Property Animation

Sriyank Siddhartha

https://in.linkedin.com/in/sriyank

Property Animation

Used to change a value or property over time.

Applicable for non-view objects as well as views.

Animated object retains it's new properties i.e. properties of the objects are changed.

Property Animation

Property Animation classes

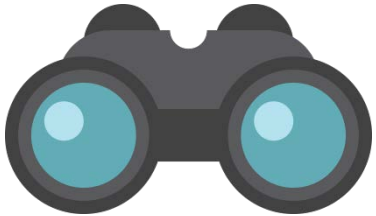
1. Value Animator
2. Object Animator
3. Animator Set

Object Animator is the subclass of Value Animator.

Ways to execute Property Animation

- XML Resource file – inside Animator Directory
- Java file

Value Animator



Animates a int, float or object value over time.

Calculates animation values and contains the timing details of each animation.

Carries the information about whether an animation repeats, listeners that receive update events, and the ability to set custom types to evaluate.

Does not operate on the property of the objects directly.

- Need Listeners to apply changes to an object over time.

Object Animator

Subclass of Value Animator.

Syntax :

```
ObjectAnimator.ofType (object , “propertyName”, [starting Value], ending value);
```

. Example :

```
TextView tv = (TextView) findViewById(R.id.textview);
ObjectAnimator animator = ObjectAnimator.ofFloat(tv, “x”, 50f, 150f);
animator.setDuration(2000);
animator.start();
```

ObjectAnimator do not require a Listener, the object properties are update over time.

Object Animator

Syntax of Object Animator (XML)

```
<objectAnimator
    android:propertyName = "string"
    android:duration = "int"
    android:valueFrom = "float | int | color"
    android:valueTo = "float | int | color"
    android:startOffset = "int"
    android:repeatCount = "int"
    android:repeatMode = ["repeat" | "reverse"]
    android:valueType = ["intType" | "floatType"]
/>
```

Property Name

alpha	- fade in , fade out
rotation	- normal rotation
rotationY	- rotation along Y axis
rotationX	- rotation along X axis
scaleX	- scale in X axis
scaleY	- scale in Y axis
translationX	- move in X axis
translationY	- move in Y axis
x	- translation with respect to it's container
y	- translation with respect to it's container

Property Animation

Using XML Resource files

Property Animation

Using Java files

Property Animation

Evaluators

Evaluators

Helps to calculate values for a given property over time

Helps to animate ARGB colors and Rect Objects with the help of ofObject method.

Types of Evaluators :-

IntEvaluator - Calculate values for int properties.

FloatEvaluator - Calculate values for float properties.

ArgbEvaluator - Calculate values for color properties that are represented as hexidecimal values.

TypeEvaluator - An interface that helps us to create own custom evaluator.
- Helps to animate an object property other than int, float or color too.

Evaluators

```
ObjectAnimator anim = ObjectAnimator.ofObject ( target , "backgroundColor",
                    new ArgbEvaluator() , Color.RED, Color.GREEN );
anim.setDuration( 2000 );
anim.start();
```

Comparison

View animation vs Property animation

Comparison

View Animation

- It only animates the View objects. Do not animate non-view objects
- Helps to animate few aspects of view such as scaling, rotation etc but not the background color.
- The actual property of the View is not changed. When the animation finishes the original position is not changed only the view is redrawn.

Property Animation

- It animates the non-view objects too.
- It overcomes such Limitation of View Animation.
- The actual properties of the objects are modified.