# Package ‘ggsn’

March 20, 2017

**Type** Package  

**Title** North Symbols and Scale Bars for Maps Created with 'ggplot2' or 'ggmap'  

**Depends** R (>= 3.3.1), ggplot2  

**Imports** png, grid, maptools, graphics  

**Suggests** rgdal, ggmap, broom  

**Description** Adds north symbols (18 options) and scale bars in kilometers 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)  

**Version** 0.4.0  

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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: 0.4.0
Date: 2016-03-20
Depends: R (>= 3.3.1), ggplot2
Imports: png, grid, maptools
Suggests: rgdal, ggmap, 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

library(rgdal)
library(broom)
dsn <- system.file('extdata', package = 'ggsn')
map <- readOGR(dsn, 'sp')
map@data$id <- 0:(nrow(map@data) - 1)
```r
map.df <- merge(tidy(map), map, by = 'id')

ggplot(map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  north(map.df) +
  blank()

north(map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  north(map.df)
```

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**north**

**North symbol**

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### Description

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

### Usage

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

### Arguments

- **data**: the same `data.frame` passed to `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 `northSymbols`).
- **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 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`. 

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
library(rgdal); library(broom)
dsn <- system.file('extdata', package = 'ggsn')
map <- readOGR(dsn, 'sp')
map$id <- 1:nrow(map) + 1
map.df <- merge(tidy(map), map, by = 'id')

ggplot(map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  north(map.df) +
  scale_fill_brewer(name = 'Animal abuse\notifications', palette = 8)

ggplot(data = map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  north(map.df, location = 'bottomleft', symbol = 8) +
  scale_fill_brewer(name = 'Animal abuse\notifications', palette = 8)

ggplot(map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  north(data = map.df, location = 'bottomright', scale = 0.2, symbol = 14,
        anchor = c(x = -46.4, y = -23.9)) +
  scale_fill_brewer(name = 'Animal abuse\notifications', palette = 8)

## Not run:
```
```
## End(Not run)
```
```

north2

Description

Alternative implementation to add a north symbol to maps created with `ggplot` or `map`. 
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

library(rgdal); library(broom)
dsn <- system.file('extdata', package = 'ggsn')
map <- readOGR(dsn, 'sp')
map$data$id <- 0:(nrow(map$data) - 1)
map.df <- merge(tidy(map), map, by = 'id')

map2 <- ggplot(data = map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  scale_fill_brewer(name = 'Animal abuse\notifications', palette = 8)

north2(map2, .5, .5)

northSymbols

Available north symbols.

Description

Displays available north symbols.

Usage

northSymbols()
Note
The symbols were obtained from QGIS 2.8.1 - Wien.

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

Examples
northSymbols()

dataframe       Scale bar

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

Usage
scalebar(data = NULL, location = "bottomright", dist, height = 0.02,
          st.dist = 0.02, st.bottom = TRUE, st.size = 5, dd2km = NULL, model,
          x.min, x.max, y.min, y.max, anchor = NULL, facet.var = NULL,
          facet.lev = NULL)

Arguments

- **data**: the same data.frame passed to ggplot to plot the map.
- **location**: string indicating the symbol's location in the plot. Possible options: "topright" (default), "bottomright", "bottomleft" and "topleft".
- **dist**: distance in km to represent with each segment of the scale bar.
- **height**: number between 0 and 1 to indicate the height of the scale bar, 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 text, as a proportion of the y axis.
- **st.bottom**: logical. If TRUE (default) the scale bar 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 text size. It is passed to the size argument of annotate function.
- **dd2km**: logical. If TRUE dist it is assumed that map coordinates are in decimal degrees, if FALSE, it assumed they are in meters.
- **model**: choice of ellipsoid model ("WGS84", "GRS80", "Airy", "International", "Clarke", "GRS67") Used when dd2km is TRUE.
- **x.min**: if data is not defined, number with the minimum x coordinate. Useful for ggmap.
scalebar

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 position. For location = "topright", anchor defines the coordinates of the symbol's topright 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 only in 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.

Examples

library(rgdal); library(broom)
dsn <- system.file('extdata', package = 'ggsn')

## Map in geographic coordinates.
map <- readOGR(dsn, 'sp')
map$data$id <- 1:nrow(map$data)
map.df <- merge(tidy(map), map, by = 'id')

ggplot(data = map.df, aes(long, lat, group = group, fill = nots)) +
  geom_polygon() +
  coord_equal() +
  geom_path() +
  scale_fill_brewer(name = 'Animal abuse\notifications', palette = 8) +
  scalebar(map.df, dist = 5, dd2km = TRUE, model = 'WGS84')
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