
NSMutableAttributedString Class Reference

[Cocoa > Data Management](#)



2006-06-28



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NSMutableAttributedString Class Reference

Inherits from	NSAttributedString : NSObject
Conforms to	NSCoding (NSAttributedString) NSCopying (NSAttributedString) NSMutableCopying (NSAttributedString) NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.0 and later.
Companion guide	Attributed Strings Programming Guide
Declared in	NSAttributedString.h
Related sample code	CocoaVideoFrameToGWorld CoreRecipes iSpend NSGLImage OpenGL Screensaver

Overview

`NSMutableAttributedString` declares the programmatic interface to objects that manage mutable attributed strings. You can add and remove characters (raw strings) and attributes separately or together as attributed strings. See the class description for `NSAttributedString` for more information about attributed strings.

When working with the Application Kit, you must also clean up changed attributes using the various `fix...` methods. See “Changing an Attributed String” for more information on fixing attributes. These methods, as well as others involving setting graphical attributes, are described in `NSMutableAttributedString` Additions in the Application Kit.

`NSMutableAttributedString` adds two primitive methods to those of `NSAttributedString`. These primitive methods provide the basis for all the other methods in its class. The primitive `replaceCharactersInRange:withString:` (page 12) method replaces a range of characters with those from a string, leaving all attribute information outside that range intact. The primitive `setAttributes:range:` (page 13) method sets attributes and values for a given range of characters, replacing any previous attributes and values for that range.

The Application Kit also uses `NSParagraphStyle` and its subclass `NSMutableParagraphStyle` to encapsulate the paragraph or ruler attributes used by the `NSAttributedString` classes.

Note that the default font for `NSAttributedString` objects is Helvetica 12-point, which differs from the Mac OS X system font Lucida Grande, so you may wish to create the string with non-default attributes suitable for your application using, for example, `initWithString:attributes:`.

Tasks

Retrieving Character Information

- [mutableString](#) (page 11)
Returns the character contents of the receiver as an `NSMutableString` object.

Changing Characters

- [replaceCharactersInRange:withString:](#) (page 12)
Replaces the characters in the given range with the characters of the given string.
- [deleteCharactersInRange:](#) (page 9)
Deletes the characters in the given range along with their associated attributes.

Changing Attributes

- [setAttributes:range:](#) (page 13)
Sets the attributes for the characters in the specified range to the specified attributes.
- [addAttribute:value:range:](#) (page 7)
Adds an attribute with the given name and value to the characters in the specified range.
- [addAttributes:range:](#) (page 8)
Adds the given collection of attributes to the characters in the specified range.
- [removeAttribute:range:](#) (page 11)
Removes the named attribute from the characters in the specified range.

Changing Characters and Attributes

- [appendAttributedString:](#) (page 8)
Adds the characters and attributes of a given attributed string to the end of the receiver.
- [insertAttributedString:atIndex:](#) (page 10)
Inserts the characters and attributes of the given attributed string into the receiver at the given index.
- [replaceCharactersInRange:withAttributedString:](#) (page 12)
Replaces the characters and attributes in a given range with the characters and attributes of the given attributed string.
- [setAttributedString:](#) (page 13)
Replaces the receiver's entire contents with the characters and attributes of the given attributed string.

Grouping Changes

- [beginEditing](#) (page 9)
Overridden by subclasses to buffer or optimize a series of changes to the receiver's characters or attributes, until it receives a matching [endEditing](#) (page 10) message, upon which it can consolidate changes and notify any observers that it has changed.
- [endEditing](#) (page 10)
Overridden by subclasses to consolidate changes made since a previous [beginEditing](#) (page 9) message and to notify any observers of the changes.

Instance Methods

addAttribute:value:range:

Adds an attribute with the given name and value to the characters in the specified range.

```
(void)addAttribute:(NSString *)name value:(id)value range:(NSRange)aRange
```

Parameters

name

A string specifying the attribute name.

value

The attribute value associated with *name*.

aRange

The range of characters to which the specified attribute/value pair applies.

Discussion

You may assign any *name/value* pair you wish to a range of characters, in addition to the standard attributes described in the “Constants” section of NSAttributedString Additions. Raises an `NSInvalidArgumentException` if *name* or *value* is `nil` and an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver's characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [addAttributes:range:](#) (page 8)
- [removeAttribute:range:](#) (page 11)

Related Sample Code

CoreRecipes
IBFragmmentView
iSpend
TipWrapper

Declared In

NSAttributedString.h

addAttributes:range:

Adds the given collection of attributes to the characters in the specified range.

```
- (void)addAttributes:(NSDictionary *)attributes range:(NSRange)aRange
```

Parameters

attributes

A dictionary containing the attributes to add.

aRange

The range of characters to which the specified attributes apply.

Discussion

You may assign any name/value pair you wish to a range of characters, in addition to the standard attributes described in the “Constants” section of NSAttributedString Additions. Raises an `NSInvalidArgumentException` if *attributes* is `nil` and an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver’s characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [addAttribute:value:range:](#) (page 7)
- [removeAttribute:range:](#) (page 11)

Related Sample Code

TextLinks

VertexPerformanceTest

Declared In

NSAttributedString.h

appendAttributedString:

Adds the characters and attributes of a given attributed string to the end of the receiver.

```
- (void)appendAttributedString:(NSAttributedString *)attributedString
```

Parameters

attributedString

The string whose characters and attributes are added.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [insertAttributedString:atIndex:](#) (page 10)
- + [attributedStringWithAttachment:](#) (NSAttributedString Additions)

Related Sample Code

BackgroundExporter

CoreRecipes

iSpend

OpenGL Screensaver

Declared In

NSAttributedString.h

beginEditing

Overridden by subclasses to buffer or optimize a series of changes to the receiver's characters or attributes, until it receives a matching [endEditing](#) (page 10) message, upon which it can consolidate changes and notify any observers that it has changed.

- (void)beginEditing

Discussion

You can nest pairs of [beginEditing](#) and [endEditing](#) (page 10) messages.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

CoreRecipes

Quartz Composer WWDC 2005 TextEdit

TextEditPlus

VertexPerformanceTest

Declared In

NSAttributedString.h

deleteCharactersInRange:

Deletes the characters in the given range along with their associated attributes.

- (void)deleteCharactersInRange:(NSRange) *aRange*

Parameters

aRange

A range specifying the characters to delete.

Discussion

Raises an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver's characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [replaceCharactersInRange:withAttributedString:](#) (page 12)

- [replaceCharactersInRange:withString:](#) (page 12)

Declared In

NSAttributedString.h

endEditing

Overridden by subclasses to consolidate changes made since a previous [beginEditing](#) (page 9) message and to notify any observers of the changes.

- (void)endEditing

Discussion

The `NSMutableAttributedString` implementation does nothing. `NSTextStorage`, for example, overrides this method to invoke `fixAttributesInRange:` and to inform its `NSLayoutManager` objects that they need to re-lay the text.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [processEditing](#) (`NSTextStorage`)

Related Sample Code

CoreRecipes

Quartz Composer WWDC 2005 TextEdit

TextEditPlus

VertexPerformanceTest

Declared In

`NSAttributedString.h`

insertAttributedStringAtIndex:

Inserts the characters and attributes of the given attributed string into the receiver at the given index.

```
- (void)insertAttributedString:(NSAttributedString *)attributedString
    atIndex:(NSUInteger)index
```

Parameters

attributedString

The string whose characters and attributes are inserted.

index

The index at which the characters and attributes are inserted.

Discussion

The new characters and attributes begin at the given index and the existing characters and attributes from the index to the end of the receiver are shifted by the length of the attributed string. Raises an `NSRangeException` if *index* lies beyond the end of the receiver's characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [appendAttributedString:](#) (page 8)

+ `attributedStringWithAttachment:` (`NSAttributedString` Additions)

Related Sample Code

CoreRecipes

Declared In

NSAttributedString.h

mutableString

Returns the character contents of the receiver as an NSMutableString object.

- (NSMutableString *)mutableString

Return Value

The mutable string object.

Discussion

The receiver tracks changes to this string and keeps its attribute mappings up to date.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

Quartz Composer WWDC 2005 TextEdit

TextEditPlus

Declared In

NSAttributedString.h

removeAttribute:range:

Removes the named attribute from the characters in the specified range.

- (void)removeAttribute:(NSString *)name range:(NSRange)aRange

Parameters*name*

A string specifying the attribute name to remove.

aRange

The range of characters from which the specified attribute is removed.

DiscussionRaises an NSRangeException if any part of *aRange* lies beyond the end of the receiver's characters.**Availability**

Available in Mac OS X v10.0 and later.

See Also- [addAttribute:value:range:](#) (page 7)- [addAttributes:range:](#) (page 8)**Declared In**

NSAttributedString.h

replaceCharactersInRange:withAttributedString:

Replaces the characters and attributes in a given range with the characters and attributes of the given attributed string.

```
- (void)replaceCharactersInRange:(NSRange)aRange  
    withAttributedString:(NSAttributedString *)attributedString
```

Parameters

aRange

The range of characters and attributes replaced.

attributedString

The attributed string whose characters and attributes replace those in the specified range.

Discussion

Raises an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver's characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [insertAttributedString:atIndex:](#) (page 10)

Declared In

NSAttributedString.h

replaceCharactersInRange:withString:

Replaces the characters in the given range with the characters of the given string.

```
- (void)replaceCharactersInRange:(NSRange)aRange withString:(NSString *)aString
```

Parameters

aRange

A range specifying the characters to replace.

aString

A string specifying the characters to replace those in *aRange*.

Discussion

The new characters inherit the attributes of the first replaced character from *aRange*. Where the length of *aRange* is 0, the new characters inherit the attributes of the character preceding *aRange* if it has any, otherwise of the character following *aRange*.

Raises an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver's characters.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [deleteCharactersInRange:](#) (page 9)

Related Sample Code

iSpend

Quartz Composer WWDC 2005 TextEdit

TextEditPlus

Declared In

NSAttributedString.h

setAttributedString:

Replaces the receiver's entire contents with the characters and attributes of the given attributed string.

```
- (void)setAttributedString:(NSAttributedString *)attributedString
```

Parameters

attributedString

The attributed string whose characters and attributes replace those in the receiver.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [appendAttributedString:](#) (page 8)

Declared In

NSAttributedString.h

setAttributes:range:

Sets the attributes for the characters in the specified range to the specified attributes.

```
- (void)setAttributes:(NSDictionary *)attributes range:(NSRange)aRange
```

Parameters

attributes

A dictionary containing the attributes to set.

aRange

The range of characters whose attributes are set.

Discussion

These new attributes replace any attributes previously associated with the characters in *aRange*. Raises an `NSRangeException` if any part of *aRange* lies beyond the end of the receiver's characters.

To set attributes for a zero-length `NSMutableAttributedString` displayed in a text view, use the `NSTextView` method `setTypingAttributes:.`

Availability

Available in Mac OS X v10.0 and later.

See Also

- [addAttributes:range:](#) (page 8)

- [removeAttribute:range:](#) (page 11)

Declared In

NSAttributedString.h

Constants

An attributed string identifies attributes by name, storing a value under the name in an `NSDictionary` object. You can assign any attribute name/value pair you wish to a range of characters, in addition to the standard attributes described in the “Constants” section of `NSAttributedString` Additions.

Document Revision History

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

Date	Notes
2006-06-28	Fixed a bad link to "Changing an Attributed String."
2006-05-23	First publication of this content as a separate document.

REVISION HISTORY

Document Revision History

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