

Package ‘cstime’

December 5, 2022

Title Date and Time Functions for Public Health Purposes

Version 2022.11.22

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>

Encoding UTF-8

LazyData true

LazyDataCompression xz

RoxygenNote 7.2.1

Depends R (>= 3.5.0)

Imports data.table, dplyr, magrittr, purrr, stringr

Suggests rmarkdown, ggplot2, knitr, testthat (>= 3.0.0), readxl, glue, lubridate

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

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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())
```

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())
```

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())
```

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 *Date -> calyear (character)*

Description

Date -> calyear (character)

Usage

```
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 *Date -> calyear (numeric)*

Description

Date -> calyear (numeric)

Usage

```
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_isoweek_c *ISO week (character) from Date object*

Description

ISO week (character) from Date object

Usage

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

date_to_isoweek_n *ISO week (numeric) from Date object*

Description

ISO week (numeric) from Date object

Usage

```
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_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())
```

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 *ISO year (character) from Date object*

Description

ISO year (character) from Date object

Usage

```
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 *ISO year (numeric) from Date object*

Description

ISO year (numeric) from Date object

Usage

```
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 30.</i>
-------------------------	---

Description

ISO week to season week (numeric). Season week 1 is natural week 30.

Usage

```
isoweek_to_seasonweek_n(isoweek)
```

Arguments

isoweek	ISO week in a year (numeric), between 1 and 53. ISO week 53 is season week 23.5
---------	---

Value

Season week in numeric

Examples

```
isoweek_to_seasonweek_n(31)
```

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(yrwk)
```

Arguments

yrwk 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(yrwk)
```

Arguments

yrwk 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_isoyear_c
ISO yearweek to year (character)

Description

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

Usage

```
isoyearweek_to_isoyear_c(yrwk)
```

Arguments

yrwk 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(yrwk)
```

Arguments

yrwk 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)
```

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 natural week 30.

Description

ISO yearweek to season week (numeric). Season week 1 is natural week 30.

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)

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)

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)

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)

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>
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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>
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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
    keep_sundays_and_latest_date_internal
```

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

seasonweek_to_isoweek_c

Season week to ISO week (character). Season week 1 is ISO week 30.

Description

Season week to ISO week (character). Season week 1 is ISO week 30.

Usage

seasonweek_to_isoweek_c(seasonweek)

Arguments

seasonweek 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 30.

Description

Season week to ISO week (numeric). Season week 1 is ISO week 30.

Usage

```
seasonweek_to_isoweek_n(seasonweek)
```

Arguments

seasonweek Season week in a year, between 1 and 52

Value

ISO week in numeric

Examples

```
seasonweek_to_isoweek_n(31)
```

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