

Package ‘clidatajp’

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Title Data from Japan Meteorological Agency

Version 0.5.2

Description Includes climate data from Japan Meteorological Agency ('JMA') <<https://www.jma.go.jp/jma/indexe.html>>. Can download climate data from 'JMA'.

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Encoding UTF-8

RoxygenNote 7.2.3

Depends R (>= 3.5.0)

URL <https://github.com/matutosi/clidatajp>
<https://github.com/matutosi/clidatajp/tree/develop> (devel)

LazyData true

Imports curl, dplyr, httr, magrittr, rlang, rvest, stringi, stringr, tibble, tidyr, utils

Suggests ggplot2, knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

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as_numeric_without_warnings

Wrapper function to convert into numeric without warnings

Description

Wrapper function to convert into numeric without warnings

Usage

```
as_numeric_without_warnings(x)
```

Arguments

x A string.

Value

A numeric or NA.

choose_with_menu *Choose data with menu.*

Description

Choose data with menu.

Usage

```
choose_with_menu(df, filter_cols, extract = NULL)
```

Arguments

df A dataframe
filter_cols A string or string vector
extract A string

Value

If extract is NULL, return a dataframe, else return a vector.

Examples

```
if(interactive()){  
  data(climate_world)  
  climate_world <-  
    climate_world %>%  
    dplyr::mutate_all(stringi::stri_unescape_unicode)  
  
  choose_with_menu(climate_world, filter_cols = "continent")  
  4 # input  
  
  choose_with_menu(climate_world, filter_cols = c("continent", "country", "station"))  
  4 # input  
  3 # input  
  2 # input  
}
```

clean_station

Clean up station information

Description

Helper function for download_climate().

Usage

```
clean_station(station)
```

Arguments

station A String of station information.

Value

A tibble including station information.

Examples

```

data(station_links)
station_links %>%
  head(1) %>%
  `$( "station")` %>%
  stringi::stri_unescape_unicode() %>%
  clean_station()

```

climate_jp

Climate data in Japan

Description

Climate data downloaded from Japan Meteorological Agency web pages. URLs of each station are listed in `data(station_links)`. <https://www.data.jma.go.jp/gmd/cpd/monitor/nrmlist/>

Usage

```
climate_jp
```

```
japan_climate
```

Format

A data frame with 3768 (157 stations * 12 months * 2 periods) rows and 14 variable:

no Station no

month Month

period Period of observations

temperature Mean temperature

precipitation Mean precipitation

snowfall Mean snowfall

insolation Mean insolation

station Station name. To avoid duplication, including country name after station name. Can split by "_". Escaped by `stringi::stri_escape_unicode()`.

country Country name. Escaped by `stringi::stri_escape_unicode()`.

latitude Latitude. (degree)

NS North or South.

longitude Longitude. (degree)

WE West or East.

altitude Altitude (m)

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 3768 rows and 14 columns.

Examples

```
library(magrittr)
library(stringi)
library(dplyr)
data(japan_climate)
japan_climate %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode)
```

climate_world

Climate data in the world

Description

Climate data downloaded from Japan Meteorological Agency web pages. URLs of each station are listed in `data(station_links)`. <https://www.data.jma.go.jp/gmd/cpd/monitor/nrmlist/>

Usage

```
climate_world
```

```
world_climate
```

Format

A data frame with 41328 (3444 stations * 12 months) rows and 12 variable:

no Station no

continent Continent. Escaped by `stringi::stri_escape_unicode()`.

country Country name. Escaped by `stringi::stri_escape_unicode()`.

station Station name. To avoid duplication, including country name after station name. Can split by "_". Escaped by `stringi::stri_escape_unicode()`.

month Month

temperature Mean temperature

precipitation Mean precipitation

latitude Latitude. (degree)

NS North or South.

longitude Longitude. (degree)

WE West or East.

altitude Altitude (m)

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 41328 rows and 12 columns.

Examples

```
library(magrittr)
library(stringi)
library(dplyr)
data(world_climate)
world_climate %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode)
```

download_climate	<i>Download climate data of the world</i>
------------------	---

Description

For polite scraping, 5 sec interval is set in `download_climate()`, it takes over 5 hours to get climate data of all stations. Please use existing links by "data(climate_world)", if you do not need to renew climate data. You can see web page as below. <https://www.data.jma.go.jp/gmd/cpd/monitor/nrmlist/>

Usage

```
download_climate(url)
```

Arguments

`url` A String to specify target html.

Value

A tibble including climate and station information, or NULL when failed.

Examples

```
# If you want all climate data, remove head().
# The codes take > 5 sec because of poliste scraping.

library(magrittr)
library(stringi)
library(dplyr)
data(station_links)
station_links <-
  station_links %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode) %>%
  head(3) %T>%
  {
    continent <<- `.$`(., "continent")
    no        <<- `.$`(., "no")
  } %>%
  `.$`("url")

climate <- list()
```

```

for(i in seq_along(station_links)){
  print(stringr::str_c(i, " / ", length(station_links)))
  climate[[i]] <- download_climate(station_links[i])
}
# run only when download_climate() succeeded
if(sum(is.null(climate[[1]]),
       is.null(climate[[2]]),
       is.null(climate[[3]])) == 0){
  month_per_year <- 12
  climate_world <-
  dplyr::bind_rows(climate) %>%
  dplyr::bind_cols(
    tibble::tibble(continent = rep(continent, month_per_year))) %>%
  dplyr::bind_cols(
    tibble::tibble(no = rep(no, month_per_year))) %>%
  dplyr::relocate(no, continent, country, station)
  climate_world
}

```

download_links

Download links for areas, countries and stations

Description

For polite scraping, 5 sec interval is set in `download_links()`, it takes about 15 minutes to get all station links. Please use existing links by "data(station_links)", if you do not need to renew links. You can see web page as below. <https://www.data.jma.go.jp/gmd/cpd/monitor/nrmlist/>

Usage

```

download_area_links(
  url = "https://www.data.jma.go.jp/gmd/cpd/monitor/nrmlist/"
)

download_links(url)

```

Arguments

`url` A String to specify target html.

Value

A string vector of url links, or NULL when failed.

Examples

```

# If you want links for all countries and all stations, remove head().
# The codes take over 5 sec because of poliste scraping.

library(magrittr)
library(stringi)
library(dplyr)
library(tibble)
area_links <- download_area_links()
station_links <- NULL
continent <- NULL
continents <-
  c("\u30a2\u30d5\u30ea\u30ab",
    "\u30a2\u30b8\u30a2",
    "\u5357\u30a2\u30e1\u30ea\u30ab",
    "\u5317\u4e2d\u30a2\u30e1\u30ea\u30ab",
    "\u30aa\u30bb\u30a2\u30cb\u30a2",
    "\u30e8\u30fc\u30ed\u30c3\u30d1")
area_links <- head(area_links, 1) # for test
for(i in seq_along(area_links)){
  print(stringr::str_c("area: ", i, " / ", length(area_links)))
  country_links <- download_links(area_links[i])
  country_links <- head(country_links, 1) # for test
  for(j in seq_along(country_links)){
    print(stringr::str_c("  country: ", j, " / ", length(country_links)))
    links <- download_links(country_links[j])
    station_links <- c(station_links, links)
    continent <- c(continent, rep(continents[i], length(links)))
  }
}
station_links <- tibble::tibble(url = station_links, continent = continent)
station_links

```

gracefully_fail

Graceful fail

Description

Graceful fail

Usage

gracefully_fail(remote_file)

Arguments

remote_file A string of remote file.

Value

An XML document when succeeded, or invisible NULL when failed.

References

<https://gist.github.com/kvasilopoulos/47f24348ed75cdb6365312b17f4b914c>

head_3	<i>Wrapper function to head 3 items</i>
--------	---

Description

Wrapper function to head 3 items

Usage

```
head_3(x)
```

Arguments

x An object.

Value

An object like x with length 3.

sleep	<i>Wrapper function to sleep</i>
-------	----------------------------------

Description

Wrapper function to sleep

Usage

```
sleep(sec = 5)
```

Arguments

sec A numeric to sleep (sec).

Value

No return value, called for side effects.

station_jp

Climate stations in Japan

Description

Climate stations in Japan

Usage

```
station_jp
```

Format

A data frame with 3444 rows and 4 variable:

region Rejon. Escaped by `stringi::stri_escape_unicode()`.

pref Prefecture. Escaped by `stringi::stri_escape_unicode()`

no Station no.

station Station name. To avoid duplication, including country name after station name. Can split by "_". Escaped by `stringi::stri_escape_unicode()`.

altitude Altitude. (m)

latitude Latitude. (degree)

longitude Longitude. (degree)

NS North or South.

WE West or East.

yomi Pronunciation in Japanese. Escaped by `stringi::stri_escape_unicode()`

city City name. Escaped by `stringi::stri_escape_unicode()`.

Examples

```
library(magrittr)
library(stringi)
library(dplyr)
data(station_jp)
station_jp %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode)
```

station_links	<i>Station name and its URL</i>
---------------	---------------------------------

Description

Station name and its URL

Usage

```
station_links
```

Format

A data frame with 3444 rows and 4 variable:

no Station no

station Station information including no, month, temperature, precipitation, station, country, latitude, NS, longitude, WE, altitude. The information is NOT cleaned Row information downloaded from each URL. Escaped by `stringi::stri_escape_unicode()`.

url URL of station.

continent Continent. Escaped by `stringi::stri_escape_unicode()`.

Examples

```
library(magrittr)
library(stringi)
library(dplyr)
data(station_links)
station_links %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode)
```

station_world	<i>Climate stations of the world</i>
---------------	--------------------------------------

Description

Climate stations of the world

Usage

```
station_world
```

Format

A data frame with 3444 rows and 9 variable:

no Station no

station Station name. To avoid duplication, including country name after station name. Can split by "_". Escaped by `stringi::stri_escape_unicode()`.

continent Continent. Escaped by `stringi::stri_escape_unicode()`.

country Country name. Escaped by `stringi::stri_escape_unicode()`.

altitude Altitude (m)

latitude Latitude (degree)

NS North or South.

longitude Longitude (degree)

WE West or East

Examples

```
library(magrittr)
library(stringi)
library(dplyr)
data(station_world)
station_world %>%
  dplyr::mutate_all(stringi::stri_unescape_unicode)
```

 wi

Calculate warm index and cold index

Description

Calculate warm index and cold index

Usage

`wi(x)`

`ci(x)`

Arguments

`x` A numeric vector

Value

A string vector of url links.

References

Kira, T. 1945. A new classification of climate in eastern Asia as the basis for agricultural geography, Hort. Inst. Kyoto Univ., Kyoto. (in Japanese) Warmth Index (WI) and Cold Index (CI) was proposed by Kira (1945), which is known closely related to the distribution of vegetation. Indices can be calculated by following equations. $wi = \sum (T_i - 5)$, where wi is Warm index, T_i (celsius) is mean temperature of each month in a year when $T_i > 5$. Indices can be calculated by following equations. $wi = -\sum (T_i - 5)$, where wi is Cold index, when $T_i < 5$.

Examples

```
temp <- c(-7.8, -7.2, -2.4, 5.2, 11.7, 16.5, 20.5, 21.1, 15.6, 8.8, 2.0, -4.1)
wi(temp)
ci(temp)
wi <- sum(c(0, 0, 0, 0.2, 6.7, 11.5, 15.5, 16.1, 10.6, 3.8, 0, 0))
ci <- sum(c(12.8, 12.2, 7.4, 0, 0, 0, 0, 0, 0, 0, 3.0, 9.1))
```

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