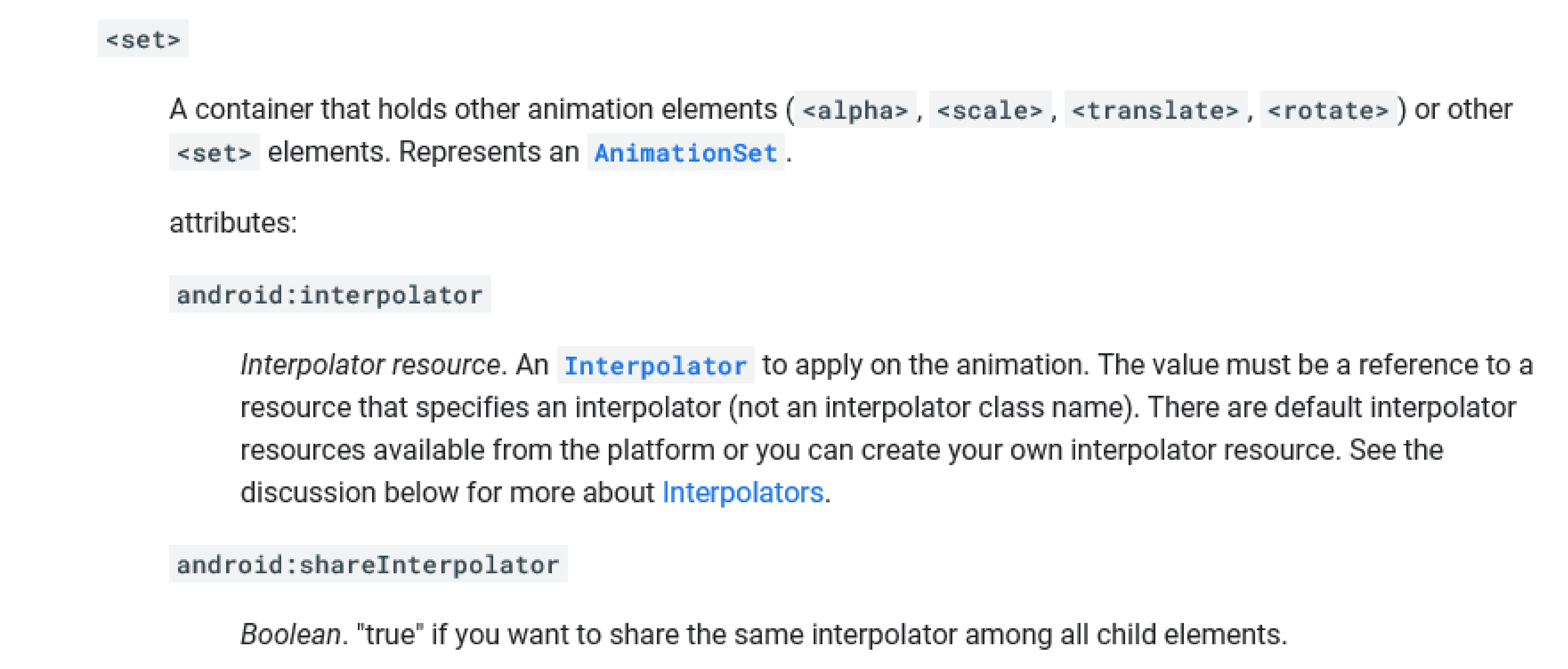
Tween Animation:



```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:interpolator="@[package:]anim/interpolator_resource"
    android:shareInterpolator=["true" | "false"] >
    <alpha
        android:fromAlpha="float"
        android:toAlpha="float" />
    <scale
        android:fromXScale="float"
        android:toXScale="float"
        android:fromYScale="float"
        android:toYScale="float"
        android:pivotX="float"
        android:pivotY="float" />
    <translate
        android:fromXDelta="float"
        android:toXDelta="float"
        android:fromYDelta="float"
        android:toYDelta="float" />
    <rotate
        android:fromDegrees="float"
        android:toDegrees="float"
        android:pivotX="float"
        android:pivotY="float" />
    <set>
        ...
    </set>
</set>
```

Android Resources:

Tween Animation:



`<set>`

A container that holds other animation elements (`<alpha>`, `<scale>`, `<translate>`, `<rotate>`) or other `<set>` elements. Represents an `AnimationSet`.

attributes:

`android:interpolator`

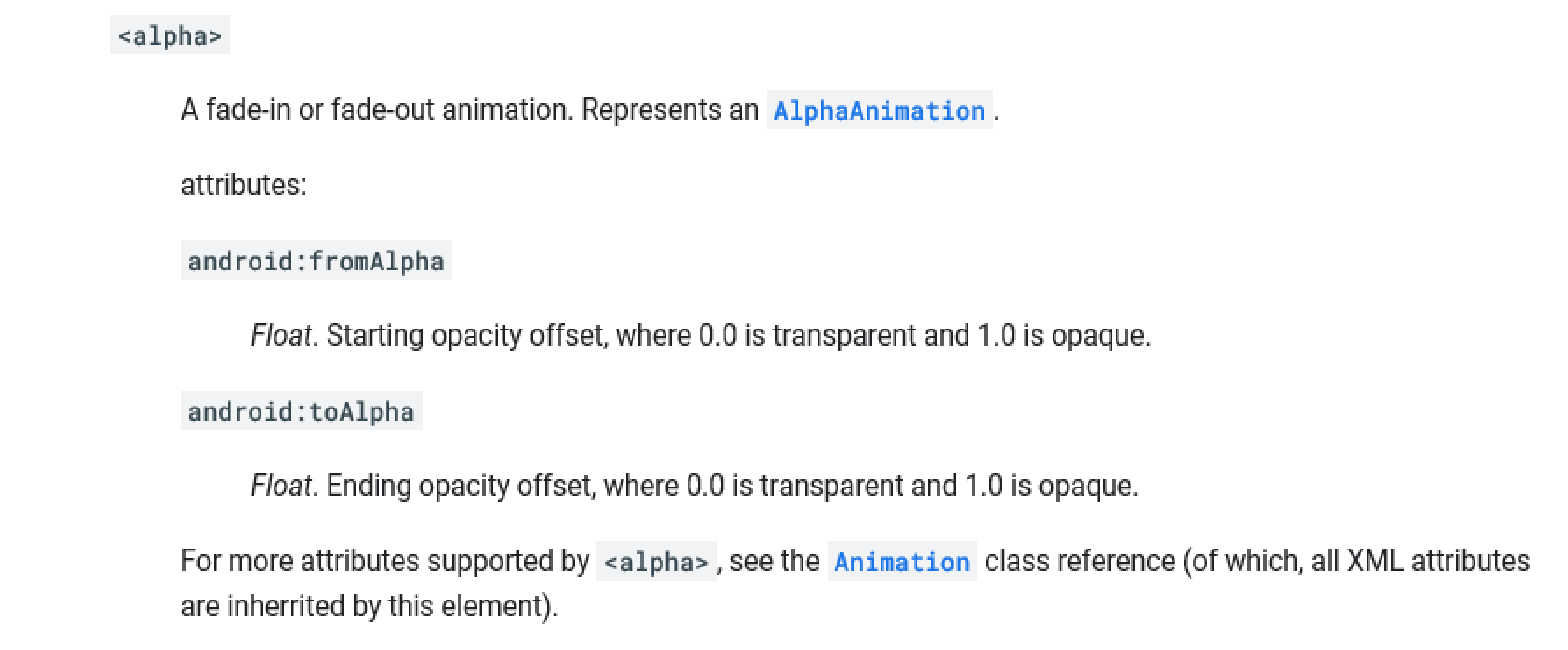
Interpolator resource. An `Interpolator` to apply on the animation. The value must be a reference to a resource that specifies an interpolator (not an interpolator class name). There are default interpolator resources available from the platform or you can create your own interpolator resource. See the discussion below for more about Interpolators.

`android:shareInterpolator`

Boolean. "true" if you want to share the same interpolator among all child elements.

Android Resources:

Tween Animation: Alpha



`<alpha>`

A fade-in or fade-out animation. Represents an `AlphaAnimation`.

attributes:

`android:fromAlpha`

Float. Starting opacity offset, where 0.0 is transparent and 1.0 is opaque.

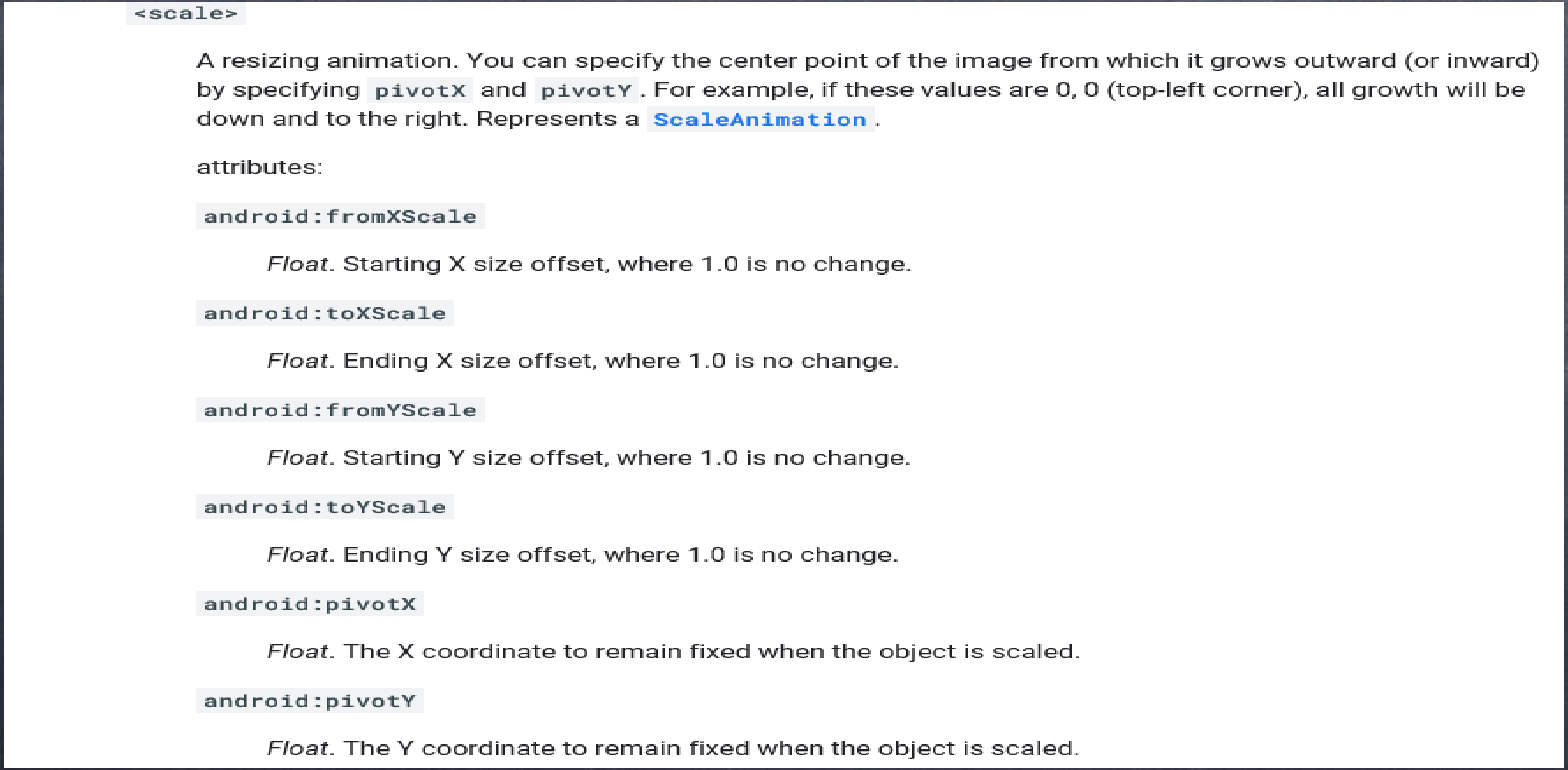
`android:toAlpha`

Float. Ending opacity offset, where 0.0 is transparent and 1.0 is opaque.

For more attributes supported by `<alpha>`, see the `Animation` class reference (of which, all XML attributes are inherrited by this element).

Android Resources:

Tween Animation: Scale



`<scale>`

A resizing animation. You can specify the center point of the image from which it grows outward (or inward) by specifying `pivotX` and `pivotY`. For example, if these values are 0, 0 (top-left corner), all growth will be down and to the right. Represents a `ScaleAnimation`.

attributes:

`android:fromXScale`

Float. Starting X size offset, where 1.0 is no change.

`android:toXScale`

Float. Ending X size offset, where 1.0 is no change.

`android:fromYScale`

Float. Starting Y size offset, where 1.0 is no change.

`android:toYScale`

Float. Ending Y size offset, where 1.0 is no change.

`android:pivotX`

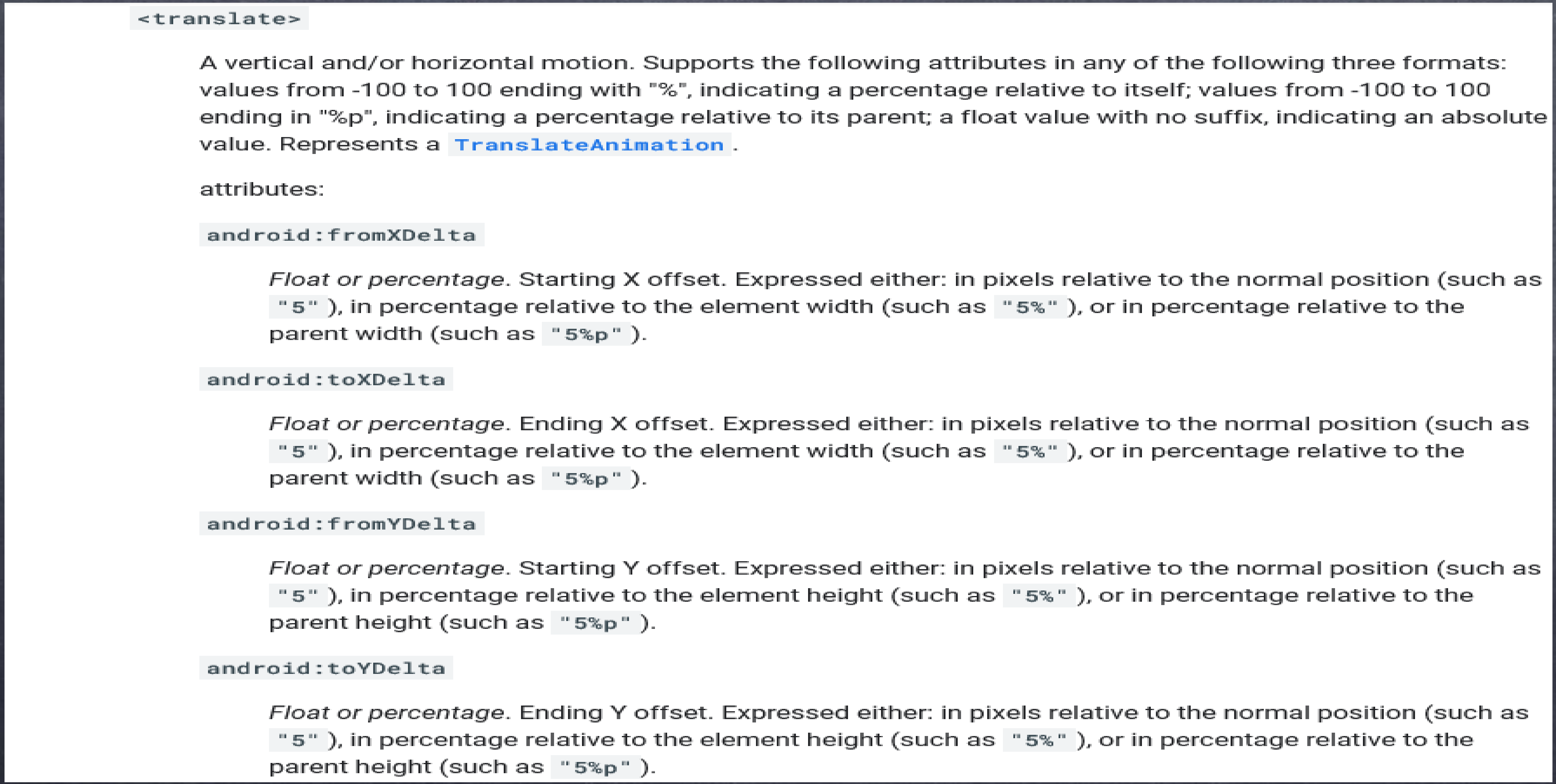
Float. The X coordinate to remain fixed when the object is scaled.

`android:pivotY`

Float. The Y coordinate to remain fixed when the object is scaled.

Android Resources:

Tween Animation: Translate



`<translate>`

A vertical and/or horizontal motion. Supports the following attributes in any of the following three formats: values from -100 to 100 ending with "%", indicating a percentage relative to itself; values from -100 to 100 ending in "%p", indicating a percentage relative to its parent; a float value with no suffix, indicating an absolute value. Represents a `TranslateAnimation`.

attributes:

`android:fromXDelta`

Float or percentage. Starting X offset. Expressed either: in pixels relative to the normal position (such as `"5"`), in percentage relative to the element width (such as `"5%"`), or in percentage relative to the parent width (such as `"5%p"`).

`android:toXDelta`

Float or percentage. Ending X offset. Expressed either: in pixels relative to the normal position (such as `"5"`), in percentage relative to the element width (such as `"5%"`), or in percentage relative to the parent width (such as `"5%p"`).

`android:fromYDelta`

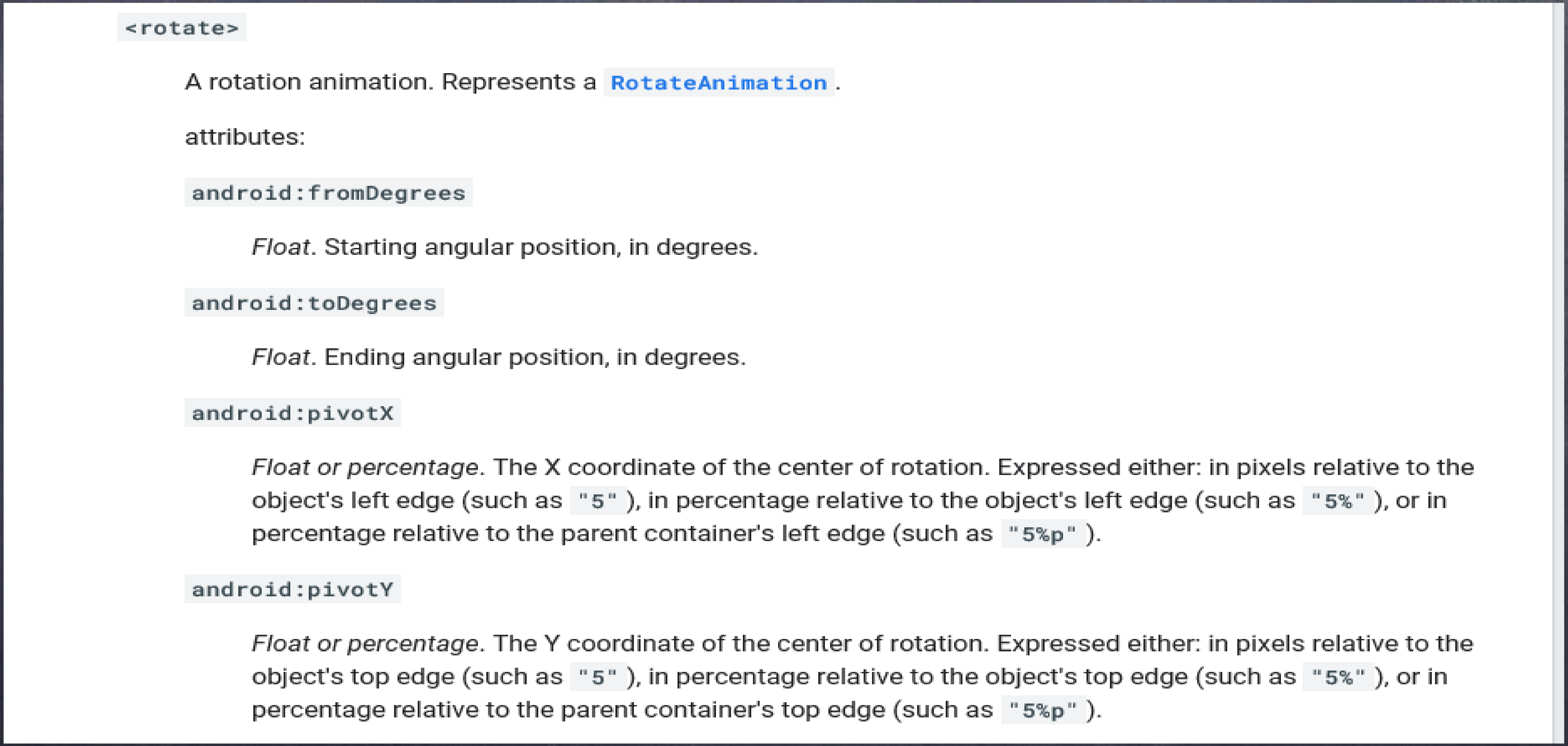
Float or percentage. Starting Y offset. Expressed either: in pixels relative to the normal position (such as `"5"`), in percentage relative to the element height (such as `"5%"`), or in percentage relative to the parent height (such as `"5%p"`).

`android:toYDelta`

Float or percentage. Ending Y offset. Expressed either: in pixels relative to the normal position (such as `"5"`), in percentage relative to the element height (such as `"5%"`), or in percentage relative to the parent height (such as `"5%p"`).

Android Resources:

Tween Animation:Rorate



`<rotate>`

A rotation animation. Represents a `RotateAnimation`.

attributes:

`android:fromDegrees`

Float. Starting angular position, in degrees.

`android:toDegrees`

Float. Ending angular position, in degrees.

`android:pivotX`

Float or percentage. The X coordinate of the center of rotation. Expressed either: in pixels relative to the object's left edge (such as `"5"`), in percentage relative to the object's left edge (such as `"5%"`), or in percentage relative to the parent container's left edge (such as `"5%p"`).

`android:pivotY`

Float or percentage. The Y coordinate of the center of rotation. Expressed either: in pixels relative to the object's top edge (such as `"5"`), in percentage relative to the object's top edge (such as `"5%"`), or in percentage relative to the parent container's top edge (such as `"5%p"`).

Android Resources:

Tween Animation: Example

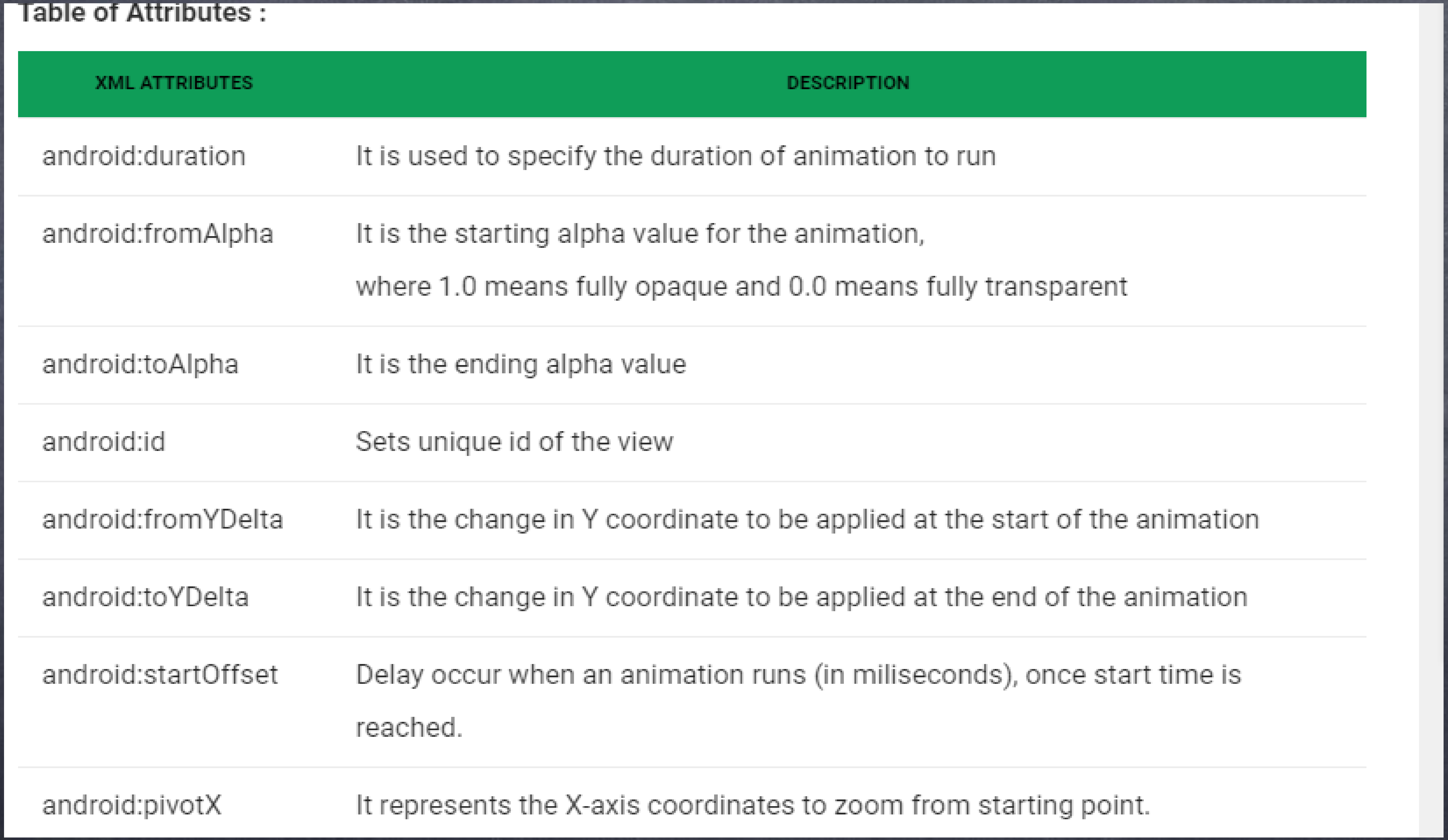
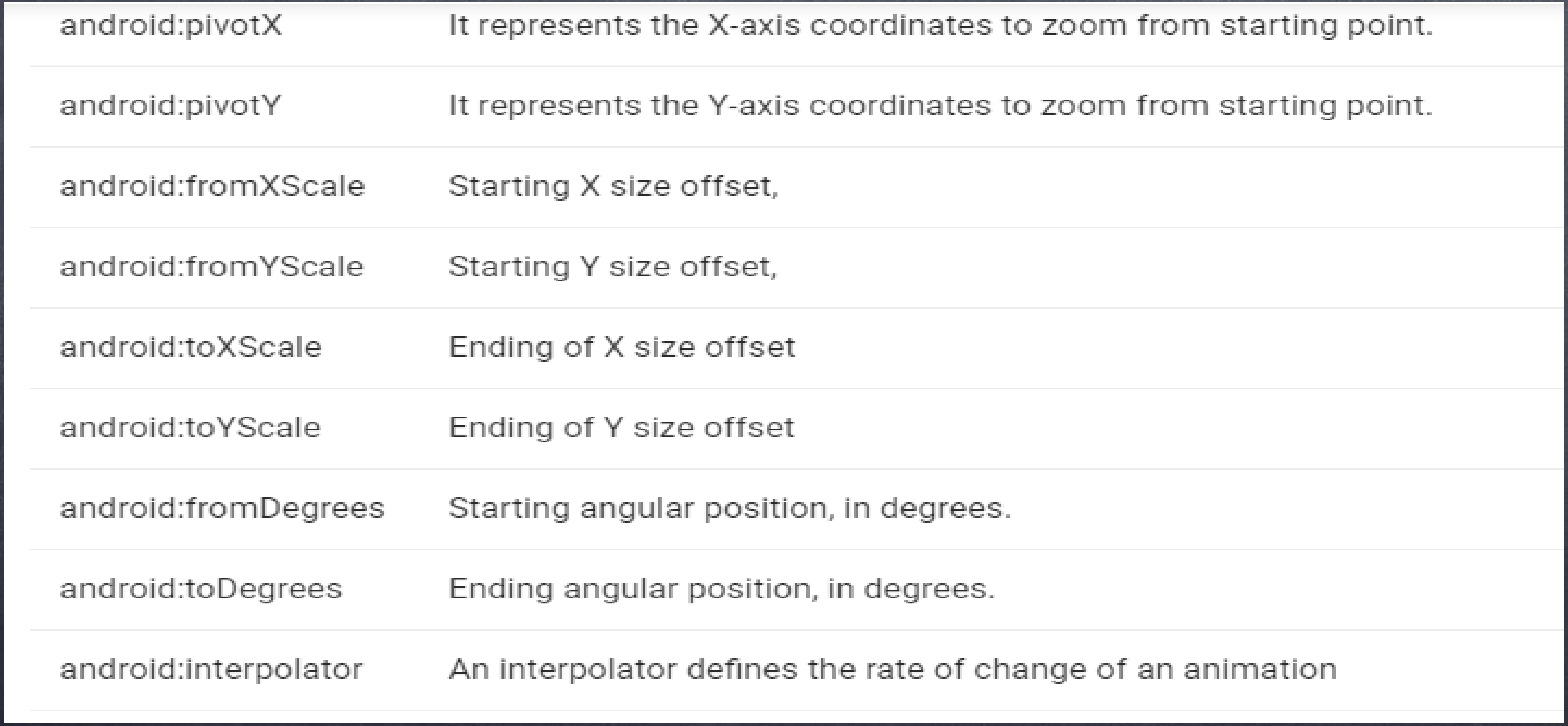


Table of Attributes :

XML ATTRIBUTES	DESCRIPTION
android:duration	It is used to specify the duration of animation to run
android:fromAlpha	It is the starting alpha value for the animation, where 1.0 means fully opaque and 0.0 means fully transparent
android:toAlpha	It is the ending alpha value
android:id	Sets unique id of the view
android:fromYDelta	It is the change in Y coordinate to be applied at the start of the animation
android:toYDelta	It is the change in Y coordinate to be applied at the end of the animation
android:startOffset	Delay occur when an animation runs (in miliseconds), once start time is reached.
android:pivotX	It represents the X-axis coordinates to zoom from starting point.

Android Resources:

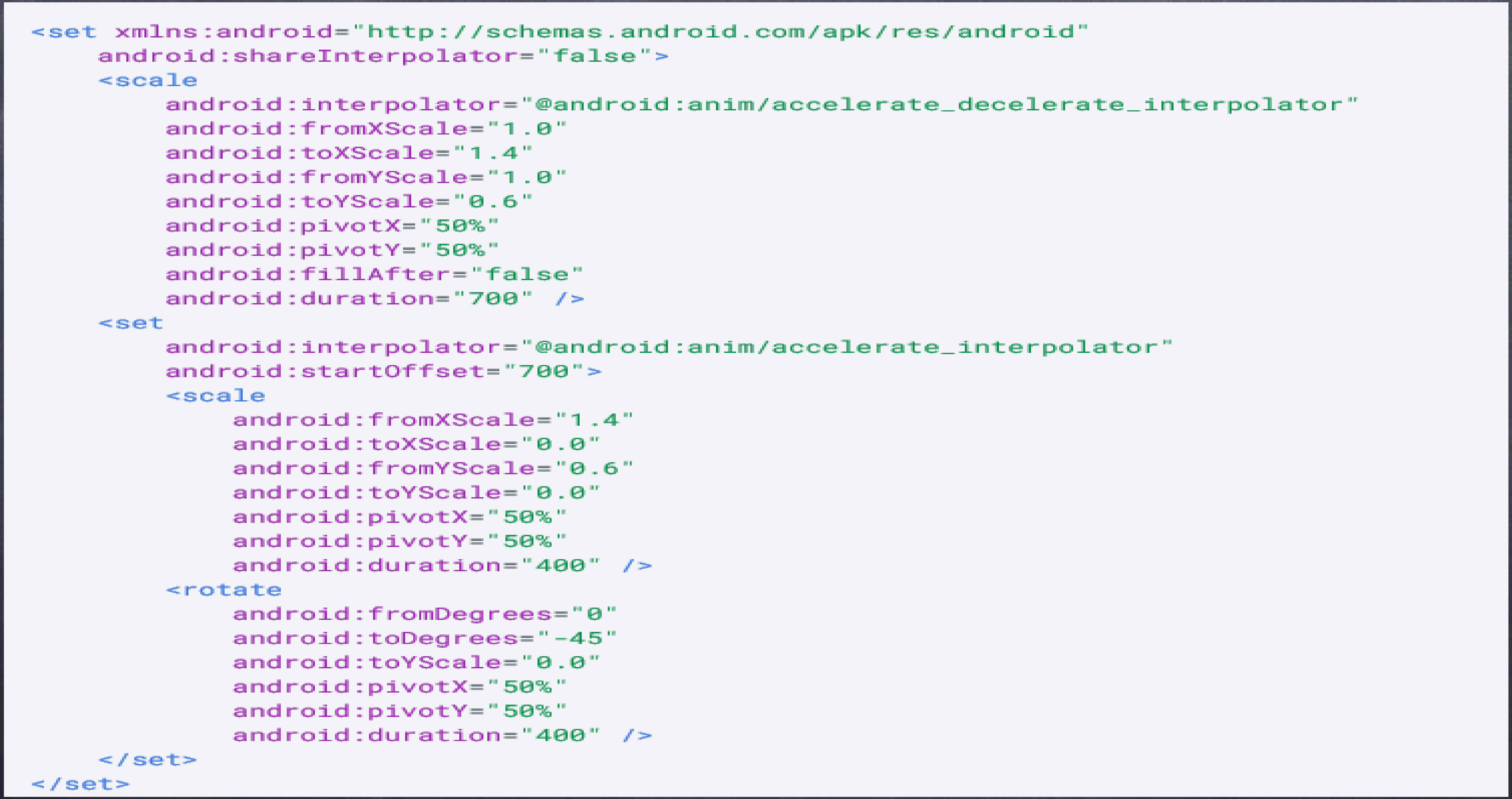
Tween Animation: Example



android:pivotX	It represents the X-axis coordinates to zoom from starting point.
android:pivotY	It represents the Y-axis coordinates to zoom from starting point.
android:fromXScale	Starting X size offset,
android:fromYScale	Starting Y size offset,
android:toXScale	Ending of X size offset
android:toYScale	Ending of Y size offset
android:fromDegrees	Starting angular position, in degrees.
android:toDegrees	Ending angular position, in degrees.
android:interpolator	An interpolator defines the rate of change of an animation

Android Resources:

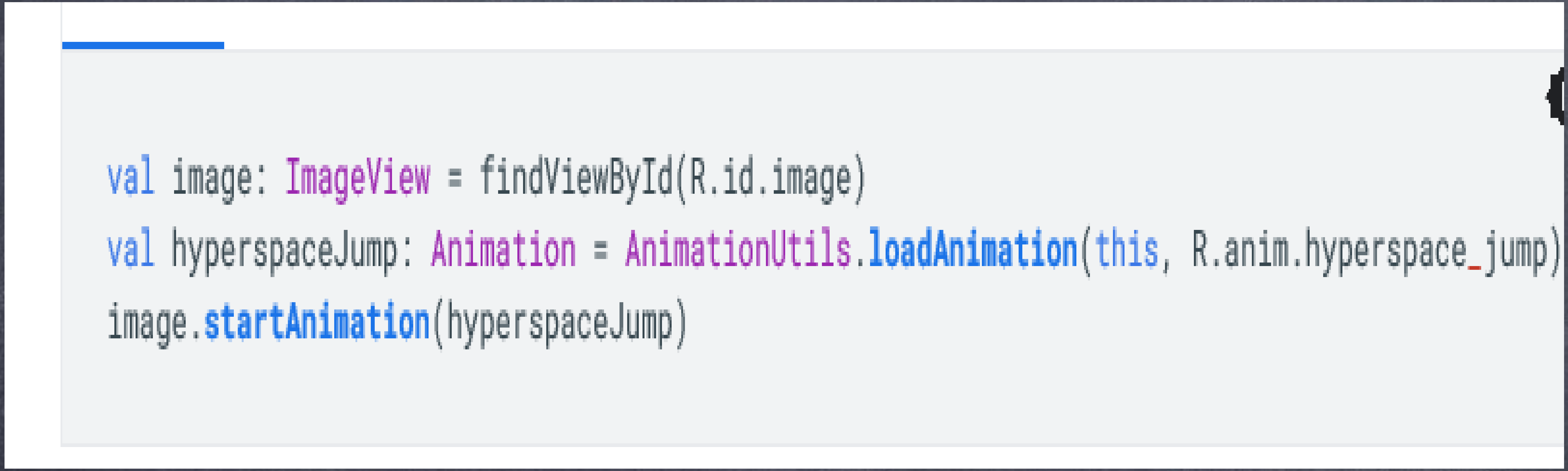
Tween Animation: Example



```
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:shareInterpolator="false">
    <scale
        android:interpolator="@android:anim/accelerate_decelerate_interpolator"
        android:fromXScale="1.0"
        android:toXScale="1.4"
        android:fromYScale="1.0"
        android:toYScale="0.6"
        android:pivotX="50%"
        android:pivotY="50%"
        android:fillAfter="false"
        android:duration="700" />
    <set
        android:interpolator="@android:anim/accelerate_interpolator"
        android:startOffset="700">
        <scale
            android:fromXScale="1.4"
            android:toXScale="0.0"
            android:fromYScale="0.6"
            android:toYScale="0.0"
            android:pivotX="50%"
            android:pivotY="50%"
            android:duration="400" />
        <rotate
            android:fromDegrees="0"
            android:toDegrees="-45"
            android:toYScale="0.0"
            android:pivotX="50%"
            android:pivotY="50%"
            android:duration="400" />
    </set>
</set>
```

Android Resources:

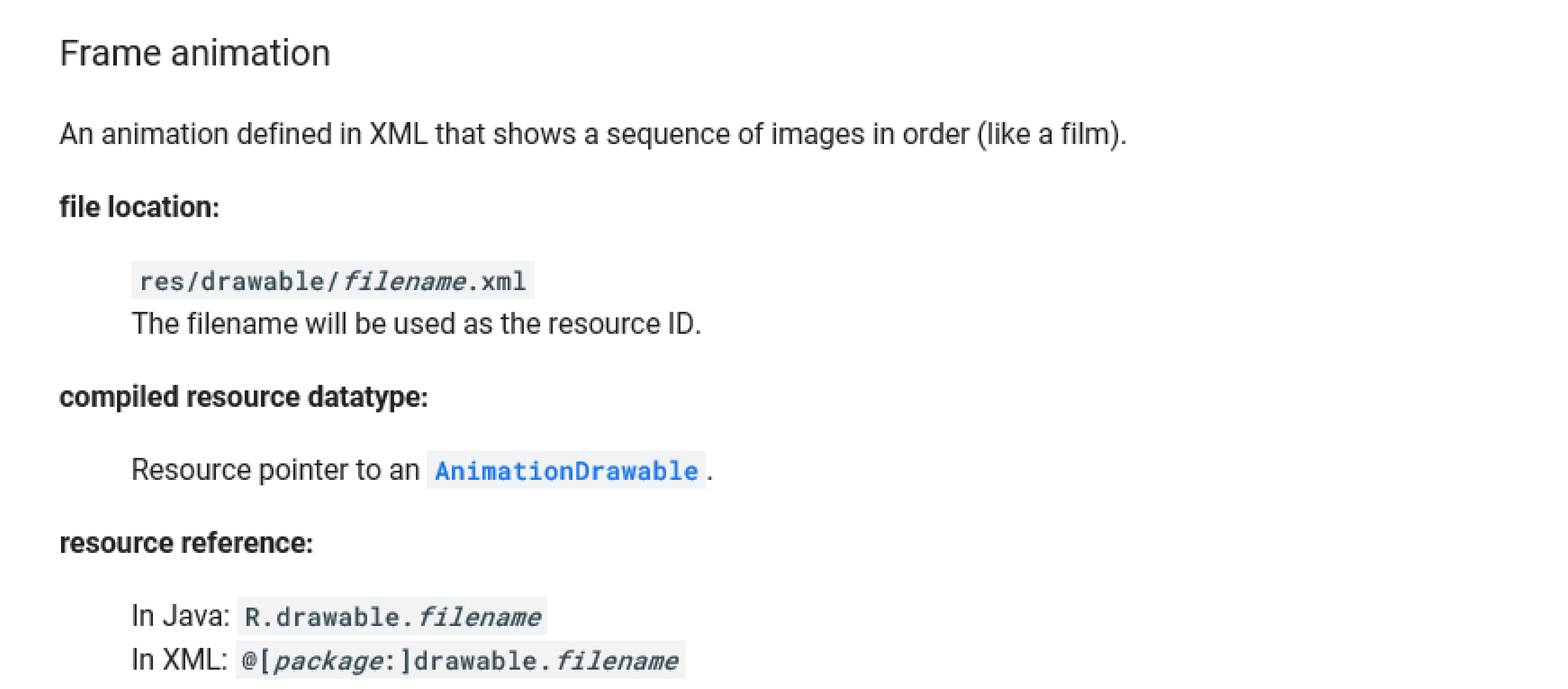
Tween Animation: Example



```
val image: ImageView = findViewById(R.id.image)
val hyperspaceJump: Animation = AnimationUtils.loadAnimation(this, R.anim.hyperspace_jump)
image.startAnimation(hyperspaceJump)
```

Android Resources:

Frame Animation: Example



Frame animation

An animation defined in XML that shows a sequence of images in order (like a film).

file location:

`res/drawable/filename.xml`
The filename will be used as the resource ID.

compiled resource datatype:

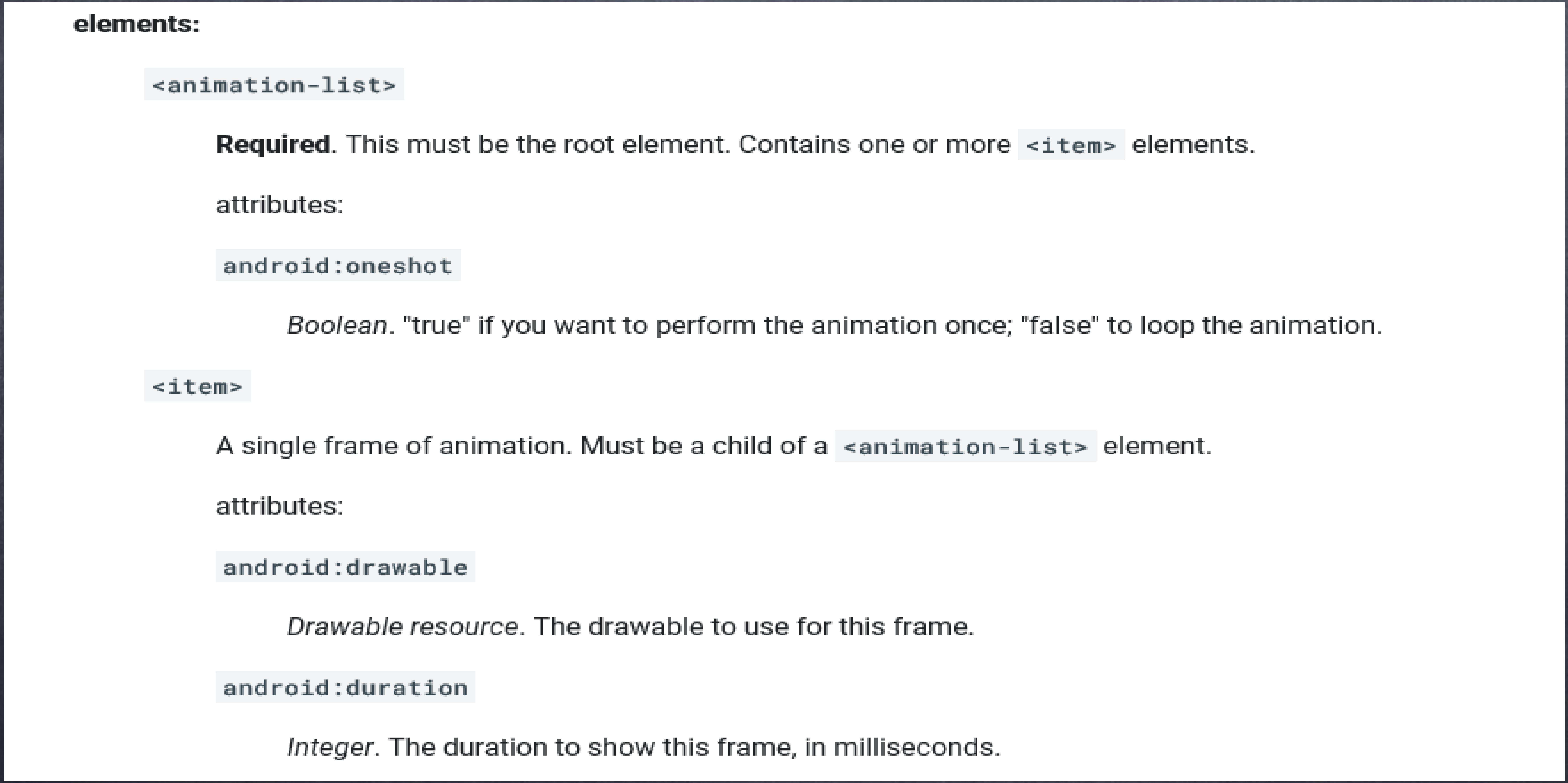
Resource pointer to an `AnimationDrawable`.

resource reference:

In Java: `R.drawable.filename`
In XML: `@[package:]drawable.filename`

Android Resources:

Frame Animation: Example



elements:

`<animation-list>`

Required. This must be the root element. Contains one or more `<item>` elements.

attributes:

`android:oneshot`

Boolean. "true" if you want to perform the animation once; "false" to loop the animation.

`<item>`

A single frame of animation. Must be a child of a `<animation-list>` element.

attributes:

`android:drawable`

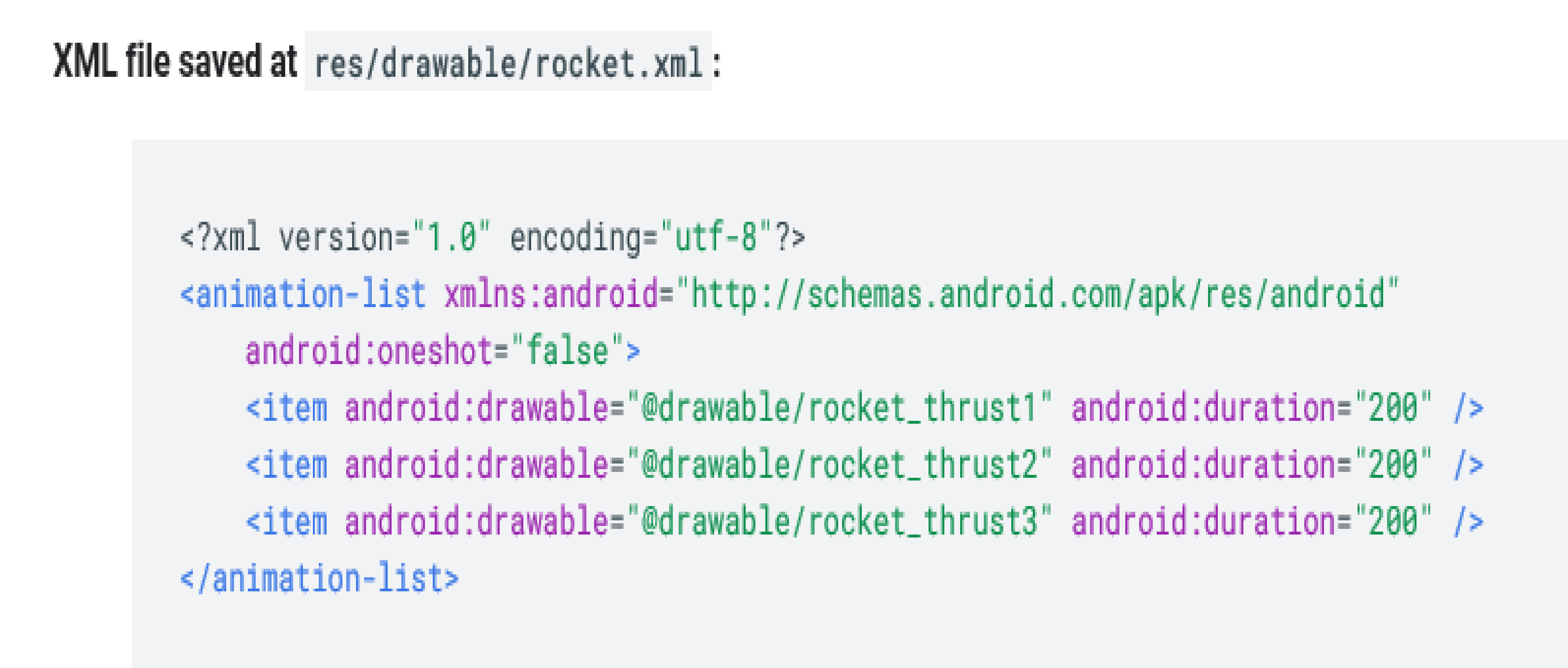
Drawable resource. The drawable to use for this frame.

`android:duration`

Integer. The duration to show this frame, in milliseconds.

Android Resources:

Frame Animation: Example



XML file saved at `res/drawable/rocket.xml`:

```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/rocket_thrust1" android:duration="200" />
    <item android:drawable="@drawable/rocket_thrust2" android:duration="200" />
    <item android:drawable="@drawable/rocket_thrust3" android:duration="200" />
</animation-list>
```

alternative resources-Site references

https://appicon.co/#app-icon

https://www.canva.com/

https://colorhunt.co/

https://material.io/resources/devices/