

Package ‘plotbb’

January 30, 2026

Title Grammar of Graphics for 'base' Plot

Version 0.1.1

Description A grammar of graphics framework built on 'base' graphics. It provides a 'bbplot' object and a '+' operator to incrementally compose plots from data, aesthetic mappings and layers, then render them using the base plotting system. The package includes common geometric layers (points, lines, segments, bars, histograms, boxplots and tiles), scales for color and other aesthetics, legends, faceting, themes, and significance annotations.

Imports graphics, magrittr, rlang, scales, methods, utils

Suggests stats, ape, aplot (>= 0.0.8), dplyr, ggplotify (>= 0.1.0),
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VignetteBuilder quarto

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Contents

as.bbplot	2
bbplot	3
bb_aes	4
bb_bar	4
bb_facet_wrap	6
bb_grid	6

bb_labs 7

bb_legend 8

bb_scale_col_palette 9

bb_scale_pch_manual 9

bb_theme 10

set_bb_theme 11

unset_bb_theme 12

Index 13

as.bbplot	as.bbplot
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Description

convert a base plot function to a bbplot object

Usage

as.bbplot(fun)

Arguments

fun a function that plot something in base graphics

Details

the base plot function will be plotted as a canvas and users can apply theme and add layers to it

Value

A bbplot object

Author(s)

Guangchuang Yu

bbplot	<i>bbplot</i>
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Description

bbplot

Usage

```
bbplot(data, mapping = bb_aes())
```

Arguments

data	data
mapping	variable mapping

Details

a proof of concept for grammar of graphics based on base plot. The bbplot class contains data (input data), mapping (aesthetic mapping), layer (a list of plot layers), theme (theme setting) and labs (label setting, including title, subtitle, x and y labels).

Value

bbplot object

Author(s)

Guangchuang Yu

Examples

```
library(plotbb)
p <- bbplot(mtcars, bb_aes(mpg, disp, col=factor(cyl)))
p + bb_grid(col='grey50', lty='dashed') + bb_point(pch=19)
```

bb_aes	bb_aes
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Description

aesthetic mapping

Usage

bb_aes(x, y, ...)

Arguments

- x x variable
- y y variable
- ... other mappings

Details

aesthetic mapping for bbplot

Value

enquo expression describing variables mapping to aesthetic attributes

Author(s)

Guangchuang Yu

bb_bar	bb_boxplot
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Description

- boxplot layer
- histogram layer
- layer
- significance layer

Usage

```
bb_bar(mapping = NULL, data = NULL, stat = "identity", width = 0.9, ...)

bb_boxplot(mapping = NULL, data = NULL, ...)

bb_errorbar(mapping = NULL, data = NULL, orientation = "y", width = 0.5, ...)

bb_hist(mapping = NULL, data = NULL, ...)

bb_line(mapping = NULL, data = NULL, ...)

bb_lm(mapping = NULL, data = NULL, ...)

bb_point(mapping = NULL, data = NULL, position = "identity", ...)

bb_segment(mapping = NULL, data = NULL, ...)

bb_signif(mapping = NULL, data = NULL, ...)

bb_text(mapping = NULL, data = NULL, ...)

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

Arguments

mapping	aesthetic mapping
data	layer data
stat	one of 'identity' or 'count'
width	bar width or errorbar cap width
...	addition parameter for the layer
orientation	one of 'y' or 'x'
position	one of 'identity' or 'jitter'

Details

bbplot layers

Value

A modified bbplot object
A modified bbplot object
A modified bbplot object
A modified bbplot object

Author(s)

Guangchuang Yu

Examples

```
library(plotbb)
p <- bbplot(mtcars, bb_aes(mpg, disp, col=factor(cyl))) +
  bb_point() + bb_lm(bb_aes(group=cyl), lwd=2)
```

bb_facet_wrap	<i>bb_facet_wrap</i>
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Description

Facet a bbplot object into multiple panels.

Usage

```
bb_facet_wrap(facets, ncol = NULL, nrow = NULL, scales = "fixed")
```

Arguments

- facets a formula specifying faceting variable, e.g. ~cyl.
- ncol number of columns.
- nrow number of rows.
- scales scale behavior across facets, one of 'fixed', 'free', 'free_x', or 'free_y'.

Value

A modified bbplot object

Author(s)

Guangchuang Yu

bb_grid	<i>bb_grid</i>
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Description

add grid lines

Usage

```
bb_grid(col = "lightgray", lty = par("lty"), lwd = par("lwd"), bg = TRUE)
```

Arguments

col	line color
lty	line type
lwd	line width
bg	whether plot the grid lines as background

Value

A modified bbplot object

Author(s)

Guangchuang Yu

bb_labs	<i>bb_labs</i>
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Description

change labels for bbplot

Usage

```
bb_labs(title = NULL, sub = NULL, xlab = NULL, ylab = NULL)
```

```
bb_title(title)
```

```
bb_sub(sub)
```

```
bb_xlab(xlab)
```

```
bb_ylab(ylab)
```

Arguments

title	title
sub	sub
xlab	xlab
ylab	ylab

Details

setting one or several of 'title', 'sub', 'xlab', and 'ylab'

Value

A modified bbplot object

Author(s)

Guangchuang Yu

Examples

```
library(plotbb)
p <- bbplot(mtcars, bb_aes(mpg, disp, col=factor(cyl))) + bb_point(pch=19)
p + bb_labs(title = "hello", sub = "just for demo",
            xlab="this is xlab", ylab = "this is ylab") +
  bb_title("hello world") # last one rules
```

bb_legend

bb_legend

Description

Add legend for aesthetic mapping.

Usage

```
bb_legend(
  position = "topright",
  title = NULL,
  aesthetic = "col",
  pch = 19,
  bty = "n",
  ...
)
```

Arguments

position	legend position passed to <code>graphics::legend</code> .
title	legend title.
aesthetic	currently only supports "col".
pch	point shape used in legend.
bty	box type passed to <code>graphics::legend</code> .
...	additional parameters passed to <code>graphics::legend</code> .

Value

A modified bbplot object

Author(s)

Guangchuang Yu

`bb_scale_col_palette` *bb_scale_col_palette*

Description

change col palette

Usage`bb_scale_col_palette(palette = NULL)``bb_scale_col_manual(values)``bb_scale_col_gradient(low = "#132B43", high = "#56B1F7")`**Arguments**

<code>palette</code>	color palette
<code>values</code>	colors for discrete scale.
<code>low</code>	low color for continuous scale.
<code>high</code>	high color for continuous scale.

Value

A modified bbplot object

Author(s)

Guangchuang Yu

`bb_scale_pch_manual` *aesthetic scales*

Description

aesthetic scales

Usage

```

bb_scale_pch_manual(values)

bb_scale_lty_manual(values)

bb_scale_cex_manual(values)

bb_scale_cex_continuous(range = c(0.8, 1.6))

```

Arguments

values	values used for mapping.
range	numeric length-2 range for continuous mapping.

Value

A modified bbplot object

Author(s)

Guangchuang Yu

bb_theme

bb_theme

Description

bbplot theme

Usage

```

bb_theme(...)

bb_theme_expand(...)

bb_theme_grey(...)

bb_theme_deepblue(...)

bb_theme_bw(...)

bb_theme_minimal(...)

```

Arguments

...	parameters for graphics::par
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Details

setting visual details of bbplot

Value

A modified bbplot object

Author(s)

Guangchuang Yu

set_bb_theme	<i>set_bb_theme</i>
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Description

set bb_theme

Usage

```
set_bb_theme(theme)
```

Arguments

theme	bb_theme
-------	----------

Details

setting bb_theme for ordinary base plot command. It internally use par to set global graphic parameters. Users need to explicitly call unset_bb_theme() to restore original setting.

Value

setting selected theme as default (has side effect and will affect other base plot)

Author(s)

Guangchuang Yu

Examples

```
library(plotbb)
set_bb_theme(bb_theme_deepblue)
bbplot(mtcars, bb_aes(mpg, disp, col=factor(cyl))) + bb_point(pch=19)
```

unset_bb_theme	<i>unset_bb_theme</i>
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Description

unset bb_theme

Usage

```
unset_bb_theme()
```

Details

remove all the themes by set_bb_theme

Value

unset theme (i.e., restore par setting)

Author(s)

Guangchuang Yu

Index

`as.bbplot`, [2](#)

`bb_aes`, [4](#)
`bb_bar`, [4](#)
`bb_boxplot` (`bb_bar`), [4](#)
`bb_errorbar` (`bb_bar`), [4](#)
`bb_facet_wrap`, [6](#)
`bb_grid`, [6](#)
`bb_hist` (`bb_bar`), [4](#)
`bb_labs`, [7](#)
`bb_legend`, [8](#)
`bb_line` (`bb_bar`), [4](#)
`bb_lm` (`bb_bar`), [4](#)
`bb_point` (`bb_bar`), [4](#)
`bb_scale_cex_continuous`
 (`bb_scale_pch_manual`), [9](#)
`bb_scale_cex_manual`
 (`bb_scale_pch_manual`), [9](#)
`bb_scale_col_gradient`
 (`bb_scale_col_palette`), [9](#)
`bb_scale_col_manual`
 (`bb_scale_col_palette`), [9](#)
`bb_scale_col_palette`, [9](#)
`bb_scale_lty_manual`
 (`bb_scale_pch_manual`), [9](#)
`bb_scale_pch_manual`, [9](#)
`bb_segment` (`bb_bar`), [4](#)
`bb_signif` (`bb_bar`), [4](#)
`bb_sub` (`bb_labs`), [7](#)
`bb_text` (`bb_bar`), [4](#)
`bb_theme`, [10](#)
`bb_theme_bw` (`bb_theme`), [10](#)
`bb_theme_deepblue` (`bb_theme`), [10](#)
`bb_theme_expand` (`bb_theme`), [10](#)
`bb_theme_grey` (`bb_theme`), [10](#)
`bb_theme_minimal` (`bb_theme`), [10](#)
`bb_tile` (`bb_bar`), [4](#)
`bb_title` (`bb_labs`), [7](#)
`bb_xlab` (`bb_labs`), [7](#)
`bb_ylab` (`bb_labs`), [7](#)

`bbplot`, [3](#)

`set_bb_theme`, [11](#)

`unset_bb_theme`, [12](#)