Package ‘ggcharts’
March 26, 2020

Type Package
Title Shorten the Distance from Data Visualization Idea to Actual Plot
Version 0.1.0
Description Streamline the creation of common charts by taking care of a lot of
data preprocessing and plot customization for the user. Provides a
high-level interface to create plots using 'ggplot2'.
Depends R (>= 2.10), ggplot2
Imports dplyr, magrittr, patchwork, rlang
Suggests gapminder, knitr, rmarkdown, tidyr, testthat (>= 2.1.0),
       vdiff
License MIT + file LICENSE
URL https://github.com/thomas-neitmann/ggcharts
BugReports https://github.com/thomas-neitmann/ggcharts/issues
Encoding UTF-8
LazyData true
RoxygenNote 7.0.2
VignetteBuilder knitr
NeedsCompilation no
Author Thomas Neitmann [aut, cre],
       Julia Silge [ctb, cph],
       David Robinson [ctb, cph]
Maintainer Thomas Neitmann <th.neitmann@gmail.com>
Repository CRAN
Date/Publication 2020-03-26 17:00:03 UTC

R topics documented:

  bar_chart .......................................................... 2
  biomedicalrevenue ............................................. 4
Description

Easily create a bar chart

Usage

```r
bar_chart(
  data,
  x,
  y,
  facet = NULL,
  ...,
  bar_color = "#1F77B4",
  highlight = NULL,
  sort = TRUE,
  horizontal = TRUE,
  limit = NULL,
  threshold = NULL
)
```

```r
column_chart(
  data,
  x,
  y,
  facet = NULL,
  ...,
  bar_color = "#1F77B4",
  highlight = NULL,
  sort = NULL,
  horizontal = FALSE,
  limit = NULL,
  threshold = NULL
)
```
Arguments

data Dataset to use for the bar chart
x character or factor column of data
y numeric column of data representing the bar length
facet character or factor column of data defining the faceting groups
... Additional arguments passed to aes()
bar_color character. The color of the bars
highlight character. One or more value(s) of x that should be highlighted in the plot
sort logical. Should the data be sorted before plotting?
horizontal logical. Should the plot be oriented horizontally?
limit numeric. If a value for limit is provided only the top limit records will be displayed
threshold numeric. If a value for threshold is provided only records with y > threshold will be displayed

Details

Both limit and threshold only work when sort = TRUE. Attempting to use them when sort = FALSE will result in an error. Furthermore, only limit or threshold can be used at a time. Providing a value for both limit and threshold will result in an error as well.

column_chart() is a shortcut for bar_chart() with horizontal = FALSE and sort = FALSE if x is numeric.

Value

An object of class ggplot

Author(s)

Thomas Neitmann

Examples

data(biomedicalrevenue)
revenue2018 <- biomedicalrevenue[biomedicalrevenue$year == 2018, ]
revenue_roche <- biomedicalrevenue[biomedicalrevenue$company == "Roche", ]

## By default bar_chart() creates a horizontal and sorted plot
bar_chart(revenue2018, company, revenue)

## Create a vertical, non-sorted bar chart
bar_chart(revenue_roche, year, revenue, horizontal = FALSE, sort = FALSE)

## column_chart() is a shortcut for the above
column_chart(revenue_roche, year, revenue)

## Limit the number of bars to the top 10
biomedicalrevenue

bar_chart(revenue2018, company, revenue, limit = 10)

## Display only companies with revenue > 40B.
bar_chart(revenue2018, company, revenue, threshold = 40)

## Change the bar color
bar_chart(revenue2018, company, revenue, bar_color = "purple")

## Highlight a single bar
bar_chart(revenue2018, company, revenue, limit = 10, highlight = "Roche")

## Use facets to show the top 10 companies over the years
bar_chart(biomedicalrevenue, company, revenue, facet = year, limit = 10)

biomedicalrevenue | Top Biomedical Companies Revenues.

Description

A dataset containing the annual revenues of top biomedical companies from 2011 to 2018.

Usage

biomedicalrevenue

Format

A data frame with 224 rows and 3 variables:

- company  Name of the company
- year      Fiscal year
- revenue   Revenue in billion USD

Source

https://en.wikipedia.org/wiki/List_of_largest_biomedical_companies_by_revenue
diverging_bar_chart  Diverging Bar Chart

Description
Easily create a diverging bar chart

Usage
```
diverging_bar_chart(
  data, 
  x, 
  y, 
  bar_colors = c("#1F77B4", "#FF7F0E"),
  text_color = "black",
  text_size = 10
)
```

Arguments
- `data` : Dataset to use for the diverging bar chart
- `x` : character or factor column of data
- `y` : numeric column of data representing the bar length
- `bar_colors` : A character vector of length 2 containing the colors for the positive and negative bars
- `text_color` : character. The color for the bar annotations
- `text_size` : numeric. The size of the bar annotation text in pt

Value
An object of class ggplot

Author(s)
Thomas Neitmann

Examples
```
if (requireNamespace("tidyr")) {
  library(magrittr)
  data(biomedicalrevenue)
  biomedicalrevenue %>%
  dplyr::filter(year > 2016) %>%
  tidyr::pivot_wider(
    values_from = revenue,
    names_from = year,
    names_prefix = "revenue_"
  )
```
diverging_lollipop_chart

Description

Easily create a diverging lollipop chart

Usage

diverging_lollipop_chart(
  data,
  x,
  y,
  lollipop_colors = c("#1F77B4", "#FF7F0E"),
  line_size = 0.75,
  point_size = 3,
  text_color = "black",
  text_size = 10
)

Arguments

data          Dataset to use for the diverging lollipop chart
x             character or factor column of data
diverging_lollipop_chart

- **y**: numeric column of data representing the lollipop length
- **lollipop_colors**: A character vector of length 2 containing the colors for the positive and negative lollipops
- **line_size**: numeric. Size of the lollipop 'stick'
- **point_size**: numeric. Size of the lollipop 'head'
- **text_color**: character. The color for the lollipop annotations
- **text_size**: numeric. The size of the lollipop annotation text in pt

**Value**

An object of class ggplot

**Author(s)**

Thomas Neitmann

**Examples**

```r
if (requireNamespace("tidyr")) {
  library(magrittr)
  data(biomedicalrevenue)
  biomedicalrevenue %>%
  dplyr::filter(year > 2016) %>%
  tidyr::pivot_wider(
    values_from = revenue,
    names_from = year,
    names_prefix = "revenue_"
  ) %>%
  dplyr::mutate(diff = revenue_2018 - revenue_2017) %>%
  diverging_lollipop_chart(company, diff)
}

data(mtcars)
mtcars_z <- dplyr::transmute(
  .data = mtcars,
  model = row.names(mtcars),
  hpz = scale(hp)
)

diverging_lollipop_chart(mtcars_z, model, hpz)

## Change the colors
diverging_lollipop_chart(mtcars_z, model, hpz, lollipop_colors = c("darkgreen", "darkred"))

## Increase the axis label font size
diverging_lollipop_chart(mtcars_z, model, hpz, text_size = 14)

## Display the axis label text in the same color as the bars
diverging_lollipop_chart(mtcars_z, model, hpz, text_color = c("#1F77B4", "#FF7F0E"))
```
dumbbell_chart  

**Description**  
Easily create a dumbbell chart

**Usage**

dumbbell_chart(  
data,  
x,  
y1,  
y2,  
line_size = 1.5,  
line_color = "lightgray",  
point_size = 4,  
point_colors = c("#1F77B4", "#FF7F0E"),  
sort = TRUE,  
horizontal = TRUE,  
limit = NULL,  
legend = TRUE,  
legend_labels = waiver()  
)

**Arguments**

- **data**: Dataset to use for the dumbbell chart  
- **x**: character or factor column of data  
- **y1**: numeric column of data representing the dumbbell end  
- **y2**: numeric column of data representing the dumbbell start  
- **line_size**: numeric. Line width  
- **line_color**: character. Line color  
- **point_size**: numeric. Point size  
- **point_colors**: numeric. Point color  
- **sort**: logical. Should the data be sorted by y2 before plotting?  
- **horizontal**: logical. Should the plot be displayed horizontally?  
- **limit**: integer. If a value for limit is provided only the first limit records will be displayed  
- **legend**: logical. Should a legend be displayed?  
- **legend_labels**: character. Custom labels to be displayed in the legend
Value
An object of class ggplot

Author(s)
Thomas Neitmann

Examples
if (requireNamespace("tidyr") && requireNamespace("gapminder")) {
    library(magrittr)
    data(gapminder, package = "gapminder")

    # Data has to be in wide format
    pop <- gapminder %>%
        dplyr::filter(year %in% c(1952, 2007)) %>%
        tidyr::pivot_wider(
            id_cols = country,
            values_from = pop,
            names_from = year,
            names_prefix = "pop_"
        )

    withAutoprint({
        dumbbell_chart(pop, country, pop_1952, pop_2007)

        # Display only the top 10 countries in terms of population in 2007
        dumbbell_chart(pop, country, pop_1952, pop_2007, limit = 10)

        # Change line and point color
        dumbbell_chart(pop, country, pop_1952, pop_2007, limit = 10,
            line_color = "lightgray", point_color = c("lightgray", "black"))

        # Add custom legend labels
        dumbbell_chart(pop, country, pop_1952, pop_2007, limit = 10,
            legend_labels = c("1952", "2007"))

        # Increase line width and point size
        dumbbell_chart(pop, country, pop_1952, pop_2007, limit = 10,
            line_size = 2, point_size = 5)
    }, echo = FALSE)
}
Usage

```
lollipop_chart(
  data,
  x,
  y,
  facet = NULL,
  ...,
  line_size = 0.75,
  line_color = "#1F77B4",
  point_size = 4,
  point_color = line_color,
  highlight = NULL,
  sort = TRUE,
  horizontal = TRUE,
  limit = NULL,
  threshold = NULL
)
```

Arguments

- `data`    Dataset to use for the bar chart
- `x`       character or factor column of data
- `y`       numeric column of data representing the lollipop length
- `facet`   character or factor column of data defining the faceting groups
- `...`     Additional arguments passed to `aes()`
- `line_size`    numeric. Size of the lollipop 'stick'
- `line_color`   character. Color of the lollipop 'stick'
- `point_size`   numeric. Size of the lollipop 'head'
- `point_color`   character. Color of the lollipop 'head'
- `highlight`   character. One or more value(s) of `x` that should be highlighted in the plot
- `sort`       logical. Should the data be sorted before plotting?
- `horizontal`   logical. Should the plot be oriented horizontally?
- `limit`       numeric. If a value for limit is provided only the top limit records will be displayed
- `threshold`    numeric. If a value for threshold is provided only records with `y > threshold` will be displayed

Details

Both `limit` and `threshold` only work when `sort = TRUE`. Attempting to use them when `sort = FALSE` will result in an error. Furthermore, only `limit` or `threshold` can be used at a time. Providing a value for both `limit` and `threshold` will result in an error as well.

Value

An object of class `ggplot`
Author(s)
Thomas Neitmann

Examples

```r
data(biomedicalrevenue)
revenue2016 <- biomedicalrevenue[biomedicalrevenue$year == 2016, ]
revenue_bayer <- biomedicalrevenue[biomedicalrevenue$company == "Bayer", ]

## By default lollipop_chart() creates a horizontal and sorted plot
lollipop_chart(revenue2016, company, revenue)

## Create a vertical, non-sorted lollipop chart
lollipop_chart(revenue_bayer, year, revenue, horizontal = FALSE, sort = FALSE)

## Limit the number of lollipops to the top 15
lollipop_chart(revenue2016, company, revenue, limit = 15)

## Display only companies with revenue > 50B.
lollipop_chart(revenue2016, company, revenue, threshold = 50)

## Change the color of the whole lollipop
lollipop_chart(revenue2016, company, revenue, line_color = "purple")

## Change the color of the lollipop stick and head individually
lollipop_chart(revenue2016, company, revenue, point_color = "darkgreen", line_color = "gray")

## Decrease the lollipop head size
lollipop_chart(revenue2016, company, revenue, point_size = 2.5)

## Highlight a single lollipop
lollipop_chart(revenue2016, company, revenue, limit = 15, highlight = "Roche")

## Use facets to show the top 10 companies over the years
lollipop_chart(biomedicalrevenue, company, revenue, facet = year, limit = 10)
```

---

**Pyramid Chart**

**Description**
Easily create a pyramid chart

**Usage**

```r
pyramid_chart(
  data,
  x,
)```
y, 
group, 
bar_colors = c("#1F77B4", "#FF7F0E"), 
sort = "no", 
xlab = NULL, 
title = NULL
)

Arguments

data Dataset to use for the pyramid chart
x character or factor column of data
y numeric column of data
group character or factor column of data
bar_colors character vector of length 2 containing colors
sort character. Should the bars be sorted? By default "no".
xlab character. X axis label
title character. Plot title. By default no title is displayed.

Value
An object of class ggplot

Author(s)
Thomas Neitmann

Examples
library(magrittr)
data(mtcars)
cars <- mtcars %>%
  dplyr::count(cyl, am) %>%
  dplyr::mutate(am = ifelse(am == 0, "Manual", "Automatic"))

pyramid_chart(cars, cyl, n, am)
Index

*Topic datasets
  biomedicalrevenue, 4

bar_chart, 2
biomedicalrevenue, 4

column_chart (bar_chart), 2
diverging_bar_chart, 5
diverging_lollipop_chart, 6
dumbbell_chart, 8
lollipop_chart, 9
pyramid_chart, 11