Package ‘clidatajp’

March 5, 2023

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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Language en-US

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R topics documented:

`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 *Download climate data of the world*

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() successed
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 sations, 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 successed, or invisible NULL when failed.`

References

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

---

`head_3` *Wrapper function to head 3 items*

Description

Wrapper function to head 3 items

Usage

```
head_3(x)
```

Arguments

`x`	An object.

Value

An object like x with length 3.

`sleep` *Wrapper function to sleep*

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` *Station name and its URL*

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` *Climate stations of the world*

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. K,yoto 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 are calculated by following equations. wi = sum (Ti - 5), where wi is Warm index, Ti (celsius) is mean temprature of each month in a year when Ti > 5. Indices can are calculated by following equations. wi = -sum (Ti - 5), where wi is Cold index, when Ti < 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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