# Package ‘NipponMap’

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**Date** 2018-05-16  
**Title** Japanese Map Data and Functions  
**Author** Susumu Tanimura [aut, cre]  
**Maintainer** Susumu Tanimura <aruminat@gmail.com>  
**Imports** sf, tibble  
**Suggests** RColorBrewer, foreign  
**Enhances** kokudosuuchi, estatapi, jpdistrict, jpmesh  
**Description** Digital map data of Japan for choropleth mapping, including a circle cartogram.  
**License** GPL (>= 2)  
**NeedsCompilation** no  
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### Description

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

### Details

The DESCRIPTION file:
JapanPrefCartogram

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Authors@R: c(person("Susumu", "Tanimura", role = c("aut", "cre"), email = "aruminat@gmail.com"))
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Index of help topics:

JapanPrefCartogram  A simple circle cartogram of Japan
JapanPrefMap        A simple choropleth map of Japan
NipponMap-package   Japanese Map Data and Functions

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).

Author(s)

Susumu Tanimura [aut, cre]
Maintainer: Susumu Tanimura <aruminat@gmail.com>

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

```r
JapanPrefCartogram()

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

```r
text(xy, lb)
palette(op)
```
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)

Susumu Tanimura <aruminat@gmail.com>

See Also

cshp in cshapes package, japan in mapdata package.
Examples

```r
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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