Package 'aplot'

June 17, 2024

Title Decorate a 'ggplot' with Associated Information

Version 0.2.3

Description For many times, we are not just aligning plots as what 'cowplot' and 'patchwork' did. Users would like to align associated information that requires axes to be exactly matched in subplots, e.g. hierarchical clustering with a heatmap. This package provides utilities to aligns associated subplots to a main plot at different sides (left, right, top and bottom) with axes exactly matched.

Depends R (>= 4.1.0)

Imports ggfun (>= 0.1.3), ggplot2, ggplotify, patchwork, magrittr, methods, utils

Suggests ggtree

URL <https://github.com/YuLab-SMU/aplot>, <https://yulab-smu.top/aplot/>

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Encoding UTF-8

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NeedsCompilation no

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Contents

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as.patchwork　　　　　　　　　*as.patchwork*

Description

as.patchwork

Usage

```
as.patchwork(x, align = getOption("aplot_align", default = "xy"))
```

Arguments

x   object

align   "x","y","xy","none", align the axis of x/y or not.

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gglist　　　　　　　　　　*construct a 'gglist' object*

Description

constructure a 'gglist' object that contains a list of plots ('gglist') and parameters (via '...'), the object can be displayed via the 'plot_list()' function.

Usage

```
gglist(gglist, ...)
```

Arguments

gglist   a list of plots

...   parameters for plotting the 'gglist'

Value

gglist object

Author(s)

Guangchuang Yu

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gglistGrob *This function converts 'gglist' object to grob (i.e. gtable object)*

Description

title gglistGrob

Usage

```
gglistGrob(x)
```

Arguments

x A 'gglist' object

Value

A 'gtable' object

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insert_left *plot-insertion*

Description

insert an associated plot to left, right, top and bottom of a main plot

Usage

```
insert_left(.data, plot, width = 1)

insert_right(.data, plot, width = 1)

insert_top(.data, plot, height = 1)

insert_bottom(.data, plot, height = 1)
```

Arguments

.data	an 'aplot' or 'gg' object
plot	a 'gg' plot to be inserted
width	relative width to the main plot
height	relative height to the main plot

Details

The first input serve as a main plot, and other plots can be progressively inserted to different sides on left, right, top and bottom.

Value

an 'aplot' object

Author(s)

Guangchuang Yu

Examples

```
library(ggplot2)
library(aplot)

p <- ggplot(mtcars, aes(mpg, disp)) + geom_point()
p2 <- ggplot(mtcars, aes(mpg)) +
    geom_density(fill='steelblue', alpha=.5) +
        ggfun::theme_noxaxis()
p3 <- ggplot(mtcars, aes(x=1, y=disp)) +
    geom_boxplot(fill='firebrick', alpha=.5) +
    theme_void()
ap <- p %>%
    insert_top(p2, height=.3) %>%
    insert_right(p3, width=.1)

ap
ap[2, 1] <- ap[2, 1] + theme_bw()
ap[2, 1] <- ap[2, 1] +
            aes(color = as.factor(am)) +
            scale_color_manual(values = c('steelblue', 'darkgreen'))
ap[1, 1] <- ap[1, 1] + theme(axis.line.x.bottom=element_line())
ap
```

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plot_list   *plot a list of ggplot objects*

Description

plot a list of ggplot objects using patchwork, similar to 'cowplot::plot_grid(plotlist)'

Usage

```
plot_list(
  ...,
  gglist = NULL,
  ncol = NULL,
```

```
    nrow = NULL,
    byrow = NULL,
    widths = NULL,
    heights = NULL,
    guides = NULL,
    labels = NULL,
    tag_levels = NULL,
    tag_size = 14,
    design = NULL,
    output = "patchwork"
)
```

Arguments

`...`	list of plots to be arranged
`gglist`	(optional) list of plots
`ncol`	number of columns
`nrow`	number of rows
`byrow`	If "FALSE" the plots will be filled in in column-major order
`widths`	relative widths
`heights`	relative heights
`guides`	A string specifying how guides should be treated in the layout.
`labels`	manual specified labels to label plots
`tag_levels`	format to label plots, will be disable if 'labels' is not NULL
`tag_size`	size of tags
`design`	specification of the location of areas in the layout
`output`	one of 'gglist' or 'patchwork'

Value

composite plot

Author(s)

Guangchuang Yu

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xlab2   *display x or y axis label as an ordinary text, so that the label will not
                                be aligned with axis label of another plot*

Description

display x or y axis label as an ordinary text, so that the label will not be aligned with axis label of
another plot

Usage

```
xlab2(label, fontsize = 11, ...)

ylab2(label, fontsize = 11, ...)
```

Arguments

label	axis label
fontsize	fontsize of the label
...	additional parameter passed to 'gpar'

Value

gg object with new label

Author(s)

Guangchuang Yu

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xlim2   *xlim2*

Description

set axis limits (x or y) of a 'ggplot' object (left hand side of '+') based on the x ('xlim2') or y
('ylim2') limits of another 'ggplot' object (right hand side of '+'). This is useful for using 'cowplot'
or 'patchwork' to align 'ggplot' objects.

Usage

```
xlim2(gg, limits = NULL)

ylim2(gg, limits = NULL)
```

Arguments

gg   ggplot object

limits   vector of limits. If NULL, determine from 'gg'.

Value

ggplot2 object with new limits

Author(s)

Guangchuang Yu

Examples

```
library(ggplot2)
library(aplot)
p1 <- ggplot(mtcars, aes(cyl)) + geom_bar()
p2 <- ggplot(subset(mtcars, cyl != 4), aes(cyl)) + geom_bar()
p2 + xlim2(p1)
```

Index