Package 'aplot'

October 6, 2023

Title Decorate a 'ggplot' with Associated Information

Version 0.2.2

Description For many times, we are not just aligning plots as what 'cowplot' and 'patch-work' 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>

License Artistic-2.0

Encoding UTF-8

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NeedsCompilation no

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R topics documented:

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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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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)
```

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