

Package ‘plotbb’

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Title Grammar of Graphics for 'base' Plot

Version 0.1.0

Description

Proof of concept for implementing grammar of graphics using base plot. The `bbplot()` function initializes a 'bbplot' object to store input data, aesthetic mapping, a list of layers and theme elements. The object will be rendered as a graphic using base plot command if it is printed.

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

Suggests stats, ape, aplot ($\geq 0.0.8$), dplyr, ggplotify ($\geq 0.1.0$),
quarto

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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	bbplot
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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	<i>bb_aes</i>
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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	<i>layer</i>
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Description

layer

Usage

```
bb_bar(mapping = NULL, data = NULL, stat = "identity", width = 0.9, ...)
bb_errorbar(mapping = NULL, data = NULL, orientation = "y", width = 0.5, ...)
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_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

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*bb_facet_wrap*

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

bb_grid

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*bb_labs*

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

palette	color palette
values	colors for discrete scale.
low	low color for continuous scale.
high	high color for continuous scale.

Value

A modified `bbplot` object

Author(s)

Guangchuang Yu

bb_scale_pch_manual	<i>aesthetic scales</i>
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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	<i>bb_theme</i>
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Description

bbplot theme

Usage

```
bb_theme(...)

bb_theme_expand(...)

bb_theme_grey(...)

bb_theme_deepblue(...)
```

Arguments

... parameters for graphics::par

Details

setting visual details of bbplot

Value

A modified bbplot object

Author(s)

Guangchuang Yu

set_bb_theme

set_bb_theme

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

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