Package ‘statebins’

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Type Package
Title U.S. State Cartogram Heatmaps in R; an Alternative to Choropleth Maps for USA States
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Author Bob Rudis (@hrbrmstr)
Maintainer Bob Rudis <bob@rudis.net>
Description Cartogram heatmaps are an alternative to choropleth maps for USA States and are based on work by the Washington Post graphics department in their report on “The states most threatened by trade”. “State bins” preserve as much of the geographic placement of the states as possible but has the look and feel of a traditional heatmap. Functions are provided that allow for use of a binned, discrete scale, a continuous scale or manually specified colors depending on what is needed for the underlying data.
URL http://github.com/hrbrmstr/statebins
BugReports https://github.com/hrbrmstr/statebins/issues
License MIT + file LICENSE
Suggests testthat
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statebins-package

statebins is an alternative to choropleth maps for US States

Description

statebins is an alternative to choropleth maps for US States

Author(s)

Bob Rudis (@hrbrmstr)

statebins

Create a new ggplot-based "statebin" chart for USA states (discrete scale)

Description

statebins() creates "statebin" charts in the style of http://bit.ly/statebins

Usage

statebins(state_data, state_col = "state", value_col = "value",
          text_color = "black", font_size = 3, state_border_col = "white",
          breaks = 5, labels = 1:5, legend_title = "Legend",
          legend_position = "top", brewer_pal = "PuBu", plot_title = "",
          title_position = "bottom")

Arguments

state_data data frame of states and values to plot
state_col column name in state_data that has the states. no duplicates and can be names (e.g. "Maine") or abbreviatons (e.g. "ME")
value_col column name in state_data that holds the values to be plotted
text_color default "black"
font_size font size (default = 3)
state_border_col default "white" - this creates the "spaces" between boxes
breaks a single number (greater than or equal to 2) giving the number of intervals into which data values are to be cut.
labels labels for the levels breaks
legend_title title for the legend
statebins_continuous

legend_position
  "none", "top", "left", "right" or "bottom" (defaults to "top")
brewer_pal
  which named RColorBrewer palette to use (defaults to "PuBu")
plot_title
  title for the plot
title_position
  where to put the title ("bottom" or "top" or "" for none); if "bottom", you get back a grob vs a ggplot object

Details

This version uses discrete RColorBrewer scales, binned by the "breaks" parameter.
The function minimally expects the caller to pass in a data frame that:

  • has one column of all state abbreviations (all caps, including DC & PR or a column of state names (standard capitalization) named state
  • has another column of values named value

Doing so will create a "statebin" chart with 5 breaks and return a ggplot2 object.
You can use a different column for the state names and values by changing state_col and value_col accordingly.
To add a title, change plot_title to anything but an empty atomic string vector (i.e. "") and set title_position to "top" or "bottom". Choosing "bottom" will cause statebins to use arrangeGrob to position the title via sub and return a frame grob instead of a ggplot2 object.

Value

ggplot2 object or grob

Examples

```r
## Not run:
data(USArrests)
USArrests$state <- rownames(USArrests)
statebins(USArrests, value_col="Assault", text_color="black", font_size=3,
  legend_title = "Assault", legend_position="bottom")
## End(Not run)
```

statebins_continuous  Create a new ggplot-based "statebin" chart for USA states (continuous scale)

Description

statebins() creates "statebin" charts in the style of http://bit.ly/statebins
statebins_continuous

Usage

statebins_continuous(state_data, state_col = "state", value_col = "value",
                      text_color = "black", font_size = 3, state_border_col = "white",
                      legend_title = "Legend", legend_position = "top", brewer_pal = "PuBu",
                      plot_title = "", title_position = "bottom")

Arguments

state_data data frame of states and values to plot
state_col column name in state_data that has the states. no duplicates and can be names
(e.g. "Maine") or abbreviations (e.g. "ME")
value_col column name in state_data that holds the values to be plotted
text_color default "black"
font_size font size (default = 3)
state_border_col default "white" - this creates the "spaces" between boxes
legend_title title for the legend
legend_position "none", "top", "left", "right" or "bottom" (defaults to "top")
brewer_pal which named RColorBrewer palette to use (defaults to "PuBu")
plot_title title for the plot
title_position where to put the title ("bottom" or "top" or "" for none); if "bottom", you get
back a grob vs a ggplot object

Details

This version uses a continuous scale based on RColorBrewer scales (passing in a 6 element
RColorBrewer palette to scale_fill_gradientn).

The function minimally expects the caller to pass in a data frame that:

- has one column of all state abbreviations (all caps, including DC & PR ) or a column of state
  names (standard capitalization) named state
- has another column of values named value

Doing so will create a "statebin" chart with 5 breaks and return a ggplot2 object.

You can use a different column for the state names and values by changing state_col and value_col
accordingly.

To add a title, change plot_title to anything but an empty atomic string vector (i.e. "") and
set title_position to "top" or "bottom". Choosing "bottom" will cause statebins to use
arrangeGrob to position the title via sub and return a frame grob instead of a ggplot2 object.

Value

ggplot2 object or grob
Examples

```r
## Not run:
data(USArrests)
USArrests$state <- rownames(USArrests)
statebins_continuous(USArrests, value_col="Murder", text_color="black", font_size=3, 
legend_title = "Murder", legend_position="bottom")

## End(Not run)
```

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**statebins_manual**

Create a new ggplot-based "statebin" chart for USA states (manually colored)

**Description**


**Usage**

```r
```

**Arguments**

- `state_data` data frame of states and values to plot
- `state_col` column name in `state_data` that has the states. no duplicates and can be names (e.g. "Maine") or abbreviations (e.g. "ME")
- `color_col` column name in `state_data` that holds the colors to be used
- `text_color` default "black"
- `font_size` font size (default = 3)
- `state_border_col` default "white" - this creates the "spaces" between boxes
- `labels` labels for the legend (should be the same number as distinct colors in `color_col`); NULL == no labels/legend
- `legend_title` title for the legend
- `legend_position` "none", "top", "left", "right" or "bottom" (defaults to "top")
- `plot_title` title for the plot
- `title_position` where to put the title ("bottom" or "top" or "" for none); if "bottom", you get back a grob vs a ggplot object
Details

This version uses manual colors (i.e. pass in a column that defines the color per-state)

The function minimally expects the caller to pass in a data frame that:

- has one column of all state abbreviation(s) (all caps, including DC & PR or a column of state names (standard capitalization) named state
- has another column of colors named color

Doing so will create a "statebin" chart with the colors specified as a ggplot2 object.

You can use a different column for the state names and colors by changing state_col and color_col accordingly.

To add a title, change plot_title to anything but an empty atomic string vector (i.e. "") and set title_position to "top" or "bottom". Choosing "bottom" will cause statebins to use arrangeGrob to position the title via sub and return a frame grob instead of a ggplot2 object.

Value

ggplot2 object or grob

Examples

```r
## Not run:
library(httr)
library(dplyr)
election_2012 <-
results <- read.csv(textConnection(content(election_2012, as="text")),
  header=TRUE, stringsAsFactors=FALSE)
results <- results %>%
  mutate(color=ifelse(is.na(Obama), "#2166ac", "#b2182b")) %>%
  select(state, color)
results %>%
  statebins_manual(font_size=4,
    text_color = "white", labels=c("Romney", "Obama"),
    legend_position="right", legend_title="Winner")
## End(Not run)
```
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