

Package ‘ggfun’

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Title Miscellaneous Functions for 'ggplot2'

Version 0.1.3

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

Depends R (>= 4.1.0)

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| | |
|----------------|---|
| element_blinds | <i>this element is used to control the line color of panel.grid.major/minor.x or panel.grid.major/minor.y</i> |
|----------------|---|

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 | <i>geom_segment_c</i> |
|----------------|-----------------------|

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 use 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 | <i>geom_volpoint</i> |
|---------------|----------------------|

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 | <i>identify</i> |
|-------------|-----------------|

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 | <i>is.ggbreak</i> |
|------------|-------------------|

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 object |
|------|---------------|

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

| | |
|-----------------------|---------------|
| <code>p</code> | ggplot object |
| <code>family</code> | font fammily |
| <code>fontface</code> | font face |
| <code>size</code> | font size |
| <code>color</code> | 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 | <i>theme_nothing</i> |
|---------------|----------------------|

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 | <i>theme_noxaxis</i> |
|---------------|----------------------|

Description

A theme that only show y-axis

Usage

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

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

Arguments

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

Value

ggplot2 theme

Author(s)

Guangchuang Yu

| | |
|-----------------|------------------------|
| theme_no_margin | <i>theme_no_margin</i> |
|-----------------|------------------------|

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 | <i>the theme of blind-like alias of theme_blinds</i> |
|-------------|--|

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 | <i>theme_transparent</i> |
|-------------------|--------------------------|

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 | <i>volplot</i> |
|---------|----------------|

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

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