CDatum

Erzeugt von Doxygen 1.8.13

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Kapitel 1

Hierarchie-Verzeichnis

1.1 Klassenhierarchie

Die Liste der Ableitungen ist -mit Einschränkungen- alphabetisch sortiert:

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CCalendar360	
CCalendarNormal	. 10
Pate	. 12
PateDiff	. 20
nthInfo	. 32
icialHolidays	. 34
GermanyOfficialHolidays	. 22

2 Hierarchie-Verzeichnis

Kapitel 2

Klassen-Verzeichnis

2.1 Auflistung der Klassen

Hier folgt die Aufzählung aller Klassen, Strukturen, Varianten und Schnittstellen mit einer Kurzbeschreibung:

Calendar	
Calendar360	
CalendarNormal	1
Date	1
DateDiff	2
ermanyOfficialHolidays	2
onthInfo	3
ficialHolidays	

4 Klassen-Verzeichnis

Kapitel 3

Datei-Verzeichnis

3.1 Auflistung der Dateien

Hier folgt die Aufzählung aller Dateien mit einer Kurzbeschreibung:

src/CDate.c	38
src/CDateDiff.c	39
src/Calendar/CCalendar.c	37
src/Calendar/CCalendar360.c	37
src/Calendar/CCalendarNormal.c	38
src/Holidays/GermanyOfficialHolidays.c	39
src/Holidays/OfficialHolidays.c	39
src/Util/MonthInfo.c	40

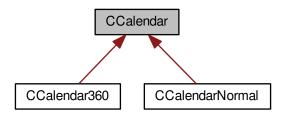
6 Datei-Verzeichnis

Kapitel 4

Klassen-Dokumentation

4.1 CCalendar Klassenreferenz

Klassendiagramm für CCalendar:



Private Methoden

- public bool isLeapYear (int _year)
- abstract public int getNumberOfDaysInMonth (int _month, int _year)

4.1.1 Ausführliche Beschreibung

Base class for calendars that provides methods to fetch information about months in specified years.

Call isLeapYear() to check whether a specified year is a leap year or not Call getNumberOfDaysInMonth() to fetch the number that the specified month has in the specified year

4.1.2 Dokumentation der Elementfunktionen

4.1.2.1 getNumberOfDaysInMonth()

Returns the number of days in a specified month.

Parameter

_month	The month number (0 = January, 11 = December)
_year	The year number to check for leap year

Rückgabe

int The number of days in the month

Implementiert in CCalendarNormal und CCalendar360.

4.1.2.2 isLeapYear()

Returns whether a specified year is a leap year.

Parameter

_year	The year to check
-------	-------------------

Rückgabe

bool True if the year is a leap year, false otherwise

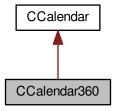
This function was taken from $http://www.keentpoint.com/programming/examples/csharp/ \\ Program-To-Check-Leap-Year$

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

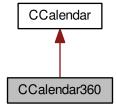
• src/Calendar/CCalendar.c

4.2 CCalendar360 Klassenreferenz

Klassendiagramm für CCalendar360:



Zusammengehörigkeiten von CCalendar360:



Private Methoden

• public override int getNumberOfDaysInMonth (int _month, int _year)

4.2.1 Ausführliche Beschreibung

Represents the bank calendar with 30 days per month and 360 days per year.

4.2.2 Dokumentation der Elementfunktionen

4.2.2.1 getNumberOfDaysInMonth()

Returns the number of days in a specified month.

Parameter

_month	The month number (0 = January, 11 = December)
_year	The year number to check for leap year

Rückgabe

int The number of days in the month

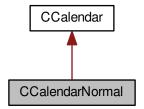
Implementiert CCalendar.

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

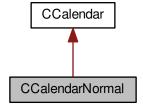
• src/Calendar/CCalendar360.c

4.3 CCalendarNormal Klassenreferenz

Klassendiagramm für CCalendarNormal:



Zusammengehörigkeiten von CCalendarNormal:



Private Methoden

• public override int getNumberOfDaysInMonth (int _month, int _year)

Statische, private Attribute

• static private int [] daysPerMonth = new int[]{31, 28, 31, 30, 31, 30, 31, 30, 31, 30, 31, 30, 31}

4.3.1 Ausführliche Beschreibung

Represents the normal 365 days calendar.

4.3.2 Dokumentation der Elementfunktionen

4.3.2.1 getNumberOfDaysInMonth()

Returns the number of days in a specified month.

Parameter

_month	The month number (0 = January, 11 = December)
_year	The year number to check for leap year

Rückgabe

int The number of days in the month

Implementiert CCalendar.

4.3.3 Dokumentation der Datenelemente

4.3.3.1 daysPerMonth

```
CCalendarNormal::daysPerMonth = new int[]{31, 28, 31, 30, 31, 30, 31, 30, 31, 30, 31, 30, 31} [static], [private]
```

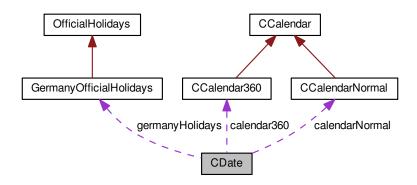
The list of days per month.

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

• src/Calendar/CCalendarNormal.c

4.4 CDate Klassenreferenz

Zusammengehörigkeiten von CDate:



Private Methoden

- public CDate (int _day, int _month, int _year)
- public CDate (CDate _date)
- private void validateDate (int _day, int _month, int _year)
- private int getNumberOfDaysExceededForMonthInCalendar (CCalendar _calendar)
- public int dayNumber ()
- public int monthNumber ()
- public int yearNumber ()
- public int compareTo (CDate _otherDate)
- public void addDays (int _numberOfDays)
- private void addMonths (int _numberOfMonths)
- public CDateDiff diffNormal (CDate _otherDate)
- public CDateDiff diff360 (CDate _otherDate)
- private CDateDiff diff (CDate _otherDate, CCalendar _calendar)
- public int getDayOfWeek ()
- public bool isOfficialHoliday ()
- public string toFormattedString (string _formatString)
- public double toJulianDate ()
- public string toString ()

Private Attribute

- public const int COMPARESTATUS_LOWER_THAN_COMPARISON_DATE = 1
- public const int COMPARESTATUS_EQUAL_TO_COMPARISON_DATE = 0
- public const int COMPARESTATUS_HIGHER_THAN_COMPARISON_DATE = -1
- · private int day
- · private int month
- · private int year

4.4 CDate Klassenreferenz 13

Statische, private Attribute

- static private CCalendarNormal calendarNormal = new CCalendarNormal()
- static private CCalendar360 calendar360 = new CCalendar360()
- static private GermanyOfficialHolidays germanyHolidays = new GermanyOfficialHolidays()

4.4.1 Ausführliche Beschreibung

Stores a date and provides various util methods to fetch information about the date and to compare it to other dates.

4.4.2 Beschreibung der Konstruktoren und Destruktoren

```
4.4.2.1 CDate() [1/2]

public CDate::CDate (
          int _day,
          int _month,
          int _year ) [inline], [private]
```

CDate constructor.

Parameter

_day	The day number
_month	The month number
_year	The year number

Ausnahmebehandlung

Exception The Exception when the specified date is inval

Copy constructor.

Parameter

date	The date to copy
_uaie	The date to copy

4.4.3 Dokumentation der Elementfunktionen

4.4.3.1 addDays()

Adds a number of days to this CDate.

Parameter

numberOfDavs	The number of days to add
	in a manner of days to data

4.4.3.2 addMonths()

Adds a number of months to this CDate.

Parameter

perOfMonths The number of months to add	
-----------------------------------------	--

4.4.3.3 compareTo()

Returns the comparison status to a different CDate.

Parameter

_otherDate	The comparison date

Rückgabe

int The comparison status (one of the COMPARESTATUS_* constants)

4.4 CDate Klassenreferenz 15

4.4.3.4 dayNumber()

```
public int CDate::dayNumber ( ) [inline], [private]
```

Returns the day nubmer of this date.

Rückgabe

int The day number

4.4.3.5 diff()

Calculates and returns the difference to another date in a specified calendar.

Parameter

_otherDate	PrDate The date to compare this date to	
_calendar	The calendar to use for the comparison	

Rückgabe

CDateDiff The difference to the other date

4.4.3.6 diff360()

Returns the difference to another date using the bank calendar.

Parameter

	otherDate	The date to compare this date to
- 1	_	•

Rückgabe

CDateDiff The difference to the other date

4.4.3.7 diffNormal()

Returns the difference to another date using the regular calendar.

Parameter

_otherDate	The date to compare this date to
------------	----------------------------------

Rückgabe

CDateDiff The difference to the other date

4.4.3.8 getDayOfWeek()

```
public int CDate::getDayOfWeek ( ) [inline], [private]
```

Returns the day of the week of this date.

Rückgabe

int The day of the week

4.4.3.9 getNumberOfDaysExceededForMonthInCalendar()

Returns the number of days by which the month of this date in a specified calendar is exceeded by this date's day.

Parameter

Rückgabe

int The number of days by which the month is exceeded

4.4 CDate Klassenreferenz 17

4.4.3.10 isOfficialHoliday()

```
public bool CDate::isOfficialHoliday ( ) [inline], [private]
```

Returns whether this date is an official holiday.

Rückgabe

bool True if this date is an official holiday, false otherwise

4.4.3.11 monthNumber()

```
public int CDate::monthNumber ( ) [inline], [private]
```

Returns the month number of this date.

Rückgabe

int The month number

4.4.3.12 toFormattedString()

Returns this date as a formatted string.

The following format specifiers are available:

- d = day number
- m = month number
- y = year number
- F = full month name
- M = short month name

You may add ":<zeroes>.<zeros>" to define by how many zeros the numbers must be padded (usage is the same as in String.Format output variable specifiers).

Parameter

formatString	The format string
iuiiiaioiiiiu	THE IDITIAL SUITS

Rückgabe

string The formatted date string

4.4.3.13 toJulianDate()

```
public double CDate::toJulianDate ( ) [inline], [private]
```

Returns the julian date that equals this gregorian date. Using the algorithm from here: https://de.←wikipedia.org/wiki/Julianisches_Datum#Umrechnung_Kalenderdatum_%E2%86%92_JD

Rückgabe

double The julian date

4.4.3.14 toString()

```
public string CDate::toString ( ) [inline], [private]
```

Returns this date as a string in the format "DD.MM.YYYY".

Rückgabe

string This date as a string

4.4.3.15 validateDate()

```
private void CDate::validateDate (
    int _day,
    int _month,
    int _year ) [inline], [private]
```

Validates a date.

Parameter

_day	The day number (0 - 30)
_month	The month number (0 = January, 11 = December)
_year	The year number

4.4 CDate Klassenreferenz 19

Ausnahmebehandlung

Exception The Exception when the specified date is invalid

4.4.3.16 yearNumber()

```
public int CDate::yearNumber ( ) [inline], [private]
```

Returns the year number of this date.

Rückgabe

int The year number

4.4.4 Dokumentation der Datenelemente

4.4.4.1 calendar360

```
private CCalendar360 CDate::calendar360 = new CCalendar360() [static], [private]
```

4.4.4.2 calendarNormal

```
private CCalendarNormal CDate::calendarNormal = new CCalendarNormal() [static], [private]
```

4.4.4.3 COMPARESTATUS_EQUAL_TO_COMPARISON_DATE

```
public const int CDate::COMPARESTATUS_EQUAL_TO_COMPARISON_DATE = 0 [private]
```

4.4.4.4 COMPARESTATUS_HIGHER_THAN_COMPARISON_DATE

```
public const int CDate::COMPARESTATUS_HIGHER_THAN_COMPARISON_DATE = -1 [private]
```

4.4.4.5 COMPARESTATUS_LOWER_THAN_COMPARISON_DATE

```
public const int CDate::COMPARESTATUS_LOWER_THAN_COMPARISON_DATE = 1 [private]
```

4.4.4.6 day

```
private int CDate::day [private]
```

4.4.4.7 germanyHolidays

```
private GermanyOfficialHolidays CDate::germanyHolidays = new GermanyOfficialHolidays() [static],
[private]
```

4.4.4.8 month

```
private int CDate::month [private]
```

4.4.4.9 year

```
private int CDate::year [private]
```

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

• src/CDate.c

4.5 CDateDiff Klassenreferenz

Private Methoden

- public CDateDiff (bool _isNegative, int _days, int _months, int _years)
- public string toString ()

Private Attribute

- private bool isNegative
- private int days
- private int months
- · private int years

4.5.1 Ausführliche Beschreibung

Stores the result for a detailed date difference.

4.5.2 Beschreibung der Konstruktoren und Destruktoren

4.5.2.1 CDateDiff()

Constructs a new CDateDiff.

Parameter

_isNegative	True if the difference is negative, false if it is positive
_days	The number of days
_months	The number of months
_years	The number of years

4.5.3 Dokumentation der Elementfunktionen

4.5.3.1 toString()

```
public string CDateDiff::toString ( ) [inline], [private]
```

Generates and returns a string from the information stored in this date difference.

Rückgabe

string The generated string

4.5.4 Dokumentation der Datenelemente

4.5.4.1 days

```
int CDateDiff::days [private]
```

The number of days of the difference

4.5.4.2 isNegative

```
bool CDateDiff::isNegative [private]
```

True if the date difference is negative (-), false if it is positive (+)

4.5.4.3 months

```
int CDateDiff::months [private]
```

The number of months of the difference

4.5.4.4 years

```
int CDateDiff::years [private]
```

The number of years of the difference

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

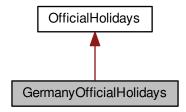
• src/CDateDiff.c

4.6 GermanyOfficialHolidays Klassenreferenz

Klassendiagramm für GermanyOfficialHolidays:



Zusammengehörigkeiten von GermanyOfficialHolidays:



Private Methoden

- public override string getDayOfficialHolidayName (CDate _date)
- public bool isNewYearsDay (CDate date)
- public bool isEpiphany (CDate date)
- public bool isInternationalWomenDay (CDate _date)
- public bool isDayOfWork (CDate _date)
- public bool isPeaceOfAugsburgDay (CDate _date)
- public bool isAssumptionOfMaryDay (CDate _date)
- public bool isGermanUnificationDay (CDate date)
- public bool isReformationDay (CDate _date)
- public bool isAllHallowsDay (CDate _date)
- public bool isFirstChristmasDay (CDate _date)
- public bool isSecondChristmasDay (CDate _date)
- public bool isSylvester (CDate _date)
- public bool isEaster (CDate _date, CDate _easterDate)
- public bool isEasterMonday (CDate _date, CDate _easterDate)
- public bool isGoodFriday (CDate _date, CDate _easterDate)
- public bool isAscensionOfChristDay (CDate _date, CDate _easterDate)
- public bool isWhitsunday (CDate _date, CDate _easterDate)
- public bool isWhitmonday (CDate _date, CDate _easterDate)
- public bool isCorpusChristiDay (CDate _date, CDate _easterDate)
- private CDate calculateEasterDate (int _year)
- public bool isDayOfRepentance (CDate _date)

4.6.1 Ausführliche Beschreibung

Provides all official holidays in germany. Does not differentiate between federal states (e.g. Hessen, Bayern, etc.)

This list was used to determine all official holidays: https://www.ferienwiki.de/feiertage/2019/de

4.6.2 Dokumentation der Elementfunktionen

4.6.2.1 calculateEasterDate()

Returns the date of Easter for a specified year. This was copied from https://de.wikibooks.com/wiki/Algorithmensammlung:_Kalender:_Feiertage.

Parameter

Rückgabe

CDate The date of easter

4.6.2.2 getDayOfficialHolidayName()

```
\label{eq:public_override} \begin{tabular}{ll} public override string GermanyOfficialHolidays::getDayOfficialHolidayName ( & CDate \_date ) [inline], [private], [virtual] \end{tabular}
```

Returns the offical holiday name for a specified date. Will return an empty string if there is no official holiday on that date.

Parameter

_date The date to fetch the official holiday name for

Rückgabe

string The official holiday name

Implementiert OfficialHolidays.

4.6.2.3 isAllHallowsDay()

Returns whether a specified date is all hallows day.

Parameter

Rückgabe

bool True if the date is all hallows day, false otherwise

4.6.2.4 isAscensionOfChristDay()

Returns whether a specified date is ascension of christ day.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is ascension of christ day, false otherwise

4.6.2.5 isAssumptionOfMaryDay()

Returns whether a specified date is assumption of mary day.

Parameter

```
_date The date to check
```

Rückgabe

bool True if the date is assumption of mary day, false otherwise

4.6.2.6 isCorpusChristiDay()

Returns whether a specified date is corpus christi day.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is corpus christi day, false otherwise

4.6.2.7 isDayOfRepentance()

Returns whether a specified date is day of repentance. This method is based on the logic of $https://de. \leftarrow wikibooks.org/wiki/Algorithmensammlung:_Kalender:_Feiertage$

Parameter

_date	The date to check
-------	-------------------

Rückgabe

bool True if the date is day of repentance, false otherwise

4.6.2.8 isDayOfWork()

```
\label{eq:continuous} \begin{tabular}{ll} public bool GermanyOfficialHolidays::isDayOfWork ( & CDate \_date ) [inline], [private] \end{tabular}
```

Returns whether a specified date is day of work.

Parameter

_date The da	ate to check
--------------	--------------

Rückgabe

bool True if the date is day of work, false otherwise

4.6.2.9 isEaster()

Returns whether a specified date is easter sunday.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is easter sunday, false otherwise

4.6.2.10 isEasterMonday()

Returns whether a specified date is easter monday.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is easter monday, false otherwise

4.6.2.11 isEpiphany()

Returns whether a specified date is epiphany day.

Parameter

_date	The date to check

Rückgabe

bool True if the date is epiphany day, false otherwise

4.6.2.12 isFirstChristmasDay()

Returns whether a specified date is first christmas day.

Parameter

```
_date The date to check
```

Rückgabe

bool True if the date is first christmas day, false otherwise

4.6.2.13 isGermanUnificationDay()

Returns whether a specified date is german unification day.

Parameter

```
_date | The date to check
```

Rückgabe

bool True if the date is german unification day, false otherwise

4.6.2.14 isGoodFriday()

Returns whether a specified date is good friday.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is good friday, false otherwise

4.6.2.15 isInternationalWomenDay()

Returns whether a specified date is international women day.

Parameter

date The date to check	_
------------------------	---

Rückgabe

bool True if the date is international women day, false otherwise

4.6.2.16 isNewYearsDay()

Returns whether a specified date is new years day.

Parameter

_date	The date to check

Rückgabe

bool True if the date is new years day, false otherwise

4.6.2.17 isPeaceOfAugsburgDay()

Returns whether a specified date is peace of augsburg day.

Parameter

```
_date The date to check
```

Rückgabe

bool True if the date is peace of augsburg day, false otherwise

4.6.2.18 isReformationDay()

Returns whether a specified date is reformation day.

Parameter

```
_date The date to check
```

Rückgabe

bool True if the date is reformation day, false otherwise

4.6.2.19 isSecondChristmasDay()

Returns whether a specified date is second christmas day.

Parameter

date	The date to check
auto	THE date to effect

Rückgabe

bool True if the date is second christmas day, false otherwise

4.6.2.20 isSylvester()

Returns whether a specified date is sylvester.

Parameter

late The date to check

Rückgabe

bool True if the date is sylvester, false otherwise

4.6.2.21 isWhitmonday()

Returns whether a specified date is whit monday.

Parameter

_date	The date to check
_easterDate	The easter date for the date's year

Rückgabe

bool True if the date is whit monday, false otherwise

4.6.2.22 isWhitsunday()

Returns whether a specified date is whit sunday.

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Parameter

_date	The date to check	
_easterDate	The easter date for the date's year	

Rückgabe

bool True if the date is whit sunday, false otherwise

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

• src/Holidays/GermanyOfficialHolidays.c

4.7 Monthinfo Klassenreferenz

Private Methoden

- public MonthInfo (int _monthNumber)
- public string getFullName ()
- public string getShortName ()

Private Attribute

· private int month

Statische, private Attribute

- static private string [] fullMonthNames
- static private string [] shortMonthNames

4.7.1 Ausführliche Beschreibung

Util class that returns information about a month.

4.7.2 Beschreibung der Konstruktoren und Destruktoren

4.7.2.1 MonthInfo()

Constructs a new MonthInfo.

Parameter

_monthNumber	The month number to provide information for]
--------------	---------------------------------------------	---

4.7.3 Dokumentation der Elementfunktionen

4.7.3.1 getFullName()

```
public string MonthInfo::getFullName ( ) [inline], [private]
```

Returns the full month name for the target month.

Rückgabe

string The full month name

4.7.3.2 getShortName()

```
public string MonthInfo::getShortName ( ) [inline], [private]
```

Returns the short month name for the target month.

Rückgabe

string The short month name

4.7.4 Dokumentation der Datenelemente

4.7.4.1 fullMonthNames

```
MonthInfo::fullMonthNames [static], [private]
```

Initialisierung:

```
= {
    "Januar", "Februar", "März", "April", "Mai", "Juni", "Juli", "August", "September", "Oktober", "
    November", "Dezember"
}
```

The list of full month names.

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4.7.4.2 month

```
int MonthInfo::month [private]
```

The month number for which this MonthInfo will provide information (0 = January, 11 = December)

4.7.4.3 shortMonthNames

```
MonthInfo::shortMonthNames [static], [private]
```

Initialisierung:

```
= {
    "Jan", "Feb", "Mär", "Apr", "Mai", "Jun", "Jul", "Aug", "Sep", "Okt", "Nov", "Dez"
}
```

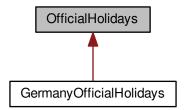
The list of short month names.

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

• src/Util/MonthInfo.c

4.8 OfficialHolidays Klassenreferenz

Klassendiagramm für OfficialHolidays:



Private Methoden

• abstract public string getDayOfficialHolidayName (CDate _date)

4.8.1 Ausführliche Beschreibung

Util class to fetch official holiday names for specified dates.

4.8.2 Dokumentation der Elementfunktionen

4.8.2.1 getDayOfficialHolidayName()

Returns the offical holiday name for a specified date. Will return an empty string if there is no official holiday on that date.

Parameter

_date The date to fetch the official holiday name for

Rückgabe

string The official holiday name

Implementiert in GermanyOfficialHolidays.

Die Dokumentation für diese Klasse wurde erzeugt aufgrund der Datei:

• src/Holidays/OfficialHolidays.c

36 Klassen-Dokumentation

Kapitel 5

Datei-Dokumentation

5.	1	src/Ca	lendar.	(CCa	lendar.	c-Dateire	eferenz
U :		31 0/ Ou	ICHAUI/	Ou	iciidai:	o Dateii v	-1010112

Klassen

class CCalendar

5.1.1 Ausführliche Beschreibung

Version

0.1

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Autor

Yannick Lapp yannick.lapp@cn-consult.eu

5.2 src/Calendar/CCalendar360.c-Dateireferenz

Klassen

• class CCalendar360

38 Datei-Dokumentation

5.2.1 Ausführliche Beschreibung

Version

0.1

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5.3 src/Calendar/CCalendarNormal.c-Dateireferenz

Klassen

class CCalendarNormal

5.3.1 Ausführliche Beschreibung

Version

0.1

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5.4 src/CDate.c-Dateireferenz

Klassen

• class CDate

5.4.1 Ausführliche Beschreibung

Version

0.1

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5.5 src/CDateDiff.c-Dateireferenz

Klassen

class CDateDiff

5.5.1 Ausführliche Beschreibung

Version

0.1

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5.6 src/Holidays/GermanyOfficialHolidays.c-Dateireferenz

Klassen

• class GermanyOfficialHolidays

5.6.1 Ausführliche Beschreibung

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5.7 src/Holidays/OfficialHolidays.c-Dateireferenz

Klassen

· class OfficialHolidays

40 Datei-Dokumentation

5.7.1 Ausführliche Beschreibung

Version

0.1

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5.8 src/Util/MonthInfo.c-Dateireferenz

Klassen

• class MonthInfo

5.8.1 Ausführliche Beschreibung

Version

0.1

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