Package 'NipponMap'

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Version 0.2

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Title Japanese Map Data and Functions

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Imports sf, tibble

Suggests RColorBrewer, foreign

Enhances kokudosuuchi, estatapi, jpndistrict, jpmesh

Description Digital map data of Japan for choropleth mapping, including a circle cartogram.

License GPL (>= 2)

NeedsCompilation no

Type Package

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Description

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Details

The DESCRIPTION file:

Package:	NipponMap
Version:	0.2
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Title:	Japanese Map Data and Functions
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Author:	Susumu Tanimura [aut, cre]
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```

The package provides digital map data and functions of Japan for very simple choropleth mapping in prefecture level. The cartographic function in **Nippon** package was moved to **NipponMap** package. If a user needs more complex digital map data or in municipal level, such data is available in other package (e.g., **jpndistrict** and **divagis**).

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`JapanPrefCartogram` *A simple circle cartogram of Japan*

Description

Draw a circle cartogram of Japan in the prefecture level

Usage

```
JapanPrefCartogram(col = NULL, axes = FALSE, xlab = "", ylab = "", xlim = NULL,
                                ylim = NULL, main = NULL, ...)
```

Arguments

col	A character vector. RGB or named colors in order of JISCODE to fill a polygon of 47 prefectures.
axes	logical. If TRUE, axes are drawn. The default value is FALSE.
xlab	A title for the x axis. The default value is NULL.
ylab	A title for the y axis. The default value is NULL.
xlim	The x-range to be displayed. The default value is NULL.
ylim	The y-range to be displayed. The default value is NULL.
main	An overall title for the plot
...	any other options passed to control circles.

Details

The function JapanPrefCartogram draws a simple circle cartogram of Japan in prefecture level. The size of circles represents population in 2015 in each prefecture. Currently, the size is fixed. Users can control only colors and some other graphic parameters. The order of colors must match to the JIS-code order of prefectures in Japan.

Population set was obtained from 2015 Population Census of Japan.

Value

A data.frame. The coordinates of a label point in each prefecture.

Note

The author would like to express the deepest appreciation to Prof. Luc Anselin, the developer of GeoDa, the output of which was used for calculation of the coordinates of this cartogram.

Author(s)

Susumu Tanimura <aruminat@gmail.com>

Examples

```
JapanPrefCartogram()

op <- palette(rainbow(47, end = 0.9))
xy <- JapanPrefCartogram(col = 1:47, fg = gray(.8))
lb <- character(47)
lb[13] <- "Tokyo"
text(xy, lb)
palette(op)
```

JapanPrefMap *A simple choropleth map of Japan*

Description

Draw a very simple choropleth map of Japan with prefecture boundaries

Usage

```
JapanPrefMap(col = NULL, inset = TRUE, ...)
```

Arguments

col	A character vector. RGB or named colors in order of JISCODE to fill a polygon of 47 prefectures.
inset	logical. if TRUE, Okinawa Prefecture is shown in a inset map. The default value is TRUE.
...	any other options passed to plot method of Simple features class.

Details

The function JapanPrefMap draws a simple choropleth map of Japan in prefecture level with or without inset of Okinawa Prefecture. This feature is most frequently desired by Japanese R users but has been difficult to draw with R functions, for example, map('japan') in **mapdata** package. What is important is that this function receives a color vector in order of JIS code of prefectures. Since most official statistics by prefecture is in order of the JIS code, users simply create a color sequence for a choropleth map without any rearranging the order. Users are now freed from a trouble in applying order or merge functions to their data set.

Population set was retrieved from 2010 Population Census of Japan.

Value

A matrix. The coordinates of a label point in each prefecture.

Note

For the sake of simple visualization, prefecture boundaries are lacking accuracy; assisted by Quantum GIS (http://www.qgis.org/), the author drew by hand the boundaries omitting minor islands. Therefore, users should not use the map for calculating area or measuring a distance.

Author(s)

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See Also

cshp in **cshapes** package, japan in **mapdata** package.

Examples

```
JapanPrefMap()

if (requireNamespace("RColorBrewer", quietly = TRUE)) {
  cols <- rev(RColorBrewer::brewer.pal(8,"Set2"))
}else{
  cols <- sample(colours(), 47)
}
JapanPrefMap(col = cols, border = gray(.8), axes = TRUE)

if (requireNamespace("foreign", quietly = TRUE)) {
dat <- foreign::read.dbf(system.file("shapes/jpn.dbf", package="NipponMap"))
op <- par(bg = "skyblue")
p <- JapanPrefMap(col = "ivory")
col <- c("olivedrab4", "olivedrab1")
pop <- dat$population / 1e+7
symbols(p, circles = sqrt(pop / (2 * pi)), inches = FALSE,
    fg = col[1], bg = col[2], add = TRUE)
idx <- c(1e+6, 5e+6, 1e+7)
pos <- legend("bottomright", legend = format(idx, scientific = 10, big.mark = ","),
    title = "Population (2010)", bg = "white", x.intersp = 2, y.intersp = 1.5)
symbols(pos$text$x - 1, pos$text$y, circles = sqrt(idx / 1e+7 / (2 * pi)),
    inches = FALSE, fg = col[1], bg = col[2], add = TRUE)
par(op)
}
```

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