Package ‘ggfun’

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Title Miscellaneous Functions for 'ggplot2'

Version 0.1.5

Description Useful functions and utilities for 'ggplot' object (e.g., geometric layers, themes, and utilities to edit the object).

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VignetteBuilder knitr

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R topics documented:

`element_blinds` *this element is used to control the line color of panel.grid.major/minor.x or panel.grid.major/minor.y*

Description

this element is used to control the line color of panel.grid.major/minor.x or panel.grid.major/minor.y

Usage

```
element_blinds(
  colour = c("white", "grey60"),
  axis,
  color = NULL,
  inherit.blank = FALSE
)
```

Arguments

colour the colour of rectangular, default is c('white', 'grey60').

axis character, require, option is y or x.

color, Color is an alias for colour

inherit.blank Should this element inherit the existence of an element_blank among its parents? If TRUE the existence of a blank element among its parents will cause this element to be blank as well. If FALSE any blank parent element will be ignored when calculating final element state.

Examples

```
library(ggplot2)
df <- data.frame(
        x = rep(c(2, 5, 7, 9, 12), 2),
        y = rep(c(1, 2), each = 5),
        z = factor(rep(1:5, each = 2)),
        w = rep(diff(c(0, 4, 6, 8, 10, 14)), 2)
      )
ggplot(df, aes(x, y)) + geom_tile(aes(fill = z), colour = 'grey50') +
theme(panel.grid.major.y = element_blinds(color= c('white', 'grey'), axis='y'))
```

element_roundrect *round rectangle borders and backgrounds*

Description

round rectangle borders and backgrounds

Usage

```
element_roundrect(
  fill = NULL,
  colour = NULL,
  size = NULL,
  linetype = NULL,
  color = NULL,
  r = grid::unit(0.1, ”snpc”),
  inherit.blank = FALSE
)
```

Arguments

fill Fill colour.

colour, color Line/border colour. Color is an alias for colour.

size text size in pts.

`linetype` Line type. An integer (0:8), a name (blank, solid, dashed, dotted, dotdash, longdash, twodash), or a string with an even number (up to eight) of hexadecimal digits which give the lengths in consecutive positions in the string.

`r` the radius of the rounded corners, a `unit` object, default is unit(0.1, 'snpc').

`inherit.blank` Should this element inherit the existence of an `element_blank` among its parents? If `TRUE` the existence of a blank element among its parents will cause this element to be blank as well. If `FALSE` any blank parent element will be ignored when calculating final element state.

Examples

```
library(ggplot2)
p <- ggplot(mpg, aes(displ, cty)) + geom_point()
p <- p + facet_grid(cols = vars(cyl))
p <- p + theme(strip.background=element_roundrect(fill="grey40", color=NA, r=0.15))
p
p2 <- ggplot(mtcars, aes(mpg, disp, color=factor(cyl), size=cyl)) +
      geom_point()
p2 + theme(legend.background=element_roundrect(color="#808080", linetype=2))
```

`facet_set` *facet_set*

Description

add a facet label to a ggplot or change facet label of a ggplot

Usage

```
facet_set(label, side = "t", angle = NULL)
```

Arguments

`label` a character or a named vector to label the plot

`side` to label the plot at which side, either 't' (top) or 'r' (right)

`angle` angle of the facet label. Default is 0 for side='t' and -90 for side='r'.

Value

a ggplot with facet label

`geom_cake` *geom_cake*

Description

ggplot2 layer of birthday cake

Usage

```
geom_cake(mapping = NULL, data = NULL, ...)
```

Arguments

`mapping`	aes mapping
`data`	data
`...`	additional parameters

Value

ggplot2 layer

Author(s)

Guangchuang Yu

Examples

```
library(ggplot2)
ggplot(mtcars, aes(mpg, disp)) + geom_cake()
library(ggplot2)
ggplot(mtcars, aes(mpg, disp)) + geom_cake()
```

`geom_segment_c` *geom_segment_c*

Description

geom_segment_c supports coloring segment with continuous colors

Usage

```
geom_segment_c(
  mapping = NULL,
  data = NULL,
  position = "identity",
  lineend = "butt",
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE,
  arrow = NULL,
  arrow.fill = NULL,
  ...
)
```

Arguments

`mapping`	aes mapping
`data`	data
`position`	position
`lineend`	lineend
`na.rm`	logical
`show.legend`	logical
`inherit.aes`	logical
`arrow`	specification for arrow heads, as created by arrow().
`arrow.fill`	fill color to usse for the arrow head (if closed). `NULL` means use `colour` aesthetic.
`...`	additional parameter

Value

add segment layer

Author(s)

Guangchuang Yu

See Also

geom_segment

Examples

```
set.seed(2019-06-28)
d = data.frame(x = rnorm(10),
               xend = rnorm(10),
               y = rnorm(10),
               yend = rnorm(10),
               v1 = rnorm(10),
              v2 = rnorm(10))
library(ggplot2)
ggplot(d) + geom_segment_c(aes(x = x, xend = xend, y=y, yend =yend, col0 = v1, col1 = v2)) +
   scale_color_viridis_c(name = "continuous colored lines") +
   theme_minimal() + theme(legend.position=c(.2, .85)) + xlab(NULL) + ylab(NULL)
```

geom_triangle *geom_triangle*

Description

ggplot2 layer of triangle

Usage

```
geom_triangle(mapping = NULL, data = NULL, ...)
```

Arguments

mapping	aes mapping
data	data
...	additional parameters

Value

ggplot2 layer

Author(s)

Shipeng Guo

Examples

```
library(ggplot2)
ggplot(mtcars, aes(mpg, disp)) + geom_triangle()
```

`geom_volpoint` *geom_volpoint*

Description

layer of scatter points for volcano plot to visualize differential genes

Usage

```
geom_volpoint(
  mapping = NULL,
  data = NULL,
  log2FC_cutoff = 2,
  p_cutoff = 1e-05,
  ...
)
```

Arguments

`mapping`	aesthetic mapping
`data`	input data set
`log2FC_cutoff`	cutoff values for log2FC
`p_cutoff`	cutoff values p-value or adjusted p-value
`...`	additional paramters passed to the layer

Value

a ggplot

`get_aes_var` *get_aes_var*

Description

extract aes mapping, compatible with ggplot2 < 2.3.0 & > 2.3.0

Usage

```
get_aes_var(mapping, var)
```

Arguments

`mapping`	aes mapping
`var`	variable

Value

mapped var

Author(s)

Guangchuang Yu

`get_legend` *get_legend*

Description

extract legend from a plot

Usage

```
get_legend(plot)
```

Arguments

`plot`	a gg or gtable object

Value

a 'gtable' object of the legend

Author(s)

Guangchuang Yu

`get_plot_data` *get_plot_data*

Description

extract data from a 'gg' plot

Usage

```
get_plot_data(plot, var = NULL, layer = NULL)
```

Arguments

`plot`	a 'gg' plot object
`var`	variables to be extracted
`layer`	specific layer to extract the data

Value

a data frame of selected variables

Author(s)

Guangchuang Yu

`ggbreak2ggplot` *ggbreak2ggplot*

Description

convert a ggbreak object to a ggplot object

Usage

```
ggbreak2ggplot(plot)
```

Arguments

`plot`	a ggbreak object

Value

a ggplot object

Author(s)

Guangchuang Yu

`gglegend` *gglegend*

Description

add manual setting legend

Usage

```
gglegend(mapping, data, geom, p = NULL)
```

Arguments

mapping aes mapping for the 'geom'. The first mapping should be the one for the legend, while others maybe needed for the 'geom' (e.g., label for geom_text).

data input data frame. If users want to mapping 'VALUE' to 'colour', the input data should contains 'VALUE' and 'colour' (actual value, e.g., 'red' and 'blue') variable.

geom a geom to plot the data for generating the legend and the geom will be plotted invisible.

p a ggplot object. If NULL, the 'last_plot()' will be used.

Details

add additional legend to a ggplot

Value

a ggplot object

Author(s)

Guangchuang Yu

Examples

```
library(ggplot2)
p <- ggplot(mtcars, aes(mpg, disp)) + geom_point()
data <- data.frame(colour = c("red",  "blue"), VALUE = c("A", "B"))
gglegend(aes(colour = VALUE, label=VALUE), data, geom_text, p)
```

---

identify.gg *identify*

Description

identify node by interactive click

Usage

```
## S3 method for class 'gg'
identify(x = last_plot(), col = "auto", ...)
```

Arguments

x tree view

col selected columns to extract. Default is "auto" which will select all columns for 'ggplot' object and 'node' column for 'ggtree' object

... additional parameters, normally ignored

Value

closest data point

Author(s)

Guangchuang Yu

`is.ggbreak` *is.ggbreak*

Description

check whether a plot is a ggbreak object (including 'ggbreak', 'ggwrap' and 'ggcut' that defined in the 'ggbreak' package)

Usage

```
is.ggbreak(plot)
```

Arguments

`plot`	a plot obejct

Value

logical value

Author(s)

Guangchuang Yu

`is.ggtree` *is.ggtree*

Description

test whether input object is produced by ggtree function

Usage

```
is.ggtree(x)
```

Arguments

`x`	object

Value

TRUE or FALSE

Author(s)

Guangchuang Yu

keybox *keybox*

Description

draw border for each of the ggplot legends

Usage

```
keybox(p, grob = "roundrect", gp = NULL)
```

Arguments

`p`	a ggplot object
`grob`	one of ’rect’ or ’roundrect’
`gp`	graphic parameter

Value

grob object

Author(s)

Guangchuang Yu

Examples

```
library(ggplot2)
p <- ggplot(mtcars, aes(mpg, disp, color=factor(cyl), size=cyl)) + geom_point()
keybox(p, 'roundrect', gp = gpar(col = '#808080', lty = "dashed"))
```

set_font *set_font*

Description

setting font for ggplot (axis text, label, title, etc.)

Usage

```
set_font(p, family = "sans", fontface = NULL, size = NULL, color = NULL)
```

Arguments

p	ggplot object
family	font fammily
fontface	font face
size	font size
color	font color

Value

TableGrob object

Author(s)

Guangchuang Yu

Examples

```
library(grid)
library(ggplot2)
d <- data.frame(x=rnorm(10), y=rnorm(10), lab=LETTERS[1:10])
p <- ggplot(d, aes(x, y)) + geom_text(aes(label=lab), size=5)
set_font(p, family="Times", fontface="italic", color='firebrick')
```

set_point_legend_shape *set_point_legend_shape*

Description

override point legend set by ’aes(shape = I(shape))’

Usage

```
set_point_legend_shape(plot)
```

Arguments

`plot`	a ’gg’ plot object

Value

an updated plot

Author(s)

Guangchuang Yu

`theme_blinds` *the theme of blind-like*

Description

the theme of blind-like

Usage

```
theme_blinds(colour = c("white", "grey"), axis = "y", ...)
```

Arguments

`colour`	the colour of rectangular, default is c(’white’, ’grey60’).
`axis`	character which grid of axis will be filled, default is ’y’.
`...`	additional parameters that passed to `theme` function.

Value

ggplot2 theme

Examples

```
library(ggplot2)
iris |> tidyr::pivot_longer(
    cols = !Species,
    names_to = 'var',
    values_to = 'value'
  ) |>
ggplot(
  aes(x=var, y=Species, color=value, size=value)
) +
geom_point() -> p
p +
theme_blinds(
  colour = c('grey90', 'white'),
  axis = 'y',
  axis.line.y=element_line()
)
p +
theme_blinds(
  colour = c('grey90', 'white'),
  axis = 'x',
  axis.line.x = element_line()
)
```

theme_fp *theme_fp*

Description

theme format painter

Usage

```
theme_fp(x, i)
```

Arguments

x	ggplot object to provide theme format
i	the element of a theme provided by x

Details

It applies theme element (i) from a ggplot (x) to another ggplot object

Value

theme element

Author(s)

Guangchuang Yu and Shuangbin Xu

theme_nothing *theme_nothing*

Description

A theme that only show the plot panel

Usage

```
theme_nothing(base_size = 11, base_family = "")
```

Arguments

base_size	font size
base_family	font family

Value

ggplot2 theme

Author(s)

Guangchuang Yu

theme_noxaxis *theme_noxaxis*

Description

A theme that only show y-axis

Usage

```
theme_noxaxis(color = "black", ...)

theme_noyaxis(color = "black", ...)

theme_noaxis(...)
```

Arguments

color	color of y-axis
...	additional parameters that passed to theme()

Value

ggplot2 theme

Author(s)

Guangchuang Yu

`theme_no_margin` *theme_no_margin*

Description

A theme that has no margin

Usage

```
theme_no_margin(...)
```

Arguments

`...`	additional parameters that passed to theme()

Value

ggplot2 theme

Author(s)

Guangchuang Yu

`theme_stamp` *the theme of blind-like alias of theme_blinds*

Description

the theme of blind-like alias of theme_blinds

Usage

```
theme_stamp(colour = c("white", "grey"), axis = "y", ...)
```

Arguments

`colour`	the colour of rectangular, default is c('white', 'grey60').
`axis`	character which grid of axis will be filled, default is 'y'.
`...`	additional parameters that passed to `theme` function.

`theme_transparent` *theme_transparent*

Description

transparent background theme

Usage

```
theme_transparent(...)
```

Arguments

`...`	additional parameter to tweak the theme

Value

ggplot object

Author(s)

Guangchuang Yu with contributions from Hugo Gruson

`volplot` *volplot*

Description

volcano plot

Usage

```
volplot(data, mapping, log2FC_cutoff = 2, p_cutoff = 1e-05, ...)
```

Arguments

`data`	input data set
`mapping`	aesthetic mapping
`log2FC_cutoff`	cutoff values for log2FC
`p_cutoff`	cutoff values p-value or adjusted p-value
`...`	additional paramters passed to the 'geom_volpoint' layer

Value

a ggplot

`yrange` *plot range of a ggplot object*

Description

extract x or y ranges of a ggplot

Usage

```
yrange(gg, type = "limit", region = "panel")

xrange(gg, type = "limit", region = "panel")

ggrange(gg, var, type = "limit", region = "panel")
```

Arguments

gg	a ggplot object
type	one of 'limit' or 'range', if 'region == "plot"', to extract plot limit or plot data range
region	one of 'panel' or 'plot' to indicate extracting range based on the plot panel (scale expand will be counted) or plot data (scale expand will not be counted)
var	either 'x' or 'y'

Value

range of selected axis

Author(s)

Guangchuang Yu

`%<+%` *%<+%*

Description

This operator attaches annotation data to a ggtree or ggsc graphic object

Usage

```
p %<+% data
```

Arguments

`p`	ggplot2 object, such as ggtree or ggsc graphic object.
`data`	data.frame, which must contains a column of `node`, or the first column of taxa labels, when `p` is a `ggtree` object. Or it must contains columns of `.BarcodeID`, when `p` is a `ggsc` object and `p$data` does not contain a column of `features`, if it contains, the `data` must also contains a column of `features`.

Value

ggplot object with annotation data added

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