# Package ‘ggsn’

October 13, 2022

**Type** Package  
**Title** North Symbols and Scale Bars for Maps Created with 'ggplot2' or 'ggmap'  
**Depends** R (>= 3.4), ggplot2, grid  
**Imports** sf, png, mapproj, ggmap, graphics, utils  
**Description** Adds north symbols (18 options) and scale bars in kilometers, meters, nautical miles, or statute miles, to maps in geographic or metric coordinates created with 'ggplot2' or 'ggmap'.  
**License** GPL (>= 2)  
**LazyLoad** yes  
**URL** [https://github.com/oswaldosantos/ggsn](https://github.com/oswaldosantos/ggsn)  
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**Author** Oswaldo Santos Baquero [aut, cre]  
**Maintainer** Oswaldo Santos Baquero <baquero@usp.br>  
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The ggsn Package

Description

North symbols and scale bars for maps created with 'ggplot' or 'ggmap'. Adds north symbols (18 options) and scale bars in kilometers to maps in geographic or metric coordinates created with 'ggplot' or 'ggmap'.

Details

Package: ggsn
Type: Package
Version: 0.5.0
Date: 2016-11-12
Depends: R (>= 3.4), ggplot2
Imports: grid, ggmap, sf, png, maptools
Suggests: rgdal, broom
License: GPL (>= 2)
LazyLoad: yes
URL: https://github.com/oswaldosantos/ggsn
Author: Oswaldo Santos Baquero <baquero@usp.br>
Maintainer: Oswaldo Santos Baquero <baquero@usp.br>

Blank theme

Description

ggplot blank theme.

Usage

blank()

Examples

## Not run:
library(sf)
data(domestic_violence)
ggplot(domestic_violence, aes(fill = Scaled)) + geom_sf() +
domestic_violence

Human and animal violence reports in São Paulo, Brazil

Description

A dataset containing observed and expected scaled values of human and animal violence reports.

Usage

domestic_violence

Format

A data frame of class "sf" with 768 rows and 4 variables:

- **Type**: Animal or Human
- **Value**: Observed or Expected
- **Scaled**: Scaled value
- **geometry**: sfc_POLYGON

References


north

North symbol

Description

Adds a north symbol to maps created with ggplot or ggmap.

Usage

north(data = NULL, location = "topright", scale = 0.1, symbol = 1, x.min, x.max, y.min, y.max, anchor = NULL)
Arguments

data  the same \texttt{data.frame} passed to \texttt{ggplot} to plot the map.

location  string indicating the symbol’s location in the plot. Possible options: "topright" (default), "bottomright", "bottomleft" and "topleft".

scale  number between 0 and 1 to indicate the symbol size as a proportion of the map size (bounding box).

symbol  number between 1 and 18 to choose a symbol (see \texttt{northSymbols}).

x.min  if \texttt{data} is not defined, number with the minimum x coordinate. Useful for \texttt{ggmap}.

x.max  if \texttt{data} is not defined, number with the maximum x coordinate. Useful for \texttt{ggmap}.

y.min  if \texttt{data} is not defined, number with the minimum y coordinate. Useful for \texttt{ggmap}.

y.max  if \texttt{data} is not defined, number with the maximum y coordinate. Useful for \texttt{ggmap}.

anchor  named vector with coordinates to control the symbol position. For location = "topright", \texttt{anchor} defines the coordinates of the symbol’s topright corner and so forth. The x coordinate must be named as \texttt{x} and the y coordinate as \texttt{y}.

Details

North symbols are included in the plot with the \texttt{annotation_custom} function, which do not works when used together with an empty call to \texttt{ggplot} (see last example). When it is convenient to use an empty call to \texttt{ggplot}, use \texttt{north2} instead.

Examples

```r
## Not run:
library(sf)
data(domestic_violence)
ggplot(domestic_violence, aes(fill = Scaled)) +
  geom_sf() +
  north(domestic_violence, location = "bottomright", symbol = 15) +
  scale_fill_continuous(low = "#fff7ec", high = "#7F0000")
## End(Not run)
```

Description

Alternative implementation to add a north symbol to maps created with \texttt{ggplot} or \texttt{map}.
northSymbols

Usage

north2(ggp, x = 0.65, y = 0.9, scale = 0.1, symbol = 1)

Arguments

  ggp               ggplot2 object.
  x                 number between 0 and 1 to indicate the x axis position of the symbol’s bottom left corner. 0 is the left side and 1 the right side.
  y                 number between 0 and 1 to indicate the y axis position of the symbol’s bottom left corner. 0 is the bottom and 1 the top.
  scale             number between 0 and 1 to indicate the symbol size as a proportion of the plot area (not the map size).
  symbol            number between 1 and 18 to choose a symbol (see northSymbols).

Details

North symbols are included in the plot with the annotation_custom function, which do not works when used together with an empty call to ggplot (see last example). When it is convenient to use an empty call to ggplot, use north2 instead.

Examples

```r
## Not run:
library(sf)
data(domestic_violence)
map <- ggplot(domestic_violence, aes(fill = Scaled)) +
  geom_sf() +
  scale_fill_continuous(low = "#fff7ec", high = "#7F0000") +
  blank()
north2(map, .5, .5, symbol = 10)

## End(Not run)
```

northSymbols

Available north symbols.

Description

Displays available north symbols.

Usage

northSymbols()

Note

The symbols were obtained from QGIS 2.8.1 - Wien.
scalebar

References

http://www.qgis.org/en/site

Examples

northSymbols()

scalebar

Description

Adds a scale bar to maps created with ggplot or ggmap.

Usage

```r
scalebar(data = NULL, location = "bottomright", dist = NULL, 
dist_unit = NULL, transform = NULL, dd2km = NULL, model = NULL, 
height = 0.02, st.dist = 0.02, st.bottom = TRUE, st.size = 5, 
st.color = "black", box.fill = c("black", "white"), 
box.color = "black", border.size = 1, x.min = NULL, x.max = NULL, 
y.min = NULL, y.max = NULL, anchor = NULL, facet.var = NULL, 
facets.lev = NULL, ...)```

Arguments

data the same `data.frame` passed to `ggplot` to plot the map.
location string indicating the scale bar’s location in the plot. Possible options: "topright" (default), "bottomright", "bottomleft" and "topleft".
dist distance to represent with each segment of the scale bar.
dist_unit unit of measurement for dist. Possible values: "km" (kilometers) and "m" (meters), "nm" (nautical miles) and "mi" (statute miles).
transform If TRUE, it is assumed that coordinates are in decimal degrees. If FALSE, it assumed that they are in meters.
dd2km deprecated. Use transform instead.
model choice of ellipsoid model ("WGS84", "GRS80", "Airy", "International", "Clarke", or "GRS67") Used when transform is TRUE.
height number between 0 and 1 to indicate the scale bar’s height, as a proportion of the y axis.
st.dist number between 0 and 1 to indicate the distance between the scale bar and the scale bar’s text, as a proportion of the y axis.
st.bottom logical. If TRUE (default) the scale bar’s text is displayed at the bottom of the scale bar, if FALSE, it is displayed at the top.
st.size  
number to indicate the scale bar’s size. It is passed to size in `annotate` function.

st.color  
color of the scale bar’s text. Default is black.

box.fill  
fill color of the box. If vector of two colors, the two boxes are filled with a different color. Defaults to black and white.

box.color  
color of the box’s border. If vector of two colors, the borders of the two boxes are colored differently. Defaults to black.

border.size  
number to define the border size.

x.min  
if data is not defined, number with the minimum x coordinate. Useful for ggmap.

x.max  
if data is not defined, number with the maximum x coordinate. Useful for ggmap.

y.min  
if data is not defined, number with the minimum y coordinate. Useful for ggmap.

y.max  
if data is not defined, number with the maximum y coordinate. Useful for ggmap.

anchor  
named vector with coordinates to control the symbol’s position. For location = "topright", anchor defines the coordinates of the symbol’s top right corner and so forth. The x coordinate must be named as x and the y coordinate as y.

facet.var  
if faceting, character vector of variable names used for faceting. This is useful for placing the scalebar in only one facet and must be used together with facet.lev.

facet.lev  
character vector with the name of one level for each variable in facet.var. The scale bar will be drawn only in the facet.lev facet.

...  
further arguments passed to `geom_text`.

Examples

```r
## Not run:
library(sf)
data(domestic_violence)

# Map in geographic coordinates
ggplot(domestic_violence, aes(fill = Scaled)) + geom_sf() +
scalebar(domestic_violence, dist = 4, dist_unit = "km",
  transform = TRUE, model = "WGS84") +
blank() +
scale_fill_continuous(low = "#fff7ec", high = "#7F0000")

# Map in projected coordinates
domestic_violence2 <- st_transform(domestic_violence, 31983)
ggplot(domestic_violence2, aes(fill = Scaled)) + geom_sf() +
scalebar(domestic_violence2, dist = 4, dist_unit = "km",
  transform = FALSE, model = "WGS84") +
blank() +
```
```r
scale_fill_continuous(low = "#fff7ec", high = "#F00000")

## End(Not run)
```
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