Package ‘ggthemes’
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   Provides ‘ggplot2’ themes and scales that replicate the look of plots
   Provides ‘geoms’ for Tufte's box plot and range frame.
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bank_slopes Bank Slopes to 45 degrees

Description

Calculate the optimal aspect ratio of a line graph by banking the slopes to 45 degrees as suggested by W.S. Cleveland. This maximizes the ability to visually differentiate differences in slope. This function will calculate the optimal aspect ratio for a line plot using any of the methods described in Herr and Argwala (2006). In their review of the methods they suggest using median absolute slope banking (‘ms’), which produces aspect ratios which are generally the median of the various methods provided here.

...
Usage

bank_slopes(x, y, cull = FALSE, weight = NULL, method = c("ms", "as"), ...) 

Arguments

x x values
y y values
cull logical. Remove all slopes of 0 or Inf.
method One of 'ms' (Median Absolute Slope) or 'as' (Average Absolute Slope). Other options are no longer supported, and will use 'ms' instead with a warning.
...

Value
	numeric The aspect ratio (x, y).

Methods

As written, all of these methods calculate the aspect ratio (x/y), but bank_slopes will return (y/x) to be compatible with link[ggplot2]{coord_fixed()}. 

Median Absolute Slopes Banking
Let the aspect ratio be \( \alpha = \frac{w}{h} \) then the median absolute slope banking is the \( \alpha \) such that,

\[
\text{median} \left| \frac{s_i}{\alpha} \right| = 1
\]

Let \( R_z = z_{\text{max}} - z_{\text{min}} \) for \( z = x, y \), and \( M = \text{median} \left| s_i \right| \). Then,

\[
\alpha = M \frac{R_x}{R_y}
\]

Average Absolute Slope Banking
Let the aspect ratio be \( \alpha = \frac{w}{h} \) then the mean absolute slope banking is the \( \alpha \) such that,

\[
\text{mean} \left| \frac{s_i}{\alpha} \right| = 1
\]

Heer and Agrawala (2006) and Cleveland discuss several other methods including average (weighted) orientation, and global and local orientation resolution. These are no longer implemented in this function. In general, either the median or average absolute slopes will produce reasonable results without requiring optimization.

References


calc_pal

Description

Color palettes from LibreOffice Calc. This palette has 12 values.

Usage

calc_pal()

See Also

Other colour calc: scale_fill_calc

Examples

library("scales")

show_col(calc_pal()(12))
calc_shape_pal  \hspace{1em} \textit{Calc shape palette (discrete)}

\section*{Description}
Shape palette based on the shapes used in LibreOffice Calc.

\section*{Usage}
calc_shape_pal()

\section*{See Also}
Other shapes calc: \texttt{scale_shape_calc}

\section*{Examples}
library("ggplot2")

\begin{verbatim}
## Not run:
show_shapes(calc_shape_pal()(13))
## End(Not run)
\end{verbatim}

\section*{canva_pal  \hspace{1em} \textit{Canva.com color palettes}}

\section*{Description}
150+ color palettes from canva.com. See \texttt{canva_palettes()}.

\section*{Usage}
canva_pal(palette = "Fresh and bright")

\section*{Arguments}
\begin{itemize}
  \item \texttt{palette} \hspace{1em} Palette name. See the names of \texttt{canva_palettes()} for valid names.
\end{itemize}

\section*{Value}
A function that takes a single value, the number of colors to use.
**Examples**

```r
require("ggplot2")
require("purrr")
require("tibble")
require("scales")
require("dplyr")
canva_df <- map2_df(canva_palettes, names(canva_palettes),
                    ~ tibble(colors = .x, .id = seq_along(colors),
                             palette = .y))
ggplot(canva_df, aes(y = palette, x = .id, fill = colors)) +
    geom_raster() +
    scale_fill_identity(guide = FALSE) +
    theme_minimal() +
    theme(panel.grid = element_blank(),
          axis.text.x = element_blank()) +
    labs(x = "", y = "")
show_col(canva_pal("Fresh and bright")(4))
show_col(canva_pal("Cool blues")(4))
show_col(canva_pal("Modern and crisp")(4))
```

---

**canva_palettes**  
**150 Color Palettes from Canva**

**Description**

150 four-color palettes by the canva.com design school. These palettes were derived from photos and "impactful websites".

**Usage**

canva_palettes

**Format**

A named list of character vector. The names are the palette names. The values of the character vectors are hex colors, e.g. "#f98866".

**Source**


**References**

- Janie Kliever, 100 Brilliant Color Combinations and How to Apply Them to Your Designs, Canva.com, June 20, 2015.
Examples

```r
require("ggplot2")
require("purrr")
require("tibble")
require("scales")
require("dplyr")
canva_df <- map2_df(canva_palettes, names(canva_palettes),
  ~ tibble(colors = .x, .id = seq_along(colors),
  palette = .y))
ggplot(canva_df, aes(y = palette, x = .id, fill = colors)) +
  geom_raster() +
  scale_fill_identity(guide = FALSE) +
  theme_minimal() +
  theme(panel.grid = element_blank(),
  axis.text.x = element_blank()) +
  labs(x = "", y = "")
show_col(canva_pal("Fresh and bright")())
show_col(canva_pal("Cool blues")())
show_col(canva_pal("Modern and crisp")())
```

circlefill_shape_pal  Filled Circle Shape palette (discrete)

Description

Shape palette with circles varying by amount of fill. This uses the set of 3 circle fill values in Lewandowsky and Spence (1989): solid, hollow, half-filled, with two additional fill amounts: three-quarters, and one-quarter.

Usage

circlefill_shape_pal()

Details

This palette supports up to five values.

References


See Also

Other shapes: cleveland_shape_pal, scale_shape_circlefill, scale_shape_cleveland, scale_shape_tremmel, tremmel_shape_pal
Examples

```r
library("ggplot2")

p <- ggplot(mtcars, aes(x = mpg, y = hp, shape = factor(cyl))) +
  geom_point()

p + scale_shape_tremmel()

p + scale_shape_circlefill()

p + scale_shape_cleveland()

p + scale_shape_cleveland(overlap = TRUE)
```

---

cleveland_shape_pal  
Shape palette from Cleveland "Elements of Graphing Data" (discrete).

Description

Shape palettes for overlapping and non-overlapping points.

Usage

cleveland_shape_pal(overlap = TRUE)

Arguments

- `overlap`  
  logical: Use the scale for overlapping points?

Note

In the *Elements of Graphing Data*, W.S. Cleveland suggests two shape palettes for scatter plots: one for overlapping data and another for non-overlapping data. The symbols for overlapping data rely on pattern discrimination, while the symbols for non-overlapping data vary the amount of fill. This palette attempts to create these palettes. However, I found that these were hard to replicate. Using the R shapes and unicode fonts: the symbols can vary in size, they are dependent of the fonts used, and there does not exist a unicode symbol for a circle with a vertical line. If someone can improve this palette, please let me know.

Following Tremmel (1995), I replace the circle with a vertical line with an encircled plus sign. The palette `cleveland_shape_pal()` supports up to five values.

References


See Also

Other shapes: `circlefill_shape_pal`, `scale_shape_circlefill`, `scale_shape_cleveland`, `scale_shape_tremmel`, `tremmel_shape_pal`
**Examples**

```r
### (discrete).

library("ggplot2")
p <- ggplot(mtcars) + geom_point(aes(x = wt, y = mpg, shape = factor(gear))) + facet_wrap(~am) + theme_bw()
# overlapping symbol palette
p + scale_shape_cleveland()
# non-overlapping symbol palette
p + scale_shape_cleveland(overlap = FALSE)
```

---

**colorblind_pal**  
*Colorblind Color Palette (Discrete) and Scales*

**Description**

An eight-color colorblind safe qualitative discrete palette.

**Usage**

```r
colorblind_pal()
scale_colour_colorblind(...)  
scale_color_colorblind(...)  
scale_fill_colorblind(...)```

**Arguments**

...   
Arguments passed on to discrete_scale

- **palette** A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
- **breaks** One of:
  - NULL for no breaks
  - waiver() for the default breaks computed by the transformation object
  - A character vector of breaks
  - A function that takes the limits as input and returns breaks as output
- **limits** A character vector that defines possible values of the scale and their order.
- **drop** Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.
- **na.translate** Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.
- **na.value** If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.
scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as breaks)
  • A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

References

Chang, W. "Cookbook for R"

http://jfly.iam.u-tokyo.ac.jp/color

See Also

The dichromat package, dichromat_pal(), and scale_color_tableau() for other colorblind palettes.

Examples

library("ggplot2")
library("scales")

show_col(colorblind_pal()(8))
p <- ggplot(mtcars) + geom_point(aes(x = wt, y = mpg, colour = factor(gear))) + facet_wrap(~am)
p + theme_igray() + scale_colour_colorblind()

economist_pal Economist color palette (discrete)

Description

The hues in the palette are blues, grays, and greens. Red is not included in these palettes and should be used to indicate important data.
# excel_new_pal

## Usage

```r
economist_pal(fill = TRUE)
```

## Arguments

- `fill` Use the fill palette.

## See Also

Other colour economist: `scale_colour_economist`

## Examples

```r
library("scales")

ggthemes::ggthemes_data$excel$palettes

for (i in names(ggthemes::ggthemes_data$excel$palettes)) {
  show_col(excel_new_pal(theme = i))(6)
}
```

---

## Description

Color palettes used by current versions of Microsoft Office and Excel.

## Usage

```r
excel_new_pal(theme = "Office Theme")
```

## Arguments


## See Also

Other colour excel: `excel_pal, scale_colour_economist_new, scale_fill_excel`

## Examples

```r
library("scales")

for (i in names(ggthemes::ggthemes_data$excel$palettes)) {
  show_col(excel_new_pal(theme = i))(6)
}
```
**excel_pal**

Excel 97 ugly color palettes (discrete)

**Description**

The color palettes used in Microsoft Excel 97 (and up until Excel 2007). Use this for that classic ugly look and feel. For ironic purposes only. 3D bars and pies not included. Please never use this color palette.

**Usage**

```r
exc Đức_ pal(line = TRUE)
```

**Arguments**

`line` If TRUE, use the palette for lines and points. Otherwise, use the palette for area.

**See Also**

Other colour excel: `excel_new_pal`, `scale_colour_excel_new`, `scale_fill_excel`

**Examples**

```r
library("scales")

show_col(excel_pal()7))
show_col(excel_pal(line = FALSE)(7))
```

---

**extended_range_breaks**

Pretty axis breaks inclusive of extreme values

**Description**

This function returns pretty axis breaks that always include the extreme values of the data. This works by calling the extended Wilkinson algorithm (Talbot et. al, 2010), constrained to solutions interior to the data range. Then, the minimum and maximum labels are moved to the minimum and maximum of the data range.

**Usage**

```r
extended_range_breaks_(dmin, dmax, n = 5, Q = c(1, 5, 2, 2.5, 4, 3),
    w = c(0.25, 0.2, 0.5, 0.05))
extended_range_breaks(n = 5, ...)
```
Arguments

dmin  minimum of the data range
dmax  maximum of the data range
n     desired number of breaks
Q     set of nice numbers
w     weights applied to the four optimization components (simplicity, coverage, density, and legibility)
...  other arguments passed to extended_range_breaks()

Details

extended_range_breaks implements the algorithm and returns the break values. scales_extended_range_breaks uses the conventions of the scales package, and returns a function.

Value

For extended_range_breaks, the vector of axis label locations. For scales_extended_range_breaks, a function which takes a single argument, a vector of data, and returns the vector of axis label locations.

A function which returns breaks given a vector.

Author(s)

Justin Talbot <jtalbot@stanford.edu>, Jeffrey B. Arnold, Baptiste Auguie

References


---

**few_pal**  
*Color Palettes Few "Show Me the Numbers"*

Description

Qualitative color palettes from Stephen Few (2012) *Show Me the Numbers*. There are three palettes: Light, Medium, and Dark. Each palette comprises nine colors: gray, blue, orange, green, pink, brown, purple, yellow, red. For \( n = 1 \), gray is used. For \( n > 1 \), the eight non-gray colors are used.

Usage

`few_pal(palette = "Medium")`

Arguments

`palette` One of

Details

Use the light palette for filled areas, such as bar charts. Use the medium palette for points and lines. Use the dark palette for highlighting specific points or for small and thin lines and points.
few_shape_pal

References


"Practical Rules for Using Color in Charts".

See Also

Other colour few: `scale_colour_few`

Examples

```r
library("scales")

show_col(few_pal()$(7))
show_col(few_pal("Dark")$(7))
show_col(few_pal("Light")$(7))
```

Usage

`few_shape_pal()`

References


fivethirtyeight_pal

*fivethirtyeight.com* color palette

Description

The standard three-color fivethirtyeight.com palette for line plots comprises blue, red, and green.

Usage

`fivethirtyeight_pal()`

See Also

Other colour fivethirtyeight: `scale_colour_fivethirtyeight`
Examples

```r
library("scales")
show_col(fivethirtyeight_pal()(3))
```

---

**gdocs_pal**

Google Docs color palette (discrete)

Description

Color palettes from Google Docs. This palette includes 20 colors.

Usage

```r
gdocs_pal()
```

See Also

Other colour gdocs: `scale_fill_gdocs`

Examples

```r
library("scales")
show_col(gdocs_pal()(20))
```

---

**geom_rangeframe**

Range Frames

Description

Axis lines which extend to the maximum and minimum of the plotted data.

Usage

```r
geom_rangeframe(mapping = NULL, data = NULL, stat = "identity",
position = "identity", ..., sides = "bl", na.rm = FALSE,
show.legend = NA, inherit.aes = TRUE)
```

Arguments

- **mapping**
  Set of aesthetic mappings created by `aes()` or `aes_()`. If specified and `inherit.aes = TRUE` (the default), it is combined with the default mapping at the top level of the plot. You must supply `mapping` if there is no plot mapping.
The data to be displayed in this layer. There are three options:
    If NULL, the default, the data is inherited from the plot data as specified in the
    call to `ggplot()`.
    A data.frame, or other object, will override the plot data. All objects will be
    fortified to produce a data frame. See `fortify()` for which variables will be
    created.
    A function will be called with a single argument, the plot data. The return
    value must be a data.frame, and will be used as the layer data.

Position adjustment, either as a string, or the result of a call to a position adjust-
ment function.

Other arguments passed on to `layer()`. These are often aesthetics, used to set
an aesthetic to a fixed value, like `colour = "red"` or `size = 3`. They may also
be parameters to the paired geom/stat.

A string that controls which sides of the plot the frames appear on. It can be set
to a string containing any of `"trbl"`, for top, right, bottom, and left.

If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.

Logical. Should this layer be included in the legends? NA, the default, includes if
any aesthetics are mapped. FALSE never includes, and TRUE always includes. It
can also be a named logical vector to finely select the aesthetics to display.

If FALSE, overrides the default aesthetics, rather than combining with them.
This is most useful for helper functions that define both data and aesthetics and
shouldn’t inherit behaviour from the default plot specification, e.g. `borders()`.

Aesthetics

- colour
- size
- linetype
- alpha

References


See Also

Other geom tufte: `geom_tufteboxplot`

Examples

```r
library("ggplot2")

ggplot(mtcars, aes(wt, mpg)) +
  geom_point() +
  geom_rangeframe() +
  theme_tufte()
```
### geom_tufteboxplot

**Tufte’s Box Plot**

**Description**

Edward Tufte’s revisions of the box plot as described in *The Visual Display of Quantitative Information*. This function provides several box plot variants:

- A point indicating the median, a gap indicating the interquartile range, and lines for whiskers.
- An offset line indicating the interquartile range and a gap indicating the median.
- A line indicating the interquartile range, a gap indicating the median, and points indicating the minimum and maximum values
- A wide line indicating the interquartile range, a gap indicating the median, and lines indicating the minimum and maximum.

**Usage**

```r
geom_tufteboxplot(mapping = NULL, data = NULL, stat = "fivenumber", position = "dodge", outlier.colour = "black", outlier.shape = 19, outlier.size = 1.5, outlier.stroke = 0.5, voffset = 0.01, hoffset = 0.005, na.rm = FALSE, show.legend = NA, inherit.aes = TRUE, median.type = "point", whisker.type = "line", ...)
```

**Arguments**

- `mapping` Set of aesthetic mappings created by `aes()` or `aes_()`. If specified and `inherit.aes = TRUE` (the default), it is combined with the default mapping at the top level of the plot. You must supply `mapping` if there is no plot mapping.

- `data` The data to be displayed in this layer. There are three options:
  - If `NULL`, the default, the data is inherited from the plot data as specified in the call to `ggplot()`.
  - A `data.frame`, or other object, will override the plot data. All objects will be fortified to produce a data frame. See `fortify()` for which variables will be created.
  - A function will be called with a single argument, the plot data. The return value must be a `data.frame`, and will be used as the layer data.

- `stat` The statistical transformation to use on the data for this layer, as a string.

- `position` Position adjustment, either as a string, or the result of a call to a position adjustment function.

- `outlier.colour` colour for outlying points

- `outlier.shape` shape of outlying points

- `outlier.size` size of outlying points

- `outlier.stroke` stroke for outlying points

- `voffset` controls the size of the gap in the line representing the median when `median.type = 'line'`. This is a fraction of the range of y.
controls how much the interquartile line is offset from the whiskers when `median.type = 'line'`. This is a fraction of the range of x.

If FALSE, the default, missing values are removed with a warning. If TRUE, missing values are silently removed.

logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.

If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn’t inherit behaviour from the default plot specification, e.g. `borders()`.

If 'point', then the median is represented by a point, and the interquartile range by a gap in the line. If `median.type='line'`, then the interquartile range is represented by a line, possibly offset, and the median by a gap in the line.

If 'line', then whiskers are represented by lines. If 'point', then whiskers are represented by points at ymin and ymax.

Other arguments passed on to `layer()`. These are often aesthetics, used to set an aesthetic to a fixed value, like `colour = "red"` or `size = 3`. They may also be parameters to the paired geom/stat.

Aesthetics

- x [required]
- y [required]
- colour
- size
- linetype
- shape
- fill
- alpha

References


See Also

- `geom_boxplot()`

Other geom tuftes: `geom_rangeframe`

Examples

```r
library("ggplot2")
p <- ggplot(mtcars, aes(factor(cyl), mpg))
# with a point for the median and lines for whiskers
p + geom_tufteboxplot()
# with a line for the interquartile range and points for whiskers
```
p + geom_tufteboxplot(median.type = "line", whisker.type = "point", hoffset = 0)  
# with a wide line for the interquartile range and lines for whiskers  
p + geom_tufteboxplot(median.type = "line", hoffset = 0, width = 3)  
# with an offset line for the interquartile range and lines for whiskers  
p + geom_tufteboxplot(median.type = "line")  
# combined with theme_tufte  
p + geom_tufteboxplot() +  
  theme_tufte() +  
  theme(axis.ticks.x = element_blank())

### ggthemes

**Description**

This package contains extra themes, scales, and geoms, and functions for and related to [ggplot2](https://jrnold.github.io/ggthemes/). See [https://jrnold.github.io/ggthemes/](https://jrnold.github.io/ggthemes/) for documentation.

### ggthemes_data

**Palette and theme data**

**Description**

The `ggthemes` environment contains various values used in themes and palettes. This is undocumented and subject to change.

**Usage**

`ggthemes_data`

**Format**

A list object.

### hc_pal

**Highcharts JS color palette (discrete)**

**Description**

The Highcharts JS uses many different color palettes in its plots. This collects a few of them.

**Usage**

`hc_pal(palette = "default")`

**Arguments**

- `palette` character The name of the Highcharts theme to use.
Palettes

The following palettes are defined,

- default
- dark-unica

See Also

Other colour hc: `scale_colour_hc`

description

The *pander* ships with a default colorblind and printer-friendly color palette borrowed from [http://jfly.iam.u-tokyo.ac.jp/color/](http://jfly.iam.u-tokyo.ac.jp/color/).

Usage

```r
palette_pander(n, random_order = FALSE)
```

Arguments

- `n` number of colors. This palette supports up to eight colors.
- `random_order` if the palette should be reordered randomly before rendering each plot to get colorful images

See Also

Other colour pander: `scale_color_pander`

Examples

```r
## Not run:
palette_pander(TRUE)
## End(Not run)
```
# ptol_pal

## Description

Qualitative color palettes from Paul Tol, "Colour Schemes".

## Usage

```r
ptol_pal()
```

## Details

Incorporation of the palette into an R package was originally inspired by Peter Carl’s [Paul Tol 21 Gun Salute](https://tradeblotter.wordpress.com/2013/02/28/the-paul-tol-21-color-salute/)

## References


## See Also

Other colour ptol: `scale_colour_ptol`

## Examples

```r
library("scales")
show_col(ptol_pal()(6))
show_col(ptol_pal()(4))
show_col(ptol_pal()(12))
```

---

# scale_color_pander

## Description

The `pander` ships with a default colorblind and printer-friendly color palette borrowed from [http://jfly.iam.u-tokyo.ac.jp/color/](http://jfly.iam.u-tokyo.ac.jp/color/).

## Usage

```r
scale_color_pander(...) scale_colour_pander(...) scale_fill_pander(...)
```
Arguments

Arguments passed on to `discrete_scale`

**palette** A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

**breaks** One of:
- `NULL` for no breaks
- `waiver()` for the default breaks computed by the transformation object
- A character vector of breaks
- A function that takes the limits as input and returns breaks as output

**limits** A character vector that defines possible values of the scale and their order.

**drop** Should unused factor levels be omitted from the scale? The default, `TRUE`, uses the levels that appear in the data; `FALSE` uses all the levels in the factor.

**na.translate** Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.

**na.value** If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where `NA` is always placed at the far right.

**scale_name** The name of the scale

**name** The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If `NULL`, the legend title will be omitted.

**labels** One of:
- `NULL` for no labels
- `waiver()` for the default labels computed by the transformation object
- A character vector giving labels (must be same length as `breaks`)
- A function that takes the breaks as input and returns labels as output

**expand** Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function `expand_scale()` to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

**guide** A function used to create a guide or its name. See `guides()` for more info.

**position** The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

**super** The super class to use for the constructed scale

See Also

`theme_pander()`

Other colour pander: `palette_pander`
**scale_colour_canva**  
*Discrete color scale using canva.com color palettes*

**Description**  
Color scale for canva.com color palettes described in `canva_palettes()`.

**Usage**  
```r  
scale_colour_canva(..., palette = "Fresh and bright")  
scale_color_canva(..., palette = "Fresh and bright")  
scale_fill_canva(..., palette = "Fresh and bright")  
```

**Arguments**  
- `...` Arguments passed to `discrete_scale()`.  
- `palette` Palette name. See the names of `canva_palettes()` for valid names.

**scale_colour_economist**  
*Economist color scales*

**Description**  
Color scales using the colors in the Economist graphics.

**Usage**  
```r  
scale_colour_economist(...)  
scale_color_economist(...)  
scale_fill_economist(...)  
```

**Arguments**  
- `...` Arguments passed on to `discrete_scale`  
- `palette` A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.  
- `breaks` One of:  
  - `NULL` for no breaks  
  - `waiver()` for the default breaks computed by the transformation object  
  - A character vector of breaks  
  - A function that takes the limits as input and returns breaks as output  
- `limits` A character vector that defines possible values of the scale and their order.
drop  Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate  Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value  If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name  The name of the scale

name  The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels  One of:
- NULL for no labels
- waiver() for the default labels computed by the transformation object
- A character vector giving labels (must be same length as breaks)
- A function that takes the breaks as input and returns labels as output

expand  Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide  A function used to create a guide or its name. See guides() for more info.

position  The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super  The super class to use for the constructed scale

See Also

theme_economist() for examples.

Other colour economist: economist_pal

---

scale_colour_excel_new

Excel (current versions) color scales

Description

Discrete color scales used in current versions of Microsoft Office and Excel.

Usage

scale_colour_excel_new(theme = "Office Theme", ...)

scale_color_excel_new(theme = "Office Theme", ...)

scale_fill_excel_new(theme = "Office Theme", ...)
Arguments


Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
- NULL for no breaks
- waiver() for the default breaks computed by the transformation object
- A character vector of breaks
- A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
- NULL for no labels
- waiver() for the default labels computed by the transformation object
- A character vector giving labels (must be same length as breaks)
- A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale
scale_colour_few

See Also

Other colour excel: excel_new_pal, excel_pal, scale_fill_excel

Examples

library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am)

p + theme_excel_new() + scale_colour_excel_new()

scale_colour_few

Color scales from Few’s "Practical Rules for Using Color in Charts"

Description

See few_pal().

Usage

scale_colour_few(palette = "Medium", ...)

scale_color_few(palette = "Medium", ...)

scale_fill_few(palette = "Light", ...)

Arguments

palette One of

... Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the
  number of levels in the scale) returns the values that they should take.

breaks One of:

  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their or-

drop Should unused factor levels be omitted from the scale? The default, TRUE,
  uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing
  values, and do so by default. If you want to remove missing values from a
  discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing
  be displayed as? Does not apply to position scales where NA is always
  placed at the far right.

scale_name The name of the scale
name  The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If `NULL`, the legend title will be omitted.

labels  One of:
- `NULL` for no labels
- `waiver()` for the default labels computed by the transformation object
- A character vector giving labels (must be same length as `breaks`)
- A function that takes the breaks as input and returns labels as output

expand  Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function `expand_scale()` to generate the values for the `expand` argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide  A function used to create a guide or its name. See `guides()` for more info.

position  The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super  The super class to use for the constructed scale

See Also
Other colour few: `few_pal`

---

**scale_colour_fivethirtyeight**

*fivethirtyeight.com color scales*

**Description**
Color scales using the colors in the fivethirtyeight graphics.

**Usage**

```r
scale_colour_fivethirtyeight(...)  
scale_color_fivethirtyeight(...)  
scale_fill_fivethirtyeight(...)  
```

**Arguments**

```r
...
```

- **palette**  A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
- **breaks**  One of:
  - `NULL` for no breaks
  - `waiver()` for the default breaks computed by the transformation object
  - A character vector of breaks
• A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
• NULL for no labels
• waiver() for the default labels computed by the transformation object
• A character vector giving labels (must be same length as breaks)
• A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

See Also

theme_fivethirtyeight() for examples.

Other colour fivethirtyeight: fivethirtyeight_pal

scale_colour_gradient2_tableau

Tableau diverging colour scales (continuous)

Description

Tableau diverging colour scales (continuous)
scale_colour_gradient2_tableau

Usage

scale_colour_gradient2_tableau(palette = "Orange-Blue Diverging", ..., 
   na.value = "grey50", guide = "colourbar")

tableau_fill_gradient2_tableau(palette = "Orange-Blue Diverging", ..., 
   na.value = "grey50", guide = "colourbar")

tableau_color_gradient2_tableau(palette = "Orange-Blue Diverging", ..., 
   na.value = "grey50", guide = "colourbar")

Arguments

- **palette**  
  Palette name.
  ...

- **na.value**  
  Colour to use for missing values

- **guide**  
  Type of legend. Use 'colourbar' for continuous colour bar, or 'legend' for discrete colour legend.

See Also

Other colour tableau: scale_colour_gradient_tableau, scale_colour_tableau, tableau_color_pal, tableau_gradient_pal

Examples

library("ggplot2")

df <- data.frame(
   x = runif(100),
   y = runif(100),
   z1 = rnorm(100),
   z2 = abs(rnorm(100))
)
p <- ggplot(df, aes(x, y)) + geom_point(aes(colour = z2))

palettes <-
scale_colour_gradient_tableau

Tableau sequential colour scale (continuous)

Description

Tableau sequential colour scale (continuous)

Usage

scale_colour_gradient_tableau(palette = "Blue", ..., na.value = "grey50", guide = "colourbar")

scale_fill_gradient_tableau(palette = "Blue", ..., na.value = "grey50", guide = "colourbar")

scale_color_gradient_tableau(palette = "Blue", ..., na.value = "grey50", guide = "colourbar")

scale_color_continuous_tableau(palette = "Blue", ..., na.value = "grey50", guide = "colourbar")

scale_fill_continuous_tableau(palette = "Blue", ..., na.value = "grey50", guide = "colourbar")

Arguments

palette  Palette name.
  ...  Arguments passed to tableau_gradient_pal.
scale_colour_hc

na.value Colour to use for missing values
guide Type of legend. Use ‘colourbar’ for continuous colour bar, or ‘legend’ for discrete colour legend.

See Also
Other colour tableau: scale_colour_gradient2_tableau, scale_colour_tableau, tableau_color_pal, tableau_gradient_pal

Examples

library("ggplot2")

df <- data.frame(
  x = runif(100),
  y = runif(100),
  z1 = rnorm(100),
  z2 = abs(rnorm(100))
)

p <- ggplot(df, aes(x, y)) +
  geom_point(aes(colour = z2)) +
  theme_igray()

palettes <-
  ggtthemes_data[["tableau"]][["color-palettes"]][["ordered-sequential"]]
for (palette in head(names(palettes))) {
  print(p + scale_colour_gradient_tableau(palette) +
        ggtitle(palette))
}

scale_colour_hc Highcharts color and fill scales

Description
Colour and fill scales which use the palettes in hc_pal() and are meant for use with theme_hc().

Usage
scale_colour_hc(palette = "default", ...)

scale_color_hc(palette = "default", ...)

scale_fill_hc(palette = "default", ...)

Arguments

palette character The name of the Highcharts theme to use.
...

Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
breaks One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as breaks)
  • A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

See Also

Other colour hc: hc_pal

scale_colour_ptol

Color Scales from Paul Tol’s “Colour Schemes

Description

See ptol_pal(). These palettes support up to 12 values.
scale_colour_ptol

Usage

scale_colour_ptol(...)

scale_color_ptol(...)

scale_fill_ptol(...)

Arguments

... Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as breaks)
  • A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale
scale_colour_stata

See Also
Other colour ptol: ptol_pal

Examples
library("ggplot2")
p2 <- ggplot(mtcars, aes(x = wt, y = mpg, colour = factor(gear))) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE) +
  scale_color_ptol("cyl") +
  theme_minimal() +
ggtitle("Cars")
ggplot(diamonds, aes(x = clarity, fill = cut)) +
  geom_bar() +
  scale_fill_ptol() +
  theme_minimal()

scale_colour_stata  Stata color scales

Description
See stata_pal() for details.

Usage

  scale_colour_stata(scheme = "s2color", ...)
  scale_fill_stata(scheme = "s2color", ...)
  scale_color_stata(scheme = "s2color", ...)

Arguments

scheme  character. One of "s2color", "s1rcolor", "s1color", or "mono".
...  Arguments passed on to discrete_scale

breaks  One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits  A character vector that defines possible values of the scale and their order.

drop  Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.
na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
• NULL for no labels
• waiver() for the default labels computed by the transformation object
• A character vector giving labels (must be same length as breaks)
• A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

scale_colour_tableau Tableau color scales

Description
Categorical color scales from Tableau.

Usage
scale_colour_tableau(palette = "Tableau 10", ...)
scale_fill_tableau(palette = "Tableau 10", ...)
scale_color_tableau(palette = "Tableau 10", ...)

Arguments
palette Palette name. See Details for available palettes.
... Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
• NULL for no breaks
• waiver() for the default breaks computed by the transformation object
• A character vector of breaks
• A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.
drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.
na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.
na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.
scale_name The name of the scale
name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.
labels One of:
• NULL for no labels
• waiver() for the default labels computed by the transformation object
• A character vector giving labels (must be same length as breaks)
• A function that takes the breaks as input and returns labels as output
expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.
guide A function used to create a guide or its name. See guides() for more info.
position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales
super The super class to use for the constructed scale

See Also

scale_colour_tableau() for references.
Other colour tableau: scale_colour_gradient2_tableau, scale_colour_gradient_tableau, tableau_color_pal, tableau_gradient_pal

Examples

library("ggplot2")

p <- ggplot(mtcars) + geom_point(aes(x = wt, y = mpg, colour = factor(gear))) + facet_wrap(~am) + theme_igray()
palettes <- gghthemes_data[["tableau"]][["color-palettes"]][["regular"]]
for (palette in head(names(palettes), 3L)) {
  print(p + scale_colour_tableau(palette) +
        ggtitle(palette))
}

Description

Colour and fill scales which use the palettes in \texttt{wsj_pal()}. These scales should be used with \texttt{theme_wsj()}.  

Usage

\begin{verbatim}
scale_colour_wsj(palette = "colors6", ...)
scale_color_wsj(palette = "colors6", ...)
scale_fill_wsj(palette = "colors6", ...)
\end{verbatim}

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>palette</td>
<td>character The color palette to use: .&quot;rgb&quot;&quot;,.&quot;red_green&quot;,.&quot;black_green&quot;,.&quot;dem_rep&quot;,.&quot;colors6&quot;</td>
</tr>
<tr>
<td>...</td>
<td>Arguments passed on to \texttt{discrete_scale}</td>
</tr>
<tr>
<td>palette</td>
<td>A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.</td>
</tr>
<tr>
<td>breaks</td>
<td>One of: \begin{itemize} \item NULL for no breaks \item \texttt{waiver()} for the default breaks computed by the transformation object \item A character vector of breaks \item A function that takes the limits as input and returns breaks as output \end{itemize}</td>
</tr>
<tr>
<td>limits</td>
<td>A character vector that defines possible values of the scale and their order.</td>
</tr>
<tr>
<td>drop</td>
<td>Should unused factor levels be omitted from the scale? The default, \texttt{TRUE}, uses the levels that appear in the data; \texttt{FALSE} uses all the levels in the factor.</td>
</tr>
<tr>
<td>na.translate</td>
<td>Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify \texttt{na.translate = FALSE}.</td>
</tr>
<tr>
<td>na.value</td>
<td>If \texttt{na.translate = TRUE}, what value aesthetic value should missing be displayed as? Does not apply to position scales where \texttt{NA} is always placed at the far right.</td>
</tr>
<tr>
<td>scale_name</td>
<td>The name of the scale</td>
</tr>
<tr>
<td>name</td>
<td>The name of the scale. Used as the axis or legend title. If \texttt{waiver()}, the default, the name of the scale is taken from the first mapping used for that aesthetic. If \texttt{NULL}, the legend title will be omitted.</td>
</tr>
<tr>
<td>labels</td>
<td>One of: \begin{itemize} \item NULL for no labels \end{itemize}</td>
</tr>
</tbody>
</table>
scale_fill_calc

• waiver() for the default labels computed by the transformation object
• A character vector giving labels (must be same length as breaks)
• A function that takes the breaks as input and returns labels as output

expand  Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide  A function used to create a guide or its name. See guides() for more info.

position  The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super  The super class to use for the constructed scale

See Also

Other colour wsj: wsj_pal

scale_fill_calc

LibreOffice Calc color scales

Description

Color scales from LibreOffice Calc.

Usage

scale_fill_calc(...)

scale_colour_calc(...)

scale_color_calc(...)

Arguments

...  Arguments passed on to discrete_scale

palette  A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks  One of:
• NULL for no breaks
• waiver() for the default breaks computed by the transformation object
• A character vector of breaks
• A function that takes the limits as input and returns breaks as output

limits  A character vector that defines possible values of the scale and their order.

drop  Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.
Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.

If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If `NULL`, the legend title will be omitted.

One of:
- `NULL` for no labels
- `waiver()` for the default labels computed by the transformation object
- A character vector giving labels (must be same length as `breaks`)
- A function that takes the `breaks` as input and returns labels as output

Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function `expand_scale()` to generate the values for the `expand` argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

A function used to create a guide or its name. See `guides()` for more info.

The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

The super class to use for the constructed scale

---

**scale_fill_excel**

The classic "ugly" color scales from Excel 97.

**Usage**

```r
scale_fill_excel(...)

scale_colour_excel(...)

scale_color_excel(...)
```
Arguments

Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
• NULL for no breaks
• waiver() for the default breaks computed by the transformation object
• A character vector of breaks
• A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
• NULL for no labels
• waiver() for the default labels computed by the transformation object
• A character vector giving labels (must be same length as breaks)
• A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

See Also

Other colour excel: excel_new_pal, excel_pal, scale_colour_excel_new

Examples

library("ggplot2")

# Line and scatter plot colors
scale_fill_gdocs

Google Docs color scales

Description
Color scales from Google Docs.

Usage
scale_fill_gdocs(...)
scale_colour_gdocs(...)
scale_color_gdocs(...)

Arguments
... Arguments passed on to discrete_scale
palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
breaks One of:
• NULL for no breaks
• waiver() for the default breaks computed by the transformation object
• A character vector of breaks
• A function that takes the limits as input and returns breaks as output
limits A character vector that defines possible values of the scale and their order.
drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.
na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.
na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.
scale_name The name of the scale
name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.
labels One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as breaks)
  • A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

See Also
See theme_gdocs() for examples.

Other colour gdocs: gdocs_pal

---

**scale_fill_solarized**  
Solarized color scales

**Description**
See solarized_pal() for details.

**Usage**

```r
scale_fill_solarized(accent = "blue", ...)  
scale_colour_solarized(accent = "blue", ...)  
scale_color_solarized(accent = "blue", ...)
```

**Arguments**

- **accent** character Starting color.
- **...** Arguments passed on to discrete_scale
- **palette** A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
- **breaks** One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output
limits A character vector that defines possible values of the scale and their order.

drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

scale_name The name of the scale

name The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

labels One of:
- NULL for no labels
- waiver() for the default labels computed by the transformation object
- A character vector giving labels (must be same length as breaks)
- A function that takes the breaks as input and returns labels as output

expand Vector of range expansion constants used to add some padding around the data, to ensure that they are placed some distance away from the axes. Use the convenience function expand_scale() to generate the values for the expand argument. The defaults are to expand the scale by 5% on each side for continuous variables, and by 0.6 units on each side for discrete variables.

guide A function used to create a guide or its name. See guides() for more info.

position The position of the axis. "left" or "right" for vertical scales, "top" or "bottom" for horizontal scales

super The super class to use for the constructed scale

See Also

Other solarized colour: solarized_pal

Examples

library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am)

p + theme_solarized() +
  scale_colour_solarized()
scale_linetype_stata  

Stata linetype palette (discrete)

Description

See stata_linetype_pal() for details.

Usage

scale_linetype_stata(...)

Arguments

... Arguments passed on to discrete_scale  
  palette A palette function that when called with a single integer argument (the  
  number of levels in the scale) returns the values that they should take.  
  breaks One of:  
  • NULL for no breaks  
  • waive() for the default breaks computed by the transformation object  
  • A character vector of breaks  
  • A function that takes the limits as input and returns breaks as output  
  limits A character vector that defines possible values of the scale and their order.  
  drop Should unused factor levels be omitted from the scale? The default, TRUE,  
  uses the levels that appear in the data; FALSE uses all the levels in the factor.  
  na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.  
  na.value If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.  
  aesthetics The names of the aesthetics that this scale works with  
  scale_name The name of the scale  
  name The name of the scale. Used as the axis or legend title. If waive(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.  
  labels One of:  
  • NULL for no labels  
  • waive() for the default labels computed by the transformation object  
  • A character vector giving labels (must be same length as breaks)  
  • A function that takes the breaks as input and returns labels as output  
  guide A function used to create a guide or its name. See guides() for more info.  
  super The super class to use for the constructed scale

See Also

Other linetype stata: stata_linetype_pal
Examples

```r
require("dplyr")
require("tidyr")
require("ggplot2")

rescale01 <- function(x) {
  (x - min(x)) / diff(range(x))
}

gather(economics, variable, value, -date) %>%
  group_by(variable) %>%
  mutate(value = rescale01(value)) %>%
  ggplot(aes(x = date, y = value, linetype = variable)) +
  geom_line() +
  scale_linetype_stata()
```

**scale_shape_calc**  
*Calc shape scale*

Description

See `calc_shape_pal()` for details.

Usage

```r
scale_shape_calc(...)
```

Arguments

- `...` Arguments passed on to `discrete_scale`
- `palette` A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.
- `breaks` One of:
  - NULL for no breaks
  - `waiver()` for the default breaks computed by the transformation object
  - A character vector of breaks
  - A function that takes the limits as input and returns breaks as output
- `limits` A character vector that defines possible values of the scale and their order.
- `drop` Should unused factor levels be omitted from the scale? The default, `TRUE`, uses the levels that appear in the data; `FALSE` uses all the levels in the factor.
- `na.translate` Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.
- `na.value` If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where `NA` is always placed at the far right.
- `aesthetics` The names of the aesthetics that this scale works with
- `scale_name` The name of the scale
name  The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If `NULL`, the legend title will be omitted.

labels  One of:
  • `NULL` for no labels
  • `waiver()` for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as `breaks`)
  • A function that takes the breaks as input and returns labels as output

guide  A function used to create a guide or its name. See `guides()` for more info.

super  The super class to use for the constructed scale

See Also
theme_calc() for examples.
Other shapes calc: calc_shape_pal

---

scale_shape_circlefill

*Filled Circle Shape palette (discrete)*

Description

Filled Circle Shape palette (discrete)

Usage

scale_shape_circlefill(...)

Arguments

...  Arguments passed on to `discrete_scale`

palette  A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks  One of:
  • `NULL` for no breaks
  • `waiver()` for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits  A character vector that defines possible values of the scale and their order.

drop  Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate  Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.

na.value  If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.
aesthetics  The names of the aesthetics that this scale works with
scale_name  The name of the scale
name  The name of the scale. Used as the axis or legend title. If waiver(), the
default, the name of the scale is taken from the first mapping used for that
aesthetic. If NULL, the legend title will be omitted.
labels  One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as breaks)
  • A function that takes the breaks as input and returns labels as output
guide  A function used to create a guide or its name. See guides() for more
  info.
super  The super class to use for the constructed scale

See Also

circlefill_shape_pal() for a description of the palette.

Other shapes: circlefill_shape_pal, cleveland_shape_pal, scale_shape_cleveland, scale_shape_tremmel, tremmel_shape_pal

scale_shape_cleveland  Shape scales from Cleveland "Elements of Graphing Data"

Description

Shape scales from Cleveland "Elements of Graphing Data"

Usage

scale_shape_cleveland(overlap = TRUE, ...)

Arguments

overlap  logical Use the scale for overlapping points?
...  Arguments passed on to discrete_scale

palette  A palette function that when called with a single integer argument (the
  number of levels in the scale) returns the values that they should take.
breaks  One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits  A character vector that defines possible values of the scale and their or-
der.
drop  Should unused factor levels be omitted from the scale? The default, TRUE,
  uses the levels that appear in the data; FALSE uses all the levels in the factor.
Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.

If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

The names of the aesthetics that this scale works with

The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If `NULL`, the legend title will be omitted.

One of:
- `NULL` for no labels
- `waiver()` for the default labels computed by the transformation object
- A character vector giving labels (must be same length as `breaks`)
- A function that takes the breaks as input and returns labels as output

A function used to create a guide or its name. See `guides()` for more info.

The super class to use for the constructed scale


`cleveland_shape_pal()` for a description of the palette.

Other shapes: `circlefill_shape_pal`, `cleveland_shape_pal`, `scale_shape_circlefill`, `scale_shape_tremmel`, `tremmel_shape_pal`
See Also

scale_shape_few() for the shape palette that this scale uses.

scale_shape_stata  Stata shape scale

Description

See stata_shape_pal() for details.

Usage

scale_shape_stata(...)

Arguments

Arguments passed on to discrete_scale

palette  A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
  • NULL for no breaks
  • waiver() for the default breaks computed by the transformation object
  • A character vector of breaks
  • A function that takes the limits as input and returns breaks as output

limits  A character vector that defines possible values of the scale and their order.

don Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate  Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.

na.value  If na.translate = TRUE, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

aesthetics  The names of the aesthetics that this scale works with

scale_name  The name of the scale

name  The name of the scale. Used as the axis or legend title. If waiver(), the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

terms One of:
  • NULL for no labels
  • waiver() for the default labels computed by the transformation object
  • A character vector giving labels (must be same length as labels)
  • A function that takes the breaks as input and returns labels as output
guide  A function used to create a guide or its name. See guides() for more info.

super  The super class to use for the constructed scale
Examples

```r
library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, shape = factor(gear))) +
  facet_wrap(~am)

p + theme_stata() + scale_shape_stata()
```

---

scale_shape_tableau  Tableau shape scales

Description

See `tableau_shape_pal()` for details.

Usage

`scale_shape_tableau(palette = "default", ...)

Arguments

- **palette**  Palette name.
- **...**  Arguments passed on to `discrete_scale`

- **palette**  A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

- **breaks**  One of:
  - `NULL` for no breaks
  - `waiver()` for the default breaks computed by the transformation object
  - A character vector of breaks
  - A function that takes the limits as input and returns breaks as output

- **limits**  A character vector that defines possible values of the scale and their order.

- **drop**  Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

- **na.translate**  Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify `na.translate = FALSE`.

- **na.value**  If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

- **aesthetics**  The names of the aesthetics that this scale works with

- **scale_name**  The name of the scale

- **name**  The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

- **labels**  One of:
  - `NULL` for no labels
  - `waiver()` for the default labels computed by the transformation object
scale_shape_tremmel

- A character vector giving labels (must be same length as breaks)
- A function that takes the breaks as input and returns labels as output

guide A function used to create a guide or its name. See guides() for more info.

super The super class to use for the constructed scale

See Also
Other shape tableau: tableau_shape_pal

Examples

library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, shape = factor(gear))) +
  facet_wrap(~am)

p + scale_shape_tableau()

scale_shape_tremmel Shape scales from Tremmel (1995)

Description
Shape scales from Tremmel (1995)

Usage

scale_shape_tremmel(overlap = FALSE, alt = TRUE, ...)

Arguments

overlap use an empty circle instead of a solid circle when n == 2.
alt If TRUE, then when n == 3, use a solid circle, plus sign and empty triangle. Otherwise use a solid circle, empty circle, and empty triangle.
... Arguments passed on to discrete_scale

palette A palette function that when called with a single integer argument (the number of levels in the scale) returns the values that they should take.

breaks One of:
- NULL for no breaks
- waiver() for the default breaks computed by the transformation object
- A character vector of breaks
- A function that takes the limits as input and returns breaks as output

limits A character vector that defines possible values of the scale and their order.
drop Should unused factor levels be omitted from the scale? The default, TRUE, uses the levels that appear in the data; FALSE uses all the levels in the factor.

na.translate Unlike continuous scales, discrete scales can easily show missing values, and do so by default. If you want to remove missing values from a discrete scale, specify na.translate = FALSE.
If `na.translate = TRUE`, what value aesthetic value should missing be displayed as? Does not apply to position scales where NA is always placed at the far right.

**aesthetics** The names of the aesthetics that this scale works with

**scale_name** The name of the scale

**name** The name of the scale. Used as the axis or legend title. If `waiver()`, the default, the name of the scale is taken from the first mapping used for that aesthetic. If NULL, the legend title will be omitted.

**labels** One of:
- NULL for no labels
- waiver() for the default labels computed by the transformation object
- A character vector giving labels (must be same length as breaks)
- A function that takes the breaks as input and returns labels as output

**guide** A function used to create a guide or its name. See `guides()` for more info.

**super** The super class to use for the constructed scale

---

**Description**

A quick and dirty way to show linetypes.

**Usage**

```r
text <- show_linetypes(linetypes, labels = TRUE)
```

**Arguments**

- `linetypes` A character vector of linetypes. See `par()`.
- `labels` Label each line with its linetype (lty) value.
Value

This function called for the side effect of creating a plot. It returns linetypes.

See Also

show_col(), show_linetypes()

Examples

library("scales")

show_linetypes(linetype_pal()(3))
show_linetypes(linetype_pal()(3), labels = TRUE)

show_shapes

Description

A quick and dirty way to show shapes.

Usage

show_shapes(shapes, labels = TRUE)

Arguments

shapes A numeric or character vector of shapes. See par()
labels Include the plotting character value of the symbol.

Value

This function called for the side effect of creating a plot. It returns shapes.

See Also

show_col(), show_linetypes()

Examples

library("scales")

show_shapes(shape_pal()(5))
show_shapes(shape_pal()(3), labels = TRUE)
smart_digits  

Format numbers with automatic number of digits

Description

Format numbers with automatic number of digits

Usage

smart_digits(x, ...)

smart_digits_format(x, ...)

Arguments

x                  A numeric vector to format
...

Parameters passed to format()

Value

A character vector. smart_digits_format() returns a function with a single argument x, a numeric vector, that returns a character vector.

Author(s)

Josh O’Brien, Baptise Auguie, Jeffrey B. Arnold

References


solarized_pal  

Solarized color palette (discrete)

description

Qualitative color palate based on the Ethan Schoonover’s Solarized palette, http://ethanschoonover.com/solarized. This palette supports up to seven values.

Usage

solarized_pal(accent = "blue")

Arguments

accent        character Starting color.
**Note**

For a given starting color and number of colors in the palette, the other colors are the combination of colors that maximizes the total Euclidean distance between colors in L*a*b space.

**See Also**

Other solarized colour: `scale_fill_solarized`

**Examples**

```r
library("scales")

show_col(solarized_pal()(2))
show_col(solarized_pal()(3))
show_col(solarized_pal("red")(4))
```

```
stata_linetype_pal  Stata linetype palette (discrete)
```

**Description**

Linetype palette based on the linepattern scheme in Stata. This palette supports up to 15 values.

**Usage**

```r
stata_linetype_pal()
```

**See Also**

`scale_linetype_stata`

Other linetype stata: `scale_linetype_stata`

```
stata_pal  Stata color palettes (discrete)
```

**Description**


**Usage**

```r
stata_pal(scheme = "s2color")
```

**Arguments**

- `scheme` character. One of "s2color", "s1rcolor", "s1color", or "mono".

**Details**

All these palettes support up to 15 values.
stata_shape_pal

Examples

library("scales")

show_col(stata_pal("s2color")(15))
show_col(stata_pal("s1rcolor")(15))
show_col(stata_pal("s1color")(15))
show_col(stata_pal("mono")(15))

stata_shape_pal  Stata shape palette (discrete)

Description

Shape palette based on the symbol palette in Stata used in scheme s2mono. This palette supports up to 10 values.

Usage

stata_shape_pal()

See Also

See scale_shape_stata() for examples.

stat_fivenumber  Calculate components of a five-number summary

Description

The five number summary of a sample is the minimum, first quartile, median, third quartile, and maximum.

Usage

stat_fivenumber(mapping = NULL, data = NULL, geom = "boxplot",
probs = c(0, 0.25, 0.5, 0.75, 1), na.rm = FALSE,
position = "identity", show.legend = NA, inherit.aes = TRUE, ...)

Arguments

mapping  Set of aesthetic mappings created by aes() or aes_. If specified and inherit.aes = TRUE (the default), it is combined with the default mapping at the top level of the plot. You must supply mapping if there is no plot mapping.

data  The data to be displayed in this layer. There are three options:
If NULL, the default, the data is inherited from the plot data as specified in the call to ggplot().
A data.frame, or other object, will override the plot data. All objects will be fortified to produce a data frame. See fortify() for which variables will be created.
A function will be called with a single argument, the plot data. The return value must be a data.frame, and will be used as the layer data.
geom The geometric object to use display the data
probs Quantiles to use for the five number summary.
na.rm If FALSE (the default), removes missing values with a warning. If TRUE silently removes missing values.
position Position adjustment, either as a string, or the result of a call to a position adjustment function.
show.legend logical. Should this layer be included in the legends? NA, the default, includes if any aesthetics are mapped. FALSE never includes, and TRUE always includes. It can also be a named logical vector to finely select the aesthetics to display.
inherit.aes If FALSE, overrides the default aesthetics, rather than combining with them. This is most useful for helper functions that define both data and aesthetics and shouldn’t inherit behaviour from the default plot specification, e.g. borders().
... Other arguments passed on to layer(). These are often aesthetics, used to set an aesthetic to a fixed value, like colour = "red" or size = 3. They may also be parameters to the paired geom/stat.

Value
A data frame with additional columns:
width width of boxplot
min minimum
lower lower hinge, 25% quantile
middle median, 50% quantile
upper upper hinge, 75% quantile
max maximum

See Also
stat_boxplot()

describe

describe A data frame with additional columns:
width width of boxplot
min minimum
lower lower hinge, 25% quantile
middle median, 50% quantile
upper upper hinge, 75% quantile
max maximum

Description
Color palettes used in Tableau.

Usage
tableau_color_pal(palette = "Tableau 10", type = c("regular",
"ordered-sequential", "ordered-diverging"), direction = 1)

Arguments
palette Palette name. See Details for available palettes.
type Type of palette. One of "regular", "ordered-diverging", or "ordered-sequential".
direction If 1, the default, then use the original order of colors. If -1, then reverse the order.
Tableau provides types of color palettes: "regular" (discrete, qualitative categories), "ordered-sequential", and "ordered-diverging".


References

http://vis.stanford.edu/color-names/analyzer/


See Also

Other colour tableau: scale_colour_gradient2_tableau, scale_colour_gradient_tableau, scale_colour_tableau, tableau_gradient_pal

Examples

library("scales")

palettes <- ggthemes_data["tableau"]["color-palettes"][["regular"]] for (palname in names(palettes)) {
  pal <- tableau_color_pal(palname)
  max_n <- attr(pal, "max_n")
  show_col(pal(max_n))
  title(main = palname)
}
Tableau colour gradient palettes (continuous)

Description
Tableau colour gradient palettes (continuous)

Usage

```r
tableau_gradient_pal(palette = "Blue", type = "ordered-sequential")
tableau_seq_gradient_pal(palette = "Blue", ...)
tableau_div_gradient_pal(palette = "Orange-Blue Diverging", ...)
```

Arguments

- `palette` Palette name.

- `type` Palette type, either "ordered-sequential" or "ordered-diverging".

... Arguments passed to `tableau_gradient_pal`.

See Also
Other colour tableau: `scale_colour_gradient2_tableau`, `scale_colour_gradient_tableau`, `scale_colour_tableau`, `tableau_color_pal`

Examples

```r
library("scales")
x <- seq(0, 1, length = 25)
r <- sqrt(outer(x ^ 2, x ^ 2, "+"))
palettes <- ggthemes_data["tableau"][["color-palettes"]][["ordered-sequential"]]
for (palname in names(palettes)) {
  # Code to use palettes goes here
```
tableau_shape_pal

    col <- tableau_seq_gradient_pal(palname)(seq(0, 1, length = 12))
    image(r, col = col)
    title(main = palname)

Tableau Shape Palettes (discrete)

Description

Shape palettes used by Tableau.

Usage

    tableau_shape_pal(palette = c("default", "filled", "proportions"))

Arguments

    palette    Palette name.

Details

Not all shape palettes in Tableau are supported. Additionally, these palettes are not exact, and use the best unicode character for the shape palette.

Since these palettes use unicode characters, their look may depend on the font being used, and not all characters may be available.

Shape palettes in Tableau are used to expose images for use as markers in charts, and thus are sometimes groupings of closely related symbols.

See Also

Other shape tableau: scale_shape_tableau

Examples

    ## Not run:
    # need to set a font containing these values
    show_shapes(tableau_shape_pal()(5))
    ## End(Not run)
theme_base

Description
Theme similar to the default settings of the ‘base’ R graphics.

Usage
theme_base(base_size = 16, base_family = "")

Arguments
- base_size: base font size
- base_family: base font family

See Also
Other themes: theme_foundation, theme_igray, theme_par, theme_solid

Examples
library("ggplot2")
p <- ggplot(mtcars) + geom_point(aes(x = wt, y = mpg,
    colour = factor(gear))) + facet_wrap(~am)
p + theme_base()
# Change values of par
par(fg = "blue", bg = "gray", col.lab = "red", font.lab = 3)
p + theme_base()

theme_calc

Description
Theme similar to the default settings of LibreOffice Calc charts.

Usage
theme_calc(base_size = 10, base_family = "sans")

Arguments
- base_size: base font size
- base_family: base font family
**Examples**

```r
library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am) + theme_calc()
p + scale_color_calc()

q <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, shape = factor(gear))) +
  facet_wrap(~am) +
  theme_calc()
q + scale_shape_calc()
```

---

**theme_economist**

**ggplot color theme based on the Economist**

**Description**

A theme that approximates the style of *The Economist*.

**Usage**

```r
theme_economist(base_size = 10, base_family = "sans",
                 horizontal = TRUE, dkpanel = FALSE)

theme_economist_white(base_size = 11, base_family = "sans",
                       gray_bg = TRUE, horizontal = TRUE)
```

**Arguments**

- `base_size`: base font size
- `base_family`: base font family
- `horizontal`: logical, Horizontal axis lines?
- `dkpanel`: logical, Darker background for panel region?
- `gray_bg`: logical, If TRUE, use gray background, else use white background.

**Details**

- `theme_economist` implements the standard bluish-gray background theme in the print *The Economist* and economist.com.
- `theme_economist_white` implements a variant with a white panel and light gray (or white) background often used by *The Economist* blog Graphic Detail.

Use `scale_color_economist()` with this theme. The x axis should be displayed on the right hand side.

*The Economist* uses "ITC Officina Sans" as its font for graphs. If you have access to this font, you can use it with the `extrafont` package. "Veranda" is a good substitute.

**Value**

An object of class `theme()`.
References

• The Economist
• http://www.economist.com/help/about-us

Examples

library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am) +
  # Economist puts x-axis labels on the right-hand side
  scale_y_continuous(position = "right")

## Standard
p + theme_economist() +
  scale_colour_economist()

# Change axis lines to vertical
p + theme_economist(horizontal = FALSE) +
  scale_colour_economist() +
  coord_flip()

## White panel/light gray background
p + theme_economist_white() +
  scale_colour_economist()

## All white variant
p + theme_economist_white(gray_bg = FALSE) +
  scale_colour_economist()

## Not run:

## The Economist uses ITC Officina Sans
library("extrafont")
p + theme_economist(base_family="ITC Officina Sans") +
  scale_colour_economist()

## Verdana is a widely available substitute
p + theme_economist(base_family="Verdana") +
  scale_colour_economist()

## End(Not run)

---

theme_excel  

**ggplot theme based on old Excel plots**

Description

Theme to replicate the ugly monstrosity that was the old gray-background Excel chart. Please never use this. This should be combined with
theme_excel_new

Usage

theme_excel(base_size = 12, base_family = "", horizontal = TRUE)

Arguments

- base_size: base font size
- base_family: base font family
- horizontal: logical. Horizontal axis lines?

Value

An object of class theme().

See Also

Other themes excel: theme_excel_new

Examples

library("ggplot2")

# Line and scatter plot colors
p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am)
  p + theme_excel() + scale_colour_excel()

# Bar plot (area/fill) colors
  ggplot(mpg, aes(x = class, fill = drv)) +
  geom_bar() +
  scale_fill_excel() +
  theme_excel()
See Also
Other themes excel: theme_excel

Examples

```r
library("ggplot2")

p <- ggplot(mtcars) +
    geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
    facet_wrap(~am)

p + theme_excel_new() + scale_colour_excel_new()
```

```
theme_few

Theme based on Few's "Practical Rules for Using Color in Charts"

Description
Theme based on the rules and examples from Stephen Few's *Show Me the Numbers* and "Practical Rules for Using Color in Charts".

Usage

```
theme_few(base_size = 12, base_family = "")
```

Arguments

- `base_size`: base font size
- `base_family`: base font family

References


Examples

```r
library("ggplot2")

p <- ggplot(mtcars) +
    geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
    facet_wrap(~am)

p + theme_few() + scale_colour_few()

p + theme_few() + scale_colour_few("Light")

p + theme_few() + scale_colour_few("Dark")

ggplot(mtcars) +
    geom_point(aes(x = wt, y = mpg, shape = factor(gear))) +
    theme_few() +
    scale_shape_few()
```
theme_fivethirtyeight  Theme inspired by fivethirtyeight.com plots

Description

Theme inspired by the plots on http://fivethirtyeight.com.

Usage

theme_fivethirtyeight(base_size = 12, base_family = "sans")

Arguments

base_size  base font size
base_family  base font family

Examples

library("ggplot2")
p <- ggplot(mtcars, aes(x = wt, y = mpg, colour = factor(gear))) +
  geom_point() +
  facet_wrap(~am) +
  geom_smooth(method = "lm", se = FALSE) +
  scale_color_fivethirtyeight() +
  theme_fivethirtyeight()
p

theme_foundation  Foundation Theme

Description

This theme is designed to be a foundation from which to build new themes, and not meant to be used
directly. theme_foundation() is a complete theme with only minimal number of elements defined.
It is easier to create new themes by extending this one rather than theme_gray() or theme_bw(),
because those themes define elements deep in the hierarchy.

Usage

theme_foundation(base_size = 12, base_family = "")

Arguments

base_size  base font size
base_family  base font family

Details

This theme takes theme_gray() and sets all colour and fill values to NULL, except for the top-
level elements (line, rect, and title), which have colour = "black", and fill = "white". This leaves the spacing and-non colour defaults of the default ggplot2 themes in place.
See Also
Other themes: theme_base, theme_igray, theme_par, theme_solid

theme_gdocs | Theme with Google Docs Chart defaults

Description
Theme similar to the default look of charts in Google Docs.

Usage
theme_gdocs(base_size = 12, base_family = "sans")

Arguments
- base_size: base font size
- base_family: base font family

Examples
library("ggplot2")
p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am)
p + theme_gdocs() + scale_color_gdocs()

theme_hc | Highcharts Theme

Description
Theme based on the plots in HighchartsJS.

Usage
theme_hc(base_size = 12, base_family = "sans", style = c("default", "darkunica"), bgcolor = NULL)

Arguments
- base_size: base font size
- base_family: base font family
- style: The Highcharts theme to use 'default', 'darkunica'.
- bgcolor: Deprecated
theme_igray

References

http://www.highcharts.com/demo/line-basic
https://github.com/highslide-software/highcharts.com/tree/master/js/themes

Examples

library("ggplot2")

p <- ggplot(mtcars) + geom_point(aes(x = wt, y = mpg,
colour = factor(gear))) + facet_wrap(~am)
p + theme_hc() + scale_colour_hc()
p + theme_hc(bgc = "darkunica") +
scale_colour_hc("darkunica")

dtemp <- data.frame(months = factor(rep(substr(month.name, 1, 3), 4),
levels = substr(month.name, 1, 3)),
city = rep(c("Tokyo", "New York", "Berlin", "London"),
each = 12),
temp = c(7.0, 6.9, 9.5, 14.5, 18.2, 21.5,
25.2, 26.5, 23.3, 18.3, 13.9, 9.6,
-0.2, 0.8, 5.7, 11.3, 17.0, 22.0,
24.8, 24.1, 20.1, 14.1, 8.6, 2.5,
-0.9, 0.6, 3.5, 8.4, 13.5, 17.0,
18.6, 17.9, 14.3, 9.0, 3.9, 1.0,
3.9, 4.2, 5.7, 8.5, 11.9, 15.2,
17.0, 16.6, 14.2, 10.3, 6.6, 4.8))

ggplot(dtemp, aes(x = months, y = temp, group = city, color = city)) +
geom_line() +
geom_point(size = 1.1) +
ggtitle("Monthly Average Temperature") +
theme_hc() +
scale_colour_hc()

ggplot(dtemp, aes(x = months, y = temp, group = city, color = city)) +
geom_line() +
geom_point(size = 1.1) +
ggtitle("Monthly Average Temperature") +
theme_hc(bgc = "darkunica") +
scale_fill_hc("darkunica")

theme_igray

Inverse gray theme

Description

Theme with white panel and gray background.

Usage

theme_igray(base_size = 12, base_family = "")
Arguments

base_size  base font size
base_family base font family

Details

This theme inverts the colors in the `theme_gray()`, a white panel and a light gray area around it. This keeps a white background for the color scales like `theme_bw()`. But by using a gray background, the plot is closer to the typographical color of the document, which is the motivation for using a gray panel in `theme_gray()`. This is similar to the style of plots in Stata and Tableau.

See Also

`theme_gray()`, `theme_bw()`

Other themes: `theme_base`, `theme_foundation`, `theme_par`, `theme_solid`

Examples

```
library("ggplot2")

p <- ggplot(mtcars) +
    geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
    facet_wrap(~am)

p + theme_igray()
```

```
```

theme_map  Clean theme for maps

Description

A clean theme that is good for displaying maps from `geom_map()`.

Usage

```
theme_map(base_size = 9, base_family = "")
```

Arguments

base_size  base font size
base_family base font family

Examples

```
library("maps")
library("ggplot2")

us <- fortify(map_data("state"), region = "region")
m <- ggplot(data = us, map = us,
            aes(x = long, y = lat, map_id = region, group = group),
            fill = "white", color = "black", size = 0.25) +
    coord_map("albers", lat0 = 39, lat1 = 45) +
```
Description

The pander ships with a default theme when the `unify plots` option is enabled via `panderOptions`, which is now also available outside of pander internals, like `evals`, `eval.msgs` or Pandoc.brew.

Usage

```r
theme_pander(base_size = 12, base_family = "sans", nomargin = TRUE,
             ff = NULL, fc = "black", fs = NULL, gM = TRUE, gm = TRUE,
             gc = "grey", gl = "dashed", boxes = FALSE, bc = "white",
             pc = "transparent", lp = "right", axis = 1)
```

Arguments

- `base_size`: base font size
- `base_family`: base font family
- `nomargin`: suppress the white space around the plot (boolean)
- `ff`: font family, like `sans`. Deprecated: use `base_family` instead.
- `fc`: font color (name or hexa code)
- `gM`: major grid (boolean)
- `gm`: minor grid (boolean)
- `gc`: grid color (name or hexa code)
- `gl`: grid line type (`lty`)
- `boxes`: to render a border around the plot or not
- `bc`: background color (name or hexa code)
- `pc`: panel background color (name or hexa code)
- `lp`: legend position
- `axis`: axis angle as defined in `par(les)`

Examples

```r
require("ggplot2")
require("pander")

p <- ggplot(mtcars, aes(x = mpg, y = wt)) +
  geom_point()
  p + theme_pander()

panderOptions("graph.grid.color", "red")
p + theme_pander()
```
**theme_par**

Theme which uses the current ‘base’ graphics parameter values from `par()`. Not all `par()` parameters, are supported, and not all are relevant to `ggplot2` themes.

**Description**


**Usage**

```r
theme_par(base_size = par()$ps, base_family = par()$family)
```

**Arguments**

- `base_size` base font size
- `base_family` base font family

**Details**

This theme does not translate the base graphics perfectly, so the graphs produced by it will not be identical to those produced by base graphics, most notably in the spacing of the margins.

**See Also**

Other themes: `theme_base`, `theme_foundation`, `theme_igray`, `theme_solid`

**Examples**

```r
library("ggplot2")

p <- ggplot(mtcars, aes(wt, mpg, colour = factor(cyl))) +
  geom_point()
  p + theme_pander() + scale_color_pander()

ggplot(mpg, aes(x = class, fill = drv)) +
  geom_bar() +
  scale_fill_pander() +
  theme_pander()
```

```r
# theme changes with respect to values of par
par(font = 2, col.lab = "red", fg = "white", bg = "black")
p + theme_par()
```
theme_solarized  ggplot color themes based on the Solarized palette

Description


Usage

theme_solarized(base_size = 12, base_family = "", light = TRUE)

theme_solarized_2(base_size = 12, base_family = "", light = TRUE)

Arguments

base_size  base font size
base_family base font family
light logical. Light or dark theme?

Details

Plots made with this theme integrate seamlessly with the Solarized Beamer color theme. https://github.com/jrnold/beamercolorthemessolarized. There are two variations: theme_solarized is similar to theme_bw(), while theme_solarized_2() is similar to theme_gray().

Examples

library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear)))

# Light version with different main accent colors
for (accent in names(ggthemes::ggthemes_data["solarized"]["accents"])) {
  print(p + theme_solarized() +
        scale_colour_solarized(accent))
}

# Dark version
p + theme_solarized(light = FALSE) +
  scale_colour_solarized("blue")

# Alternative theme
p + theme_solarized_2(light = FALSE) +
  scale_colour_solarized("blue")
theme_solid

Theme with nothing other than a background color

Description

Theme that removes all non-geom elements (lines, text, etc). This theme is when only the geometric objects are desired.

Usage

```r
theme_solid(base_size = 12, base_family = "", fill = NA)
```

Arguments

- **base_size**: Base font size.
- **base_family**: Ignored, kept for consistency with `theme()`.
- **fill**: Background color of the plot.

See Also

Other themes: `theme_base`, `theme_foundation`, `theme_igray`, `theme_par`

Examples

```r
library("ggplot2")

ggplot(mtcars, aes(wt, mpg)) +
  geom_point() +
  theme_solid(fill = "white")

ggplot(mtcars, aes(wt, mpg)) +
  geom_point(color = "white") +
  theme_solid(fill = "black")
```

theme_stata

Themes based on Stata graph schemes

Description

Themes based on Stata graph schemes

Usage

```r
theme_stata(base_size = 11, base_family = "sans", scheme = "s2color")
```

Arguments

- **base_size**: base font size
- **base_family**: base font family
- **scheme**: One of "s2color", "s2mono", "s1color", "s1rcolor", or "s1mono", "s2manual", "s1manual", or "sj"
theme_tufte

Details

These themes approximate Stata schemes using the features **ggplot2**. The graphical models of Stata and ggplot2 differ in various ways that make an exact replication impossible (or more difficult than it is worth). Some features in Stata schemes not in ggplot2: defaults for specific graph types, different levels of titles, captions and notes. These themes also adopt some of the ggplot2 defaults, and more effort was made to match the colors and sizes of major elements than in matching the margins.

References

http://www.stata.com/help.cgi?schemes

Examples

```r
library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~ am) +
  labs(title = "Graphs by car type",
       x = "Weight (lbs.)", y = "MPG")

# s2color
p + theme_stata() +
  scale_colour_stata("s2color")
# s2mono
p + theme_stata(scheme = "s2mono") +
  scale_colour_stata("mono")
# s1color
p + theme_stata(scheme = "s2color") +
  scale_colour_stata("s1color")
# s1rcolor
p + theme_stata(scheme = "s1rcolor") +
  scale_colour_stata("s1rcolor")
# s1mono
p + theme_stata(scheme = "s1mono") +
  scale_colour_stata("mono")
```

theme_tufte

_Tufte Maximal Data, Minimal Ink Theme_

Description

Theme based on Chapter 6 ’Data-Ink Maximization and Graphical Design’ of Edward Tufte *The Visual Display of Quantitative Information*. No border, no axis lines, no grids. This theme works best in combination with `geom_rug()` or `geom_rangeframe()`.

Usage

```
theme_tufte(base_size = 11, base_family = "serif", ticks = TRUE)
```
Arguments

base_size  base font size
base_family base font family
ticks logical Show axis ticks?

Note

The default font family is set to 'serif' as he uses serif fonts for labels in 'The Visual Display of Quantitative Information'. The serif font used by Tufte in his books is a variant of Bembo, while the sans serif font is Gill Sans. If these fonts are installed on your system, then you can use them with the package extrafont.

References


Examples

```r
library("ggplot2")
p <- ggplot(mtcars, aes(x = wt, y = mpg)) +
geom_point() +
scale_x_continuous(breaks = extended_range_breaks(mtcars$wt)) +
scale_y_continuous(breaks = extended_range_breaks(mtcars$mpg)) +
ggtitle("Cars")
p + geom_rangeframe() +
theme_tufte()
p + geom_rug() +
theme_tufte(ticks = FALSE)
```

theme_wsj  Wall Street Journal theme

Description

Theme based on the plots in The Wall Street Journal.

Usage

```r
theme_wsj(base_size = 12, color = "brown", base_family = "sans",
title_family = "mono")
```

Arguments

base_size  base font size
color The background color of plot. One of 'brown', 'gray', 'green', 'blue'.
base_family base font family
title_family Plot title font family.
tremmel_shape_pal

Details

This theme should be used with `scale_color_wsj()`.

References

https://twitter.com/WSJGraphics
https://pinterest.com/wsjgraphics/wsj-graphics/

Examples

```r
library("ggplot2")

p <- ggplot(mtcars) +
  geom_point(aes(x = wt, y = mpg, colour = factor(gear))) +
  facet_wrap(~am) +
  ggtitle("Diamond Prices")

p + scale_colour_wsj("colors6", ") + theme_wsj()

# Use a gray background instead
p + scale_colour_wsj("colors6", ") + theme_wsj(color = "gray")
```

tremmel_shape_pal  Shape palette from Tremmel (1995) (discrete)

Description

Based on experiments Tremmel (1995) suggests the following shape palettes:

Usage

`tremmel_shape_pal(overlap = FALSE, alt = FALSE, n3alt = NULL)`

Arguments

- **overlap**
  - use an empty circle instead of a solid circle when `n == 2`.
- **alt, n3alt**
  - If TRUE, then when `n == 3`, use a solid circle, plus sign and empty triangle.
  - Otherwise use a solid circle, empty circle, and empty triangle.

Details

If two symbols, then use a solid circle and plus sign.

If three symbols, then use a solid circle, empty circle, and an empty triangle. However, that set of symbols does not satisfy the requirement that each symbol should differ from the other symbols in the same feature dimension. A set of three symbols that satisfies this is a circle (curvature), plus sign (number of terminators), triangle (line orientation).

This palette supports up to three values. If more than three groups of data, then separate the groups into different plots.

References

See Also

Other shapes: `circlefill_shape_pal, cleveland_shape_pal, scale_shape_circlefill, scale_shape_cleveland`
scale_shape_tremmel

```r
wsj_pal(palette = "colors6")
```

Arguments

- `palette` character. The color palette to use: "rgby", "red_green", "black_green", "dem_rep", "colors6"

Palettes

The following palettes are defined,

- **rgby** Red/Green/Blue/Yellow theme. Examples: `https://twitpic.com/b2e3v2`. Up to four values.
- **green_black** Black-green 4-color scale for 'Very negative', 'Somewhat negative', 'somewhat positive', 'very positive'. Examples: `https://twitpic.com/awbua0`.
- **dem_rep** Democrat/Republican/Undecided blue/red/gray scale. Examples: `https://twitpic.com/awbua0`.
- **colors6** Red, blue, gold, green, orange, and black palette. Examples: `https://twitpic.com/9gfg5q`.

See Also

Other colour wsj: `scale_colour_wsj`
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