NSTokenField Class Reference

Cocoa > User Experience

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NSTokenField Class Reference

Inherits from	NSTextField : NSControl : NSView : NSResponder : NSObject
Conforms to	NSUserInterfaceValidations (NSTextField) NSAnimatablePropertyContainer (NSView) NSCoding (NSResponder) NSObject (NSObject)
Framework	/System/Library/Frameworks/AppKit.framework
Availability	Available in Mac OS X v10.4 and later.
Companion guide	Token Field Programming Guide for Cocoa
Declared in	NSTokenField.h

Overview

`NSTokenField` is a subclass of `NSTextField` that provides tokenized editing similar to the address field in the Mail application.

`NSTokenField` uses an `NSTokenFieldCell` to implement much of the control's functionality. `NSTokenField` provides cover methods for most methods of `NSTokenFieldCell`, which invoke the corresponding cell method.

Notes: In Mac OS X v10.4 and earlier, represented objects associated with token fields had to conform to `NSCoding`. Starting with Mac OS X v10.5, they no longer need to.

In Mac OS X v10.4, `NSTokenField` trims whitespace around tokens but it does not trim whitespace in Mac OS X versions 10.5.0 and 10.5.1. In Mac OS X v10.5.2, you get whitespace-trimming behavior by either linking against the v10.4 binary or linking against the v10.5 binary and *not* implementing the `tokenField:representedObjectForEditingString:` (page 12) method. If you do not want the whitespace-trimming behavior, link against the v10.5 binary and implement this method, returning the editing string if you have no represented object.

Tasks

Configuring the Token Style

`- setTokenStyle:` (page 9)
Returns the token style of the receiver.

`- tokenStyle` (page 9)
Returns the receiver's token style.

Configuring the Tokenizing Character Set

`- setTokenizingCharacterSet:` (page 9)
Sets the recevier's tokenizing character set to *`characterSet`*.

`- tokenizingCharacterSet` (page 9)
Returns the receiver's tokenizing character set.

`+ defaultTokenizingCharacterSet` (page 8)
Returns the default tokenizing character set.

Configuring the Completion Delay

`- setCompletionDelay:` (page 8)
Sets the receiver's completion delay.

`- completionDelay` (page 8)
Returns the receiver's completion delay.

`+ defaultCompletionDelay` (page 7)
Returns the default completion delay.

Displaying a Tokenized String

`- tokenField:displayStringForRepresentedObject:` (page 10) *delegate method*
Allows the delegate to provide a string to be displayed as a proxy for the given represented object.

`– tokenField:styleForRepresentedObject:` (page 13) *delegate method*
: Allows the delegate to return the token style for editing the specified represented object.

Editing a Tokenized String

`– tokenField:completionsForSubstring:indexOfToken:indexOfSelectedItem:` (page 10) *delegate method*
: Allows the delegate to provide an array of appropriate completions for the contents of the receiver.

`– tokenField:editingStringForRepresentedObject:` (page 11) *delegate method*
: Allows the delegate to provide a string to be edited as a proxy for a represented object.

`– tokenField:representedObjectForEditingString:` (page 12) *delegate method*
: Allows the delegate to provide a represented object for the given editing string.

`– tokenField:shouldAddObjects:atIndex:` (page 13) *delegate method*
: Allows the delegate to validate the tokens to be added to the receiver at a particular location.

Reading To and Writing From the Pasteboard

`– tokenField:readFromPasteboard:` (page 12) *delegate method*
: Allows the delegate to return an array of objects representing the data read from the specified pasteboard.

`– tokenField:writeRepresentedObjects:toPasteboard:` (page 14) *delegate method*
: Sent so the delegate can write represented objects to the pasteboard corresponding to a given array of display strings.

Providing a Menu

`– tokenField:hasMenuForRepresentedObject:` (page 11) *delegate method*
: Allows the delegate to specify whether the given represented object provides a menu.

`– tokenField:menuForRepresentedObject:` (page 12) *delegate method*
: Allows the delegate to provide a menu for the specified represented object.

Class Methods

defaultCompletionDelay

Returns the default completion delay.

```
+ (NSTimeInterval)defaultCompletionDelay
```

Discussion
The default completion delay is 0.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

defaultTokenizingCharacterSet

Returns the default tokenizing character set.

```
+ (NSCharacterSet *)defaultTokenizingCharacterSet
```

Discussion
The default tokenizing character set is “,”.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

Instance Methods

completionDelay

Returns the receiver’s completion delay.

```
- (NSTimeInterval)completionDelay
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- setCompletionDelay:` (page 8)
`+ defaultCompletionDelay` (page 7)

Declared In
`NSTokenField.h`

setCompletionDelay:

Sets the receiver’s completion delay.

```
- (void)setCompletionDelay:(NSTimeInterval)delay
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- completionDelay` (page 8)

Declared In
`NSTokenField.h`

setTokenizingCharacterSet:

Sets the recevier's tokenizing character set to *characterSet*.

```
- (void)setTokenizingCharacterSet:(NSCharacterSet *)characterSet
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- tokenizingCharacterSet` (page 9)

Declared In
`NSTokenField.h`

setTokenStyle:

Returns the token style of the receiver.

```
- (void)setTokenStyle:(NSTokenStyle)style
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- tokenStyle` (page 9)

Declared In
`NSTokenField.h`

tokenizingCharacterSet

Returns the receiver's tokenizing character set.

```
- (NSCharacterSet *)tokenizingCharacterSet
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- setTokenizingCharacterSet:` (page 9)
`+ defaultTokenizingCharacterSet` (page 8)

Declared In
`NSTokenField.h`

tokenStyle

Returns the receiver's token style.

```
- (NSTokenStyle)tokenStyle
```

Availability
Available in Mac OS X v10.4 and later.

See Also
`- setTokenStyle:` (page 9)

Declared In
`NSTokenField.h`

Delegate Methods

tokenField:completionsForSubstring:indexOfToken:indexOfSelectedItem:

Allows the delegate to provide an array of appropriate completions for the contents of the receiver.

```
- (NSArray *)tokenField:(NSTokenField *)tokenField completionsForSubstring:(NSString
     *)substring indexOfToken:(NSInteger)tokenIndex indexOfSelectedItem:(NSInteger
     *)selectedIndex
```

Parameters

tokenField
The token field where editing is occurring.

substring
The partial string that is to be completed.

tokenIndex
The index of the token being edited.

selectedIndex
Optionally, you can return by-reference an index into the returned array that specifies which of the completions should be initially selected. If none are to be selected, return by reference -1.

Return Value
An array of possible completions.

Discussion
The default behavior of this method provides no completions.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:displayStringForRepresentedObject:

Allows the delegate to provide a string to be displayed as a proxy for the given represented object.

```
- (NSString *)tokenField:(NSTokenField *)tokenField
    displayStringForRepresentedObject:(id)representedObject
```

Parameters

tokenField

The token field.

representedObject

A represented object of the token field.

Return Value

The string to be used as a proxy for `representedObject`. If you return `nil` or do not implement this method, then *representedObject* is displayed as the string.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSTokenField.h`

tokenField:editingStringForRepresentedObject:

Allows the delegate to provide a string to be edited as a proxy for a represented object.

```
- (NSString *)tokenField:(NSTokenField *)tokenField
    editingStringForRepresentedObject:(id)representedObject
```

Discussion

If you return `nil` from this method, the token field is not editable.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSTokenField.h`

tokenField:hasMenuForRepresentedObject:

Allows the delegate to specify whether the given represented object provides a menu.

```
- (BOOL)tokenField:(NSTokenField *)tokenField
    hasMenuForRepresentedObject:(id)representedObject
```

Parameters

tokenField

The token field.

representedObject

A represented object of the token field.

Return Value

`YES` if the represented object has a menu, `NO` otherwise.

Discussion

By default tokens have no menus.

Availability

Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:menuForRepresentedObject:

Allows the delegate to provide a menu for the specified represented object.

```
- (NSMenu *)tokenField:(NSTokenField *)tokenField
    menuForRepresentedObject:(id)representedObject
```

Parameters

tokenField
The token field.

representedObject
A represented object of the token field.

Return Value
The menu associated with the represented object.

Discussion
The returned menu should be autoreleased. By default tokens do not return menus.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:readFromPasteboard:

Allows the delegate to return an array of objects representing the data read from the specified pasteboard.

```
- (NSArray *)tokenField:(NSTokenField *)tokenField readFromPasteboard:(NSPasteboard
     *)pboard
```

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:representedObjectForEditingString:

Allows the delegate to provide a represented object for the given editing string.

```
- (id)tokenField:(NSTokenField *)tokenField
    representedObjectForEditingString:(NSString *)editingString
```

Discussion
If your application uses some object other than an `NSString` for their represented objects, you should return a new, autoreleased instance of that object from this method.

> **Note:** In Mac OS X v10.4, `NSTokenField` trims whitespace around tokens but it does not trim whitespace in Mac OS X versions 10.5.0 and 10.5.1. In Mac OS X v10.5.2, you get whitespace-trimming behavior by either linking against the v10.4 binary or linking against the v10.5 binary and *not* implementing the this method. If you do not want the whitespace-trimming behavior, link against the v10.5 binary and implement this method, returning the editing string if you have no represented object.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:shouldAddObjects:atIndex:

Allows the delegate to validate the tokens to be added to the receiver at a particular location.

```
- (NSArray *)tokenField:(NSTokenField *)tokenField shouldAddObjects:(NSArray *)tokens
     atIndex:(NSUInteger)index
```

Parameters

tokenField
The token field being validated.

tokens
An array of tokens to be inserted in the receiver at `index`.

index
The index of the receiver in which the array of tokens to be validated (`tokens`) will be inserted.

Return Value
The array of tokens to be inserted.

Discussion
The delegate can return the array unchanged or return a modified array of tokens. To reject the add completely, return an empty array. Returning `nil` causes an error.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSTokenField.h`

tokenField:styleForRepresentedObject:

Allows the delegate to return the token style for editing the specified represented object.

```
- (NSTokenStyle)tokenField:(NSTokenField *)tokenField
    styleForRepresentedObject:(id)representedObject
```

Discussion
The delegate should return `NSDefaultTokenStyle`, `NSPlainTextTokenStyle` or `NSRoundedTokenStyle`.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSTokenField.h`

tokenField:writeRepresentedObjects:toPasteboard:

Sent so the delegate can write represented objects to the pasteboard corresponding to a given array of display strings.

```
- (BOOL)tokenField:(NSTokenField *)tokenField writeRepresentedObjects:(NSArray
    *)objects toPasteboard:(NSPasteboard *)pboard
```

Parameters

tokenField

The token field.

objects

An array of represented objects associated with the token field.

pboard

The pasteboard to which to write the represented objects.

Return Value

`YES` if the delegate writes the represented objects to the pasteboard, `NO` otherwise. If `NO`, the token field writes the display strings to the `NSStringPboardType` pasteboard.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSTokenField.h`

Document Revision History

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

Date	Notes
2008-10-15	Made several minor corrections.
2007-03-07	Formatting changes. Revised task headings.
2006-05-23	First publication of this content as a separate document.

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