

Package ‘cstime’

October 14, 2025

Title Date and Time Functions for Public Health Purposes

Version 2025.10.13

Description Provides easy and consistent time conversion for public health purposes. The time conversion functions provided here are between date, ISO week, ISO yearweek, ISO year, calendar month/year, season, season week.

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URL <https://www.csids.no/cstime/>, <https://github.com/csids/cstime>

BugReports <https://github.com/csids/cstime/issues>

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dates_by_isoyearweek *Dates of different days within isoyearweeks*

Description

Dates of different days within isoyearweeks

Usage

dates_by_isoyearweek

Format

isoyear Isoyear.
isoyearweek Isoweek-isoyear.
mon Date of Monday.
tue Date of Tuesday.
wed Date of Wednesday.
thu Date of Thursday.
fri Date of Friday.
sat Date of Saturday.
sun Date of Sunday.
weekdays List of dates from Mon-Fri
weekend List of dates from Sat-Sun
days List of dates from Mon-Sun

Examples

```
# Constructing a vector of dates without removing the Date class
do.call("c", dates_by_isoyearweek[isoyearweek %in% c("2021-01", "2021-02")]$weekdays)
```

date_to_calmonth_c *Date -> calmonth (character)*

Description

Date -> calmonth (character)

Usage

```
date_to_calmonth_c(x = lubridate::today())

## Default S3 method:
date_to_calmonth_c(x)

## S3 method for class 'character'
date_to_calmonth_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_calmonth_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

calmonth ("XX")

Examples

```
date_to_calmonth_c("2021-08-11")
date_to_calmonth_c(lubridate::today())
```

date_to_calmonth_n *Date -> calmonth (numeric)*

Description

Date -> calmonth (numeric)

Usage

```
date_to_calmonth_n(x = lubridate::today())

## Default S3 method:
date_to_calmonth_n(x)

## S3 method for class 'character'
date_to_calmonth_n(x = lubridate::today())

## S3 method for class 'Date'
date_to_calmonth_n(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

calmonth

Examples

```
date_to_calmonth_n("2021-08-11")
date_to_calmonth_n(lubridate::today())
```

date_to_calyearmonth_c

Date -> calyearmonth (character)

Description

Date -> calyearmonth (character)

Usage

```
date_to_calyearmonth_c(x = lubridate::today())

## Default S3 method:
date_to_calyearmonth_c(x)

## S3 method for class 'character'
date_to_calyearmonth_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_calyearmonth_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

calyearmonth ("YYYY-MXX")

Examples

```
date_to_calyearmonth_c("2021-08-11")
date_to_calyearmonth_c(lubridate::today())
```

date_to_calyear_c	<i>Date -> calyear (character)</i>
-------------------	---------------------------------------

Description

Date -> calyear (character)

Usage

```
date_to_calyear_c(x = lubridate::today())

## Default S3 method:
date_to_calyear_c(x)

## S3 method for class 'character'
date_to_calyear_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_calyear_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year in character

Examples

```
date_to_calyear_c("2021-08-11")
date_to_calyear_c(lubridate::today())
```

date_to_calyear_n	<i>Date -> calyear (numeric)</i>
-------------------	-------------------------------------

Description

Date -> calyear (numeric)

Usage

```
date_to_calyear_n(x = lubridate::today())

## Default S3 method:
date_to_calyear_n(x)

## S3 method for class 'character'
date_to_calyear_n(x = lubridate::today())

## S3 method for class 'Date'
date_to_calyear_n(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year in character

Examples

```
date_to_calyear_n("2021-08-11")
date_to_calyear_n(lubridate::today())
```

date_to_isoquarter_c *ISO quarter (character) from Date object*

Description

ISO quarter (character) from Date object

Usage

```
date_to_isoquarter_c(x = lubridate::today())

## Default S3 method:
date_to_isoquarter_c(x)

## S3 method for class 'character'
date_to_isoquarter_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoquarter_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO quarter in character

Examples

```
date_to_isoquarter_c("2021-08-11")
date_to_isoquarter_c(lubridate::today())
```

date_to_isoquarter_n *ISO quarter (numeric) from Date object*

Description

ISO quarter (numeric) from Date object

Usage

```
date_to_isoquarter_n(x = lubridate::today())

## Default S3 method:
date_to_isoquarter_n(x)

## S3 method for class 'character'
date_to_isoquarter_n(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoquarter_n(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO quarter in numeric

Examples

```
date_to_isoquarter_n("2021-08-11")
date_to_isoquarter_n(lubridate::today())
```

date_to_isoweek_c	<i>ISO week (character) from Date object</i>
-------------------	--

Description

ISO week (character) from Date object

Usage

```
date_to_isoweek_c(x = lubridate::today())

## Default S3 method:
date_to_isoweek_c(x)

## S3 method for class 'character'
date_to_isoweek_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoweek_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO week in character

Examples

```
date_to_isoweek_c("2021-08-11")
date_to_isoweek_c(lubridate::today())
```

date_to_isoweek_n	<i>ISO week (numeric) from Date object</i>
-------------------	--

Description

ISO week (numeric) from Date object

Usage

```
date_to_isoweek_n(x = lubridate::today())

## Default S3 method:
date_to_isoweek_n(x)

## S3 method for class 'character'
date_to_isoweek_n(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoweek_n(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO week in numeric

Examples

```
date_to_isoweek_n("2021-08-11")
date_to_isoweek_n(lubridate::today())
```

date_to_isoyearquarter_c

ISO year and quarter (character) from Date object

Description

ISO year and quarter (character) from Date object

Usage

```
date_to_isoyearquarter_c(x = lubridate::today())

## Default S3 method:
date_to_isoyearquarter_c(x)

## S3 method for class 'character'
date_to_isoyearquarter_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoyearquarter_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year and quarter in character

Examples

```
date_to_isoyearquarter_c("2021-08-11")
date_to_isoyearquarter_c(lubridate::today())
```

date_to_isoyearweek_c *ISO year and week (character) from Date object*

Description

ISO year and week (character) from Date object

Usage

```
date_to_isoyearweek_c(x = lubridate::today())

## Default S3 method:
date_to_isoyearweek_c(x)

## S3 method for class 'character'
date_to_isoyearweek_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoyearweek_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year and week in character

Examples

```
date_to_isoyearweek_c("2021-08-11")
date_to_isoyearweek_c(lubridate::today())
```

date_to_isoyear_c	<i>ISO year (character) from Date object</i>
-------------------	--

Description

ISO year (character) from Date object

Usage

```
date_to_isoyear_c(x = lubridate::today())

## Default S3 method:
date_to_isoyear_c(x)

## S3 method for class 'character'
date_to_isoyear_c(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoyear_c(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year in character

Examples

```
date_to_isoyear_c("2021-08-11")
date_to_isoyear_c(lubridate::today())
```

date_to_isoyear_n	<i>ISO year (numeric) from Date object</i>
-------------------	--

Description

ISO year (numeric) from Date object

Usage

```
date_to_isoyear_n(x = lubridate::today())

## Default S3 method:
date_to_isoyear_n(x)

## S3 method for class 'character'
date_to_isoyear_n(x = lubridate::today())

## S3 method for class 'Date'
date_to_isoyear_n(x = lubridate::today())
```

Arguments

x a Date object or string, in the form of 'yyyy-mm-dd'

Value

ISO year in numeric

Examples

```
date_to_isoyear_n("2021-08-11")
date_to_isoyear_n(lubridate::today())
```

date_to_seasonweek_n *Date to season week.*

Description

Date to season week.

Usage

```
date_to_seasonweek_n(x)
```

Arguments

x date

Value

Season week in numeric

Examples

```
date_to_seasonweek_n(c("2021-01-01", "2021-12-01"))
```

date_to_season_c	<i>Date to season.</i>
------------------	------------------------

Description

Date to season.

Usage

```
date_to_season_c(x)
```

Arguments

x	date
---	------

Value

Season, e.g. 2020/2021

Examples

```
date_to_season_c(c("2021-01-01", "2021-12-01"))
```

isoweek_to_seasonweek_n	<i>ISO week to season week (numeric). Season week 1 is natural week 35.</i>
-------------------------	---

Description

ISO week to season week (numeric). Season week 1 is natural week 35.

Usage

```
isoweek_to_seasonweek_n(x)
```

```
## Default S3 method:
```

```
isoweek_to_seasonweek_n(x)
```

```
## S3 method for class 'character'
```

```
isoweek_to_seasonweek_n(x)
```

```
## S3 method for class 'numeric'
```

```
isoweek_to_seasonweek_n(x)
```

Arguments

x ISO week in a year (numeric), between 1 and 53. ISO week 53 is season week 18.5

Value

Season week in numeric

Examples

```
isoweeek_to_seasonweek_n(31)
```

```
isoyearweek_to_isoquarter_c
      ISO yearweek to quarter (character)
```

Description

This function breaks the string connected with '-' into year/quarter

Usage

```
isoyearweek_to_isoquarter_c(x)

## Default S3 method:
isoyearweek_to_isoquarter_c(x)

## S3 method for class 'character'
isoyearweek_to_isoquarter_c(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO quarter in character

Examples

```
isoyearweek_to_isoquarter_c('2020-19')
```

```
isoyearweek_to_isoquarter_n
      ISO yearweek to quarter (numeric)
```

Description

This function breaks the string connected with '-' into year/quarter

Usage

```
isoyearweek_to_isoquarter_n(x)

## Default S3 method:
isoyearweek_to_isoquarter_n(x)

## S3 method for class 'character'
isoyearweek_to_isoquarter_n(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO quarter in numeric

Examples

```
isoyearweek_to_isoquarter_n('2020-19')
```

```
isoyearweek_to_isoweek_c
      ISO yearweek to week (character)
```

Description

This function breaks the string connected with '-' into year/week

Usage

```
isoyearweek_to_isoweek_c(x)

## Default S3 method:
isoyearweek_to_isoweek_c(x)

## S3 method for class 'character'
isoyearweek_to_isoweek_c(x)
```


Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO week in character

Examples

```
isoyearweek_to_isoweek_c('2020-19')
```

isoyearweek_to_isoweek_n

ISO yearweek to week (numeric)

Description

This function breaks the string connected with '-' into year/week

Usage

```
isoyearweek_to_isoweek_n(x)
```

```
## Default S3 method:
```

```
isoyearweek_to_isoweek_n(x)
```

```
## S3 method for class 'character'
```

```
isoyearweek_to_isoweek_n(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO week in numeric

Examples

```
isoyearweek_to_isoweek_n('2020-19')
```

```
isoyearweek_to_isoyearquarter_c
      ISO yearweek to ISO yearquarter (character)
```

Description

ISO yearweek to ISO yearquarter (character)

Usage

```
isoyearweek_to_isoyearquarter_c(x)

## Default S3 method:
isoyearweek_to_isoyearquarter_c(x)

## S3 method for class 'character'
isoyearweek_to_isoyearquarter_c(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO yearquarter in character

Examples

```
isoyearweek_to_isoyearquarter_c('2020-19')
```

```
isoyearweek_to_isoyear_c
      ISO yearweek to year (character)
```

Description

This function breaks the string connected with '-' into year/week

Usage

```
isoyearweek_to_isoyear_c(x)

## Default S3 method:
isoyearweek_to_isoyear_c(x)

## S3 method for class 'character'
isoyearweek_to_isoyear_c(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO year in character

Examples

```
isoyearweek_to_isoyear_c('2020-10')
```

isoyearweek_to_isoyear_n

ISO yearweek to year (numeric)

Description

This function breaks the string connected with '-' into year/week

Usage

```
isoyearweek_to_isoyear_n(x)
```

```
## Default S3 method:
```

```
isoyearweek_to_isoyear_n(x)
```

```
## S3 method for class 'character'
```

```
isoyearweek_to_isoyear_n(x)
```

Arguments

x Year-week, e.g. "2020-19" for 19th week in 2020

Value

ISO year in numeric

Examples

```
isoyearweek_to_isoyear_n('2020-10')
```

```
isoyearweek_to_last_date
      Last date in ISO yearweek
```

Description

Returns the Sunday in the isoyearweek

Usage

```
isoyearweek_to_last_date(x)

## Default S3 method:
isoyearweek_to_last_date(x)

## S3 method for class 'character'
isoyearweek_to_last_date(x)
```

Arguments

x ISO yearweek, e.g. "2020-19" for 19th week in 2020

Value

Date of Sunday of that isoyearweek

Examples

```
isoyearweek_to_last_date(c("2019-19", "2020-01"))
```

```
isoyearweek_to_seasonweek_n
      ISO yearweek to season week (numeric). Season week 1 is ISO week 35.
```

Description

ISO yearweek to season week (numeric). Season week 1 is ISO week 35.

Usage

```
isoyearweek_to_seasonweek_n(x)
```

Arguments

x ISO yearweek

Value

Season week in numeric

Examples

```
isoyearweek_to_seasonweek_n(c("2021-01"))
```

isoyearweek_to_season_c

ISO yearweek to season.

Description

ISO yearweek to season.

Usage

```
isoyearweek_to_season_c(x)
```

```
## Default S3 method:
```

```
isoyearweek_to_season_c(x)
```

```
## S3 method for class 'character'
```

```
isoyearweek_to_season_c(x)
```

Arguments

x isoyearweek, connected with '-'

Value

Season, e.g. 2020/2021

Examples

```
isoyearweek_to_season_c(c("2021-01", "2021-50"))
```

isoyear_to_last_date *Last Sunday in ISO year*

Description

Returns the last Sunday in the isoyear

Usage

```
isoyear_to_last_date(x)

## Default S3 method:
isoyear_to_last_date(x)

## S3 method for class 'character'
isoyear_to_last_date(x)

## S3 method for class 'numeric'
isoyear_to_last_date(x)
```

Arguments

x ISO year, e.g. 2020

Value

Date of the Sunday, for the last week in the isoyear

Examples

```
isoyear_to_last_date(c(2019, 2019, 2020, 2021))
```

isoyear_to_last_isoweek_n
 Last ISO week (numeric) in ISO year

Description

Returns the last week in the isoyear

Usage

```
isoyear_to_last_isoweek_n(x)

## Default S3 method:
isoyear_to_last_isoweek_n(x)

## S3 method for class 'character'
isoyear_to_last_isoweek_n(x)

## S3 method for class 'numeric'
isoyear_to_last_isoweek_n(x)
```

Arguments

x ISO year, e.g. 2020

Value

ISO week in numeric

Examples

```
isoyear_to_last_isoweek_n(c(2019, 2019, 2020, 2021))
```

```
isoyear_to_last_isoyearweek_c
```

Last ISO yearweek (character) in ISO year

Description

Returns the last isoyearweek in the isoyear

Usage

```
isoyear_to_last_isoyearweek_c(x)

## Default S3 method:
isoyear_to_last_isoyearweek_c(x)

## S3 method for class 'character'
isoyear_to_last_isoyearweek_c(x)

## S3 method for class 'numeric'
isoyear_to_last_isoyearweek_c(x)
```

Arguments

x ISO year, e.g. 2020

Value

ISO year-week in character, of the last ISO year

Examples

```
isoyear_to_last_isoyearweek_c(c(2019, 2019, 2020, 2021))
```

keep_sundays	<i>keep_sundays</i>
--------------	---------------------

Description

keep_sundays

Usage

```
keep_sundays(dates, format = "Uke isoweek_c-1/isoweek_c", keep_delete = TRUE)
```

Arguments

dates	dates (later)
format	format (later)
keep_delete	keep_delete (later)

Value

Label: delete or not

keep_sundays_and_latest_date	<i>keep_sundays_and_latest_date</i>
------------------------------	-------------------------------------

Description

keep_sundays_and_latest_date

Usage

```
keep_sundays_and_latest_date(  
  dates,  
  format = "Uke isoweek_c-1/isoweek_c",  
  keep_delete = TRUE  
)
```


Arguments

dates	dates (later)
format	format (later)
keep_delete	keep_delete (later)

Value

Date with level: delete or not

keep_sundays_and_latest_date_internal
<i>keep_sundays_and_latest_date_internal</i>

Description

keep_sundays_and_latest_date_internal

Usage

```
keep_sundays_and_latest_date_internal(  
  dates,  
  format = "Uke isoweek_c-1/isoweek_c",  
  keep_delete = TRUE,  
  keep_latest_date = TRUE  
)
```

Arguments

dates	dates (later)
format	format (later)
keep_delete	keep_delet (later)
keep_latest_date	keep_latest_date (later)

nor_workdays_by_date *Norwegian workdays and holidays by date*

Description

Norwegian workdays and holidays by date

Usage

nor_workdays_by_date

Format

date Date.

day_of_week Integer. 1 = Monday, 7 = Sunday

mon_to_fri Integer. 1 between Monday and Friday, 0 between Saturday and Sunday

sat_to_sun Integer. 1 between Saturday and Sunday, 0 between Monday and Friday

public_holiday Integer. 1 if public holiday (helligdag), 0 if not public holiday

freeday Integer. 1 if public holiday (helligdag) or sat_to_sun==1, 0 otherwise

workday Integer. 1 if freeday==0, 0 if freeday==1

nor_workdays_by_isoyearweek
 Norwegian workdays and holidays by isoyearweek

Description

Norwegian workdays and holidays by isoyearweek

Usage

nor_workdays_by_isoyearweek

Format

isoyearweek YYYY-WW

public_holiday The proportion of the days within the isoyearweek that are public holidays

freeday The proportion of the days within the isoyearweek that are either public holidays or Saturday/Sunday

workday 1 minus freeday

now_c	<i>Current time as character</i>
-------	----------------------------------

Description

Current time as character

Usage

```
now_c(format = "%Y-%m-%d %H:%M:%S")
```

Arguments

format	Defaults to %Y-%m-%d %H:%M:%S
--------	-------------------------------

seasonweek_to_isoweek_c	<i>Season week to ISO week (character). Season week 1 is ISO week 35.</i>
-------------------------	---

Description

Season week to ISO week (character). Season week 1 is ISO week 35.

Usage

```
seasonweek_to_isoweek_c(x)

## Default S3 method:
seasonweek_to_isoweek_c(x)

## S3 method for class 'numeric'
seasonweek_to_isoweek_c(x)
```

Arguments

x	Season week in a year (numeric), between 1 and 52
---	---

Value

ISO week in character

Examples

```
seasonweek_to_isoweek_c(31)
```

```
seasonweek_to_isoweek_n
```

Season week to ISO week (numeric). Season week 1 is ISO week 35.

Description

Season week to ISO week (numeric). Season week 1 is ISO week 35.

Usage

```
seasonweek_to_isoweek_n(x)
```

```
## Default S3 method:
```

```
seasonweek_to_isoweek_n(x)
```

```
## S3 method for class 'numeric'
```

```
seasonweek_to_isoweek_n(x)
```

Arguments

x Season week in a year, between 1 and 52

Value

ISO week in numeric

Examples

```
seasonweek_to_isoweek_n(31)
```

```
season_to_last_date      Last date in season
```

Description

Returns the last Sunday in the season

Usage

```
season_to_last_date(x)
```

```
## Default S3 method:
```

```
season_to_last_date(x)
```

```
## S3 method for class 'character'
```

```
season_to_last_date(x)
```

season_to_last_date

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Arguments

x Season, e.g. "2019/2020"

Value

Date of last Sunday of that season

Examples

```
isoyearweek_to_last_date(c("2019-19", "2020-01"))
```

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