CAAnimation Class Reference

Graphics & Animation: Animation

2007-10-31

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Simultaneously published in the United States and Canada.

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Availability	Available in iOS 2.0 and later.
Declared in	CAAnimation.h
Companion guides	Core Animation Programming Guide Core Animation Cookbook

Overview

`CAAnimation` is an abstract animation class. It provides the basic support for the `CAMediaTiming` and `CAAction` protocols.

Tasks

Archiving Properties

`- shouldArchiveValueForKey:` (page 9)
Specifies whether the value of the property for a given key is archived.

Providing Default Values for Properties

`+ defaultValueForKey:` (page 8)
Specifies the default value of the property with the specified key.

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`+ animation` (page 7)
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Animation Attributes

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Determines if the animation is removed from the target layer's animations upon completion.

`- isRemovedOnCompletion` (page 8)
A synthesized accessor for the `removedOnCompletion` (page 7) property.

`timingFunction` (page 7) *property*
An optional timing function defining the pacing of the animation.

Getting and Setting the Delegate

`delegate` (page 6) *property*
Specifies the receiver's delegate object.

Animation Progress

`- animationDidStart:` (page 9) *delegate method*
Called when the animation begins its active duration.

`- animationDidStop:finished:` (page 9) *delegate method*
Called when the animation completes its active duration or is removed from the object it is attached to.

Properties

For more about Objective-C properties, see "Properties" in *The Objective-C Programming Language*.

delegate

Specifies the receiver's delegate object.

```
@property(retain) id delegate
```

Discussion
Defaults to `nil`.

Important: The `delegate` object is retained by the receiver. This is a rare exception to the memory management rules described in *Memory Management Programming Guide*.

An instance of `CAAnimation` should not be set as a delegate of itself. Doing so (outside of a garbage-collected environment) will cause retain cycles.

Availability
Available in iOS 2.0 and later.

Declared In
`CAAnimation.h`

removedOnCompletion

Determines if the animation is removed from the target layer's animations upon completion.

```
@property BOOL removedOnCompletion
```

Discussion
When `YES`, the animation is removed from the target layer's animations once its active duration has passed. Defaults to `YES`.

Availability
Available in iOS 2.0 and later.

Declared In
`CAAnimation.h`

timingFunction

An optional timing function defining the pacing of the animation.

```
@property(retain) CAMediaTimingFunction *timingFunction
```

Discussion
Defaults to `nil`, indicating linear pacing.

Availability
Available in iOS 2.0 and later.

Declared In
`CAAnimation.h`

Class Methods

animation

Creates and returns a new `CAAnimation` instance.

```
+ (id)animation
```

Return Value
An `CAAnimation` object whose input values are initialized.

Availability
Available in iOS 2.0 and later.

Declared In
`CAAnimation.h`

defaultValueForKey:

Specifies the default value of the property with the specified key.

```
+ (id)defaultValueForKey:(NSString *)key
```

Parameters

key

The name of one of the receiver's properties.

Return Value
The default value for the named property. Returns `nil` if no default value has been set.

Discussion
If this method returns `nil` a suitable "zero" default value for the property is provided, based on the declared type of the `key`. For example, if *key* is a *CGSize* object, a size of (0.0,0.0) is returned. For a `CGRect` an empty rectangle is returned. For `CGAffineTransform` and `CATransform3D`, the appropriate identity matrix is returned.

Special Considerations

If *key* is not a known for property of the class, the result of the method is undefined.

Availability
Available in iOS 2.0 and later.

Declared In
`CAAnimation.h`

Instance Methods

isRemovedOnCompletion

A synthesized accessor for the `removedOnCompletion` (page 7) property.

```
- (BOOL)isRemovedOnCompletion
```

See Also
`@property removedOnCompletion` (page 7)

shouldArchiveValueForKey:

Specifies whether the value of the property for a given key is archived.

```
- (BOOL)shouldArchiveValueForKey:(NSString *)key
```

Parameters

key

The name of one of the receiver's properties.

Return Value

`YES` if the specified property should be archived, otherwise `NO`.

Discussion

Called by the object's implementation of `encodeWithCoder:`. The object must implement keyed archiving.

The default implementation returns `YES`.

Availability

Available in iOS 4.0 and later.

Declared In

`CAAnimation.h`

Delegate Methods

animationDidStart:

Called when the animation begins its active duration.

```
- (void)animationDidStart:(CAAnimation *)theAnimation
```

Parameters

theAnimation

The `CAAnimation` instance that started animating.

Availability

Available in iOS 2.0 and later.

Declared In

`CAAnimation.h`

animationDidStop:finished:

Called when the animation completes its active duration or is removed from the object it is attached to.

```
- (void)animationDidStop:(CAAnimation *)theAnimation
    finished:(BOOL)flag
```

Parameters

theAnimation

The `CAAnimation` instance that stopped animating.

flag

If YES, the animation reached the end of its active duration without being removed.

Availability
Available in iOS 2.0 and later.

Declared In
CAAnimation.h

Document Revision History

This table describes the changes to *CAAnimation Class Reference*.

Date	Notes
2007-10-31	Added a warning to the setDelegate: method about retain cycles.
2007-07-24	New document that describes the abstract class that manages the timing and pacing of an animation.

Document Revision History