
NSMutableDictionary Class Reference

Data Management: Data Types & Collections



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Document Revision History 17

NSMutableDictionary Class Reference

Inherits from	NSObject
Conforms to	NSCoding NSCopying NSFastEnumeration NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.5 and later.
Declared in	NSMutableDictionary.h
Companion guides	Garbage Collection Programming Guide Collections Programming Topics

Overview

`NSMutableDictionary` is modeled after `NSSet` but provides different options, in particular to support weak relationships in a garbage-collected environment.

`NSMutableDictionary` can also contain arbitrary pointers and not just objects, although typically you are encouraged to use the C function API for void * pointers. (See “Hash Tables” in *Foundation Functions Reference* for more information) The object-based API (such as `addObject:` (page 8)) will not work for non-object pointers without type-casting.

Tasks

Initialization

- `initWithOptions:capacity:` (page 9)
Returns a hash table initialized with the given attributes.
- `initWithPointerFunctions:capacity:` (page 10)
Returns a hash table initialized with the given functions and capacity.

Convenience Constructors

- + [hashTableWithOptions:](#) (page 7)
Returns a hash table with given pointer functions options.
- + [hashTableWithWeakObjects](#) (page 7)
Returns a new hash table for storing weak references to its contents.

Accessing Content

- [allObjects](#) (page 8)
Returns an array that contains the receiver's members.
- [anyObject](#) (page 8)
Returns one of the objects in the receiver.
- [containsObject:](#) (page 9)
Returns a Boolean value that indicates whether the receiver contains a given object.
- [count](#) (page 9)
Returns the number of elements in the receiver.
- [member:](#) (page 12)
Determines whether a given object is an element in the receiver.
- [objectEnumerator](#) (page 12)
Returns an enumerator object that lets you access each object in the receiver.
- [setRepresentation](#) (page 14)
Returns a set that contains the receiver's members.

Manipulating Membership

- [addObject:](#) (page 8)
Adds a given object to the receiver.
- [removeAllObjects](#) (page 13)
Removes all objects from the receiver.
- [removeObject:](#) (page 13)
Removes a given object from the receiver.

Comparing Hash Tables

- [intersectsHashTable:](#) (page 11)
Returns a Boolean value that indicates whether a given hash table intersects with the receiver.
- [isEqualToHashTable:](#) (page 11)
Returns a Boolean value that indicates whether a given hash table is equal to the receiver.
- [isSubsetOfHashTable:](#) (page 11)
Returns a Boolean value that indicates whether every element in the receiver is also present in another given hash table.

Set Functions

- [intersectHashTable:](#) (page 10)
Returns a Boolean value that indicates whether at least one element in the receiver is also present in another given hash table.
- [minusHashTable:](#) (page 12)
Removes from the receiver each element contained in another given hash table that is present in the receiver.
- [unionHashTable:](#) (page 14)
Adds to the receiver each element contained in another given hash table that is not already a member.

Accessing Pointer Functions

- [pointerFunctions](#) (page 13)
Returns the pointer functions for the receiver.

Class Methods

hashTableWithOptions:

Returns a hash table with given pointer functions options.

```
+ (id)hashTableWithOptions:(NSPointerFunctionsOptions)options
```

Parameters

options

A bit field that specifies the options for the elements in the hash table. For possible values, see “[Hash Table Options](#)” (page 15).

Return Value

A hash table with given pointer functions options.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

hashTableWithWeakObjects

Returns a new hash table for storing weak references to its contents.

```
+ (id)hashTableWithWeakObjects
```

Return Value

A new has table that uses the options [NSHashTableZeroingWeakMemory](#) (page 15) and [NSPointerFunctionsObjectPersonality](#) and has an initial capacity of 0.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

Instance Methods

addObject:

Adds a given object to the receiver.

- (void)addObject:(id)object

Parameters

object

The object to add to the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

allObjects

Returns an array that contains the receiver's members.

- (NSArray *)allObjects

Return Value

An array that contains the receiver's members.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

anyObject

Returns one of the objects in the receiver.

- (id)anyObject

Return Value

One of the objects in the receiver, or *nil* if the receiver contains no objects.

Discussion

The object returned is chosen at the receiver's convenience—the selection is not guaranteed to be random.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

containsObject:

Returns a Boolean value that indicates whether the receiver contains a given object.

- (BOOL)containsObject:(id)*anObject*

Parameters

anObject

The object to test for membership in the receiver.

Return Value

YES if the receiver contains *anObject*, otherwise NO.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

count

Returns the number of elements in the receiver.

- (NSUInteger)count

Return Value

The number of elements in the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

initWithOptions:capacity:

Returns a hash table initialized with the given attributes.

- (id)initWithOptions:(NSPointerFunctionsOptions)*options*
capacity:(NSUInteger)*capacity*

Parameters

options

A bit field that specifies the options for the elements in the hash table. For possible values, see [“Hash Table Options”](#) (page 15).

capacity

The initial number of elements the receiver can hold.

Return Value

A hash table initialized with options specified by *options* and initial capacity of *capacity*.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

initWithPointerFunctions:capacity:

Returns a hash table initialized with the given functions and capacity.

```
- (id)initWithPointerFunctions:(NSPointerFunctions *)functions
    capacity:(NSUInteger)initialCapacity
```

Parameters

functions

The pointer functions for the new hash table.

initialCapacity

The initial capacity of the hash table.

Return Value

A hash table initialized with the given functions and capacity.

Discussion

Hash tables allocate additional memory as needed, so *initialCapacity* simply establishes the object's initial capacity.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

intersectHashTable:

Returns a Boolean value that indicates whether at least one element in the receiver is also present in another given hash table.

```
- (void)intersectHashTable:(NSHashTable *)other
```

Parameters

other

The hash table with which to compare the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

intersectsHashTable:

Returns a Boolean value that indicates whether a given hash table intersects with the receiver.

```
- (BOOL)intersectsHashTable:(NSHashTable *)other
```

Parameters

other

The hash table with which to compare the receiver.

Return Value

YES if *other* intersects with the receiver, otherwise NO.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

isEqualHashTable:

Returns a Boolean value that indicates whether a given hash table is equal to the receiver.

```
- (BOOL)isEqualHashTable:(NSHashTable *)other
```

Parameters

other

The hash table with which to compare the receiver.

Return Value

YES if the contents of *other* are equal to the contents of the receiver, otherwise NO.

Discussion

Two hash tables have equal contents if they each have the same number of members and if each member of one hash table is present in the other.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

isSubsetOfHashTable:

Returns a Boolean value that indicates whether every element in the receiver is also present in another given hash table.

```
- (BOOL)isSubsetOfHashTable:(NSHashTable *)other
```

Parameters

other

The hash table with which to compare the receiver.

Return Value

YES if every element in the receiver is also present in *other*, otherwise NO.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

member:

Determines whether a given object is an element in the receiver.

```
- (id)member:(id)object
```

Parameters

object

The object to test for membership in the receiver.

Return Value

If *object* is a member of the receiver, returns *object*, otherwise returns *nil*.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

minusHashTable:

Removes from the receiver each element contained in another given hash table that is present in the receiver.

```
- (void)minusHashTable:(NSHashTable *)other
```

Parameters

other

The hash table of elements to remove from the receiver.

Discussion

If any element of *other* isn't present in the receiver, this method has no effect on either the receiver or *other*.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

objectEnumerator

Returns an enumerator object that lets you access each object in the receiver.

```
- (NSEnumerator *)objectEnumerator
```

Return Value

An enumerator object that lets you access each object in the receiver.

Discussion

The following code fragment illustrates how you can use this method.

```
NSEnumerator *enumerator = [myHashTable objectEnumerator];
id value;

while ((value = [enumerator nextObject])) {
    /* code that acts on the hash table's values */
}
```

Note that `NSHashTable` also supports the `NSFastEnumeration` protocol.

Availability

Available in Mac OS X v10.5 and later.

Declared In

`NSHashTable.h`

pointerFunctions

Returns the pointer functions for the receiver.

```
- (NSPointerFunctions *)pointerFunctions
```

Return Value

The pointer functions for the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

`NSHashTable.h`

removeAllObjects

Removes all objects from the receiver.

```
- (void)removeAllObjects
```

Availability

Available in Mac OS X v10.5 and later.

Declared In

`NSHashTable.h`

removeObject:

Removes a given object from the receiver.

```
- (void)removeObject:(id)object
```

Parameters*object*

The object to remove from the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

setRepresentation

Returns a set that contains the receiver's members.

- (NSSet *)setRepresentation

Return Value

A set that contains the receiver's members.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

unionHashTable:

Adds to the receiver each element contained in another given hash table that is not already a member.

- (void)unionHashTable:(NSHashTable *)other

Parameters*other*

The hash table of elements to add to the receiver.

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

Constants

NSHashTableOptions

Type to specify a bit-field used to define the behavior of elements in an NSHashTable object.

typedef NSUInteger NSHashTableOptions;

DiscussionFor possible values, see [“Hash Table Options”](#) (page 15).

Availability

Available in Mac OS X v10.5 and later.

Declared In

NSHashTable.h

Hash Table Options

Components in a bit-field to specify the behavior of elements in an NSHashTable object.

```
enum {
    NSHashTableStrongMemory           = 0,
    NSHashTableZeroingWeakMemory     = NSPointerFunctionsZeroingWeakMemory,
    NSHashTableCopyIn                 = NSPointerFunctionsCopyIn,
    NSHashTableObjectPointerPersonality = NSPointerFunctionsObjectPointerPersonality,
};
```

Constants

NSHashTableStrongMemory

Equal to NSPointerFunctionsStrongMemory.

Available in Mac OS X v10.5 and later.

Declared in NSHashTable.h.

NSHashTableZeroingWeakMemory

Equal to NSPointerFunctionsZeroingWeakMemory.

Available in Mac OS X v10.5 and later.

Declared in NSHashTable.h.

NSHashTableCopyIn

Equal to NSPointerFunctionsCopyIn.

Available in Mac OS X v10.5 and later.

Declared in NSHashTable.h.

NSHashTableObjectPointerPersonality

Equal to NSPointerFunctionsObjectPointerPersonality.

Available in Mac OS X v10.5 and later.

Declared in NSHashTable.h.

Declared In

NSHashTable.h

Document Revision History

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

Date	Notes
2010-08-03	Updated introduction.
2007-06-26	New document that describes the Cocoa class used to contain a set of objects, optionally using weak references.

REVISION HISTORY

Document Revision History