Package 'geoheatmap'

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Type Package

Title Create Geospatial Cartogram Heatmaps

Version 0.1.0

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Description The functionality provided by this package is an expansion of the code
of the 'statebins' package, cre-
ated by B. Rudis (2022), <doi:10.32614/CRAN.package.statebins>. It allows for the cre-
ation of square choropleths
for the entire world, provided an appropriate specified grid is supplied.

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Encoding UTF-8

Imports geofacet, statebins, ggplot2, plotly, rlang

VignetteBuilder knitr

Suggests knitr, rmarkdown, viridisLite, testthat (>= 3.0.0), htmltools

LazyData true

RoxygenNote 7.2.3

Depends R (>= 2.10)

Collate 'aaa.R' 'geoheatmap.R' 'geom-rrect.r' 'geom-rtile.R' 'gutil.R'
'internet.R' 'util.R'

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

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geoheatmap	*Create a new ggplot-based geographical heatmap for a user-specified geographical grid*

Description

Pass in desired data frame and grid and get back a square choropleth. The function takes inspiration from the statebins function, modifying it to allow for non-US grids and territories, e.g. as defined in the geofacet package. The output is a ggplot2 object to which additional layers can be added.

Usage

```
geoheatmap(
  facet_data = NULL,
  grid_data = NULL,
  facet_col = NULL,
  value_col = NULL,
  merge_col = NULL,
  dark_label = "black",
  light_label = "white",
  na_label = "white",
  font_size = 3,
  facet_border_col = "white",
  facet_border_size = 2,
  round = FALSE,
  radius = grid::unit(6, "pt"),
  ggplot2_scale_function = ggplot2::scale_fill_continuous,
  hover = FALSE,
  ...
)
```

Arguments

facet_data	data frame of facets (geographical locations) and values to plot
grid_data	data frame of matching geographical grid positions
facet_col	column name in facet_data that holds the facets. No duplicates; can be full names (e.g. "Netherlands") or abbreviations (e.g. "NL")
value_col	column name in facet_data that holds the values to be plotted
merge_col	grids can sometimes hold both native and anglophone language geographical names (e.g. "Bayern/Bavaria". If native option is preferable, use merge_col; defaults to "name".
dark_label, light_label, na_label	
	dark/light/NA label colors. The specified color will be used when the algorithm determines labels should be inverted.

font_size	font size (default = 3)
facet_border_col	
	default "white" - this creates the "spaces" between boxes
facet_border_size	
	border size
round	rounded corners (default: FALSE)
radius	if round is TRUE then use grid::unit to specify the corner radius. Default is grid::unit(6, "pt") if using rounded corners.
ggplot2_scale_function	
	ggplot2 scale function to use. Defaults to scale_fill_continuous
hover	if hover is TRUE, enables interactive plotly plot (see also ggplotly). Note it only works when round is set to FALSE.
...	additional parameters to the scale function

Details

Like in the statebins package, we offer the option to specify a dark_label color and a light_label color. Depending on the selected colour scale function, geoheatmap will use that information to determine what label to use on lighter/darker tiles. This should in principle mean that labels never fade into the background. Note that this only applies if colours are defined within function, i.e. not called after the object has already been created.

You can customize the scale function you pass in by using name parameters. All named parameters not used by geoheatmap() itself get passed to the scale function.

The default theme is set to theme_void(), but this can be either overwritten, or added onto depending on intended plot purposes.

Value

ggplot2 object

References

Bob Rudis. (2022). statebins: Create United States Uniform Cartogram Heatmaps. R package version 1.4.0. URL: https://CRAN.R-project.org/package=statebins

Ryan Hafen. (2018). geofacet: 'ggplot2' Faceting Utilities for Geographical Data. R package version 0.2.1. URL: https://CRAN.R-project.org/package=geofacet

See Also

statebins geofacet

Examples

```
data(internet)
library(geofacet)
library(ggplot2)
```

```
internet_2015 <- subset(internet, year == 2015)
geoheatmap(facet_data= internet_2015, grid_data= europe_countries_grid1,
                    facet_col = "country", value_col = "users")
```

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internet   *Individuals using the Internet*

Description

This dataset contains information on the percentage of individuals using the Internet within a given
population, categorized by country and year. It helps to measure the digital divide and track progress
internet accessibility worldwide. Internet users are defined as individuals who have used the Internet
(from any location) in the last 3 months. The data is collected from national surveys and telecom-
munications ministries and is regularly updated (last update: 2022) to reflect the latest available
figures.

Usage

```
internet
```

Format

A data frame with 7101 observations (long format) on the following 3 variables:

country list of countries for which data was collected; there are 263 unique entries, including
    UN-recognized countries, dependent and autonomous territories.

year year in which data was recorded in.

users amount of population with active internet usage, expressed in percentage.

Details

Dataset contains a country name ("Democratic Republic of Korea") that has a encoding that does
not comply with the UTF-8, so this observation is removed from the dataset to avoid encoding
issues in the example.

Source

The World Bank. (2024). Internet Users (% of population) [Data file]. Retrieved from https://data.worldbank.org/indicator/IT.

The World Bank Group. (2024). Internet Users (% of population) [Data file]. Retrieved from
https://data.worldbank.org/indicator/IT.NET.USER.ZS

References

International Telecommunication Union (ITU). (2024). ITU data (World Telecommunication/ICT
Indicators Database) used in World Bank compilation.

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