NSDateComponents Class Reference

Cocoa > Data Management

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NSDateComponents Class Reference

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Conforms to	NSCoding
	NSCopying
	NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.4 and later.
Companion guide	Date and Time Programming Guide for Cocoa
Declared in	NSCalendar.h
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	Reminders

Overview

`NSDateComponents` encapsulates the components of a date in an extendable, object-oriented manner. It is used to specify a date by providing the temporal components that make up a date and time: hour, minutes, seconds, day, month, year, and so on. It can also be used to specify a duration of time, for example, 5 hours and 16 minutes. An `NSDateComponents` object is not required to define all the component fields. When a new instance of `NSDateComponents` is created the date components are set to `NSUndefinedDateComponent`.

> **Important:** An `NSDateComponents` object is meaningless in itself; you need to know what calendar it is interpreted against, and you need to know whether the values are absolute values of the units, or quantities of the units.

An instance of `NSDateComponents` is not responsible for answering questions about a date beyond the information with which it was initialized. For example, if you initialize one with May 6, 2004, its weekday is `NSUndefinedDateComponent`, not Thursday. To get the correct day of the week, you must create a suitable instance of `NSCalendar`, create an `NSDate` object using `dateFromComponents:` and then use `components:fromDate:` to retrieve the weekday—as illustrated in the following example.

```
NSDateComponents *comps = [[NSDateComponents alloc] init];
[comps setDay:6];
[comps setMonth:5];
[comps setYear:2004];
NSCalendar *gregorian = [[NSCalendar alloc]
    initWithCalendarIdentifier:NSGregorianCalendar];
NSDate *date = [gregorian dateFromComponents:comps];
```

```
[comps release];
NSDateComponents *weekdayComponents =
    [gregorian components:NSWeekdayCalendarUnit fromDate:date];
int weekday = [weekdayComponents weekday];
```

For more details, see Calendars in *Date and Time Programming Guide for Cocoa*.

Tasks

Getting Information About an NSDateComponents Object

- era (page 7)
    Returns the number of era units for the receiver.
- year (page 16)
    Returns the number of year units for the receiver.
- month (page 9)
    Returns the number of month units for the receiver.
- day (page 7)
    Returns the number of day units for the receiver.
- hour (page 8)
    Returns the number of hour units for the receiver.
- minute (page 8)
    Returns the number of minute units for the receiver.
- second (page 9)
    Returns the number of second units for the receiver.
- week (page 14)
    Returns the number of week units for the receiver.
- weekday (page 15)
    Returns the number of weekday units for the receiver.
- weekdayOrdinal (page 15)
    Returns the ordinal number of weekday units for the receiver.

Setting Information for an NSDateComponents Object

- setEra: (page 10)
    Sets the number of era units for the receiver.
- setYear: (page 14)
    Sets the number of year units for the receiver.
- setMonth: (page 11)
    Sets the number of month units for the receiver.
- setDay: (page 9)
    Sets the number of day units for the receiver.

Instance Methods

day

Returns the number of day units for the receiver.

```
- (NSInteger)day
```

Return Value
The number of day units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setDay: (page 9)

Related Sample Code
Birthdays

Declared In
NSCalendar.h

era

Returns the number of era units for the receiver.

```
- (NSInteger)era
```

Return Value
The number of era units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setEra: (page 10)

Declared In
NSCalendar.h

hour

Returns the number of hour units for the receiver.

    – (NSInteger)hour

Return Value
The number of hour units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setHour: (page 10)

Declared In
NSCalendar.h

minute

Returns the number of minute units for the receiver.

    – (NSInteger)minute

Return Value
The number of minute units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setMinute: (page 11)

Declared In
NSCalendar.h

month

Returns the number of month units for the receiver.

- (NSInteger)month

Return Value
The number of month units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setMonth: (page 11)

Declared In
NSCalendar.h

second

Returns the number of second units for the receiver.

- (NSInteger)second

Return Value
The number of second units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– setSecond: (page 12)

Declared In
NSCalendar.h

setDay:

Sets the number of day units for the receiver.

- (void)setDay:(NSInteger)v

Parameters

v

      The number of day units for the receiver.

Discussion

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

Availability

Available in Mac OS X v10.4 and later.

See Also

– day (page 7)

Related Sample Code

Reminders

Declared In

NSCalendar.h

setEra:

Sets the number of era units for the receiver.

```
- (void)setEra:(NSInteger)v
```

Parameters

v

      The number of era units for the receiver.

Discussion

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

Availability

Available in Mac OS X v10.4 and later.

See Also

– era (page 7)

Declared In

NSCalendar.h

setHour:

Sets the number of hour units for the receiver.

```
- (void)setHour:(NSInteger)v
```

Parameters

v

      The number of hour units for the receiver.

Discussion

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

Availability

Available in Mac OS X v10.4 and later.

See Also

– hour (page 8)

Related Sample Code

Reminders

Declared In

NSCalendar.h

setMinute:

Sets the number of minute units for the receiver.

```
- (void)setMinute:(NSInteger)v
```

Parameters

v

   The number of minute units for the receiver.

Discussion

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

Availability

Available in Mac OS X v10.4 and later.

See Also

– minute (page 8)

Related Sample Code

Reminders

Declared In

NSCalendar.h

setMonth:

Sets the number of month units for the receiver.

```
- (void)setMonth:(NSInteger)v
```

Parameters

v

   The number of month units for the receiver.

Discussion
This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
 – month (page 9)

Related Sample Code
Reminders

Declared In
NSCalendar.h

setSecond:

Sets the number of second units for the receiver.

 – (void)setSecond:(NSInteger)*v*

Parameters
v

 The number of second units for the receiver.

Discussion
This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
 – second (page 9)

Related Sample Code
Reminders

Declared In
NSCalendar.h

setWeek:

Sets the number of week units for the receiver.

 – (void)setWeek:(NSInteger)*v*

Parameters
v

 The number of week units for the receiver.

Discussion
This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– week (page 14)

Declared In
NSCalendar.h

setWeekday:

Sets the number of weekday units for the receiver.

    - (void)setWeekday:(NSInteger)v

Parameters
v

     The number of weekday units for the receiver.

Discussion
Weekday units are the numbers 1 through *n*, where *n* is the number of days in the week. For example, in the Gregorian calendar, *n* is 7 and Sunday is represented by 1.

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
– weekday (page 15)

Declared In
NSCalendar.h

setWeekdayOrdinal:

Sets the ordinal number of weekday units for the receiver.

    - (void)setWeekdayOrdinal:(NSInteger)v

Parameters
v

     The ordinal number of weekday units for the receiver.

Discussion
Weekday ordinal units represent the position of the weekday within the next larger calendar unit, such as the month. For example, *2* is the weekday ordinal unit for the *second* Friday of the month.

This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
 – weekdayOrdinal (page 15)

Declared In
NSCalendar.h

setYear:

Sets the number of year units for the receiver.

 – (void)setYear:(NSInteger)*v*

Parameters
v

   The number of year units for the receiver.

Discussion
This value will be interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
 – year (page 16)

Related Sample Code
Reminders

Declared In
NSCalendar.h

week

Returns the number of week units for the receiver.

 – (NSInteger)week

Return Value
The number of week units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
- setWeek: (page 12)

Declared In
NSCalendar.h

weekday

Returns the number of weekday units for the receiver.

```
- (NSInteger)weekday
```

Return Value
The number of weekday units for the receiver.

Discussion
Weekday units are the numbers 1 through *n*, where *n* is the number of days in the week. For example, in the Gregorian calendar, *n* is 7 and Sunday is represented by 1.

This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
- setWeekday: (page 13)

Related Sample Code
Birthdays

Declared In
NSCalendar.h

weekdayOrdinal

Returns the ordinal number of weekday units for the receiver.

```
- (NSInteger)weekdayOrdinal
```

Return Value
The ordinal number of weekday units for the receiver.

Discussion
Weekday ordinal units represent the position of the weekday within the next larger calendar unit, such as the month. For example, *2* is the weekday ordinal unit for the *second* Friday of the month.

This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
- setWeekdayOrdinal: (page 13)

Declared In
NSCalendar.h

year

Returns the number of year units for the receiver.

- (NSInteger)year

Return Value
The number of year units for the receiver.

Discussion
This value is interpreted in the context of the calendar with which it is used—see Calendars in *Date and Time Programming Guide for Cocoa*.

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

See Also
- setYear: (page 14)

Declared In
NSCalendar.h

Constants

NSDateComponents undefined component identifier

This constant specifies that an NSDateComponents component is undefined.

```
enum {
    NSUndefinedDateComponent = 0x7fffffff
};
```

Constants
NSUndefinedDateComponent
>   Specifies that the component is undefined.
>
>   Available in Mac OS X v10.4 and later.
>
>   Declared in NSCalendar.h.

Declared In
NSCalendar.h

Document Revision History

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

Date	Notes
2008-10-15	Clarified meaning of weekday and weekday ordinal units.
2007-10-31	Added links from discussions to the relevant conceptual material.
2006-05-23	First publication of this content as a separate document.

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