Package 'unikn'

April 16, 2024

Type Package

Title Graphical Elements of the University of Konstanz's Corporate Design

Version 1.0.0

Date 2024-04-15

Maintainer Hansjoerg Neth <h.neth@uni.kn>

Description Define and use graphical elements of corporate design manuals in R. The 'unikn' package provides color functions (by defining dedicated colors and color palettes, and commands for finding, changing, viewing, and using them) and styled text elements (e.g., for marking, underlining, or plotting colored titles). The pre-defined range of colors and text decoration functions is based on the corporate design of the University of Konstanz <https://www.uni-konstanz.de/>, but can be adapted and extended for other purposes or institutions.

Depends R (>= 3.4.0)

Imports cli, ggplot2

Suggests knitr, rmarkdown, spelling

Collate 'color_def_1.R' 'color_def_2.R' 'util.R' 'util_color.R' 'util_plot.R' 'color_fun_1.R' 'color_fun_2.R' 'plot_box.R' 'plot_box_calls.R' 'plot_text.R' 'plot_text_calls.R' 'plot_themes.R' 'plot_kn.R' 'plot_demo.R' 'start_unikn.R'

Encoding UTF-8

License CC BY-SA 4.0

URL https://CRAN.R-project.org/package=unikn

BugReports https://github.com/hneth/unikn/issues

VignetteBuilder knitr

RoxygenNote 7.3.1

Language en-US

NeedsCompilation no

Author Hansjoerg Neth [aut, cre] (<https://orcid.org/0000-0001-5427-3141>), Nico Gradwohl [aut] (<https://orcid.org/0000-0002-8703-905X>)

Repository CRAN

Date/Publication 2024-04-16 19:20:02 UTC

R topics documented:

ac . . . 3
Bordeaux . . . 4
demopal . . . 5
get_col_names . . . 6
Grau . . . 7
grepal . . . 7
heading . . . 9
Karpfenblau . . . 11
mark . . . 11
newpal . . . 13
pal_bordeaux . . . 16
pal_grau . . . 17
pal_karpfenblau . . . 18
pal_peach . . . 19
pal_petrol . . . 20
pal_pinky . . . 21
pal_seeblau . . . 22
pal_seegruen . . . 23
pal_signal . . . 24
pal_unikn . . . 25
pal_unikn_dark . . . 26
pal_unikn_light . . . 27
pal_unikn_pair . . . 28
pal_unikn_ppt . . . 29
pal_unikn_pref . . . 30
pal_unikn_web . . . 31
Peach . . . 32
Petrol . . . 32
Pinky . . . 33
post . . . 34
Seeblau . . . 36
seecol . . . 37
Seegruen . . . 40
shades_of . . . 40
Signal . . . 41
simcol . . . 42
slide . . . 44
theme_grau . . . 45
theme_unikn . . . 46
uline . . . 47
unikn.guide . . . 49
url_unikn . . . 49

usecol 50
xbox 52

Index **53**

---

ac *Adjust color transparency*

Description

ac adjusts the transparency of a color or color palette col to an opacity level alpha (in [0, 1]).

Usage

```
ac(col, alpha = 0.5, use_names = TRUE)
```

Arguments

col	A (required) color or color palette (as a vector).
alpha	A factor modifying the opacity alpha (as alpha.f in adjustcolor) to a value in [0, 1]. Default: alpha = .50 (i.e., medium opacity).
use_names	A logical value indicating whether color names should be adjusted to include the values of alpha. Default: use_names = TRUE.

Details

ac is mostly a wrapper for adjustcolor of the **grDevices** package, but allows for more flexible combinations of (multiple) col and alpha values.

The name ac is an abbreviation of "adjust color", but is also a mnemonic aid for providing "air conditioning".

Value

A color vector of the same length as col, transformed by adjustcolor.

See Also

seecol for plotting/seeing color palettes; usecol for using color palettes; simcol for finding similar colors; newpal for defining new color palettes; grepal for finding named colors.

Other color functions: demopal(), grepal(), newpal(), seecol(), shades_of(), simcol(), usecol()

Examples

```
ac("black")  # using alpha = .5 by default

# multiple colors:
cols <- ac(c("black", "gold", "deepskyblue"), alpha = .50)
seecol(cols, main = "Transparent colors")

# multiple alphas:
blacks <- ac("black", alpha = 5:0/5)
seecol(blacks, main = "One col several alpha values")

bgc <- ac(c("black", "gold"), alpha = 1:6/6)
seecol(bgc, main = "More alpha values than cols")

# Using a color palette:
seecol(ac(pal_unikn_pref, 2/3), main = "Adding color transparency by ac()")

# Color names:
seecol(ac(col = pal_unikn_pref, alpha = c(1/5, 4/5), use_names = TRUE))
seecol(ac(col = pal_unikn_pref, alpha = c(1/5, 4/5), use_names = FALSE))
```

Bordeaux *uni.kn color Bordeaux*

Description

Bordeaux provides the preferred color of pal_bordeaux (as an atomic HEX character value) and is defined as pal_bordeaux[[4]].

Usage

```
Bordeaux
```

Format

An object of class character of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_bordeaux for the corresponding color palette; pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Grau, Karpfenblau, Peach, Petrol, Pinky, Seeblau, Seegruen, Signal

Examples

```
Bordeaux  # HEX character "#8E2043" (as value)
all.equal(Bordeaux, pal_bordeaux[[4]])  # TRUE (same HEX values)

seecol(Bordeaux)  # view color and details
```

---

demopal *Demonstrate a color palette (in a plot)*

Description

demopal provides an example plot of some type to illustrate a color palette pal.

Usage

```
demopal(pal = pal_unikn, type = NA, pal_name = NULL, ...)
```

Arguments

pal	A color palette (to be illustrated). Default: pal = pal_unikn.
type	The type of plot to be used (as character string or integer value). Permissible types are "bar", "curve", "mosaic", "polygon", or "scatter" (or an integer value from 1 to 5, respectively).
pal_name	A name for the input color palette pal (shown on bottom-right margin). Default: pal_name = NULL (deparsing to input name).
...	Auxiliary arguments passed to type-specific plots (see details).

Details

The demopal wrapper function passes a range of arguments to more specific functions. Common arguments include:

- col_par Default color for par(col);
- alpha Default value for color transparency (in 0:1);
- n A scaling parameter (for random data generation);
- main plot title (on top);
- sub plot subtitle (on right margin);
- seed A random seed value (for reproducible randomness).

The fit between a color palette pal and plot type depends on the uses of colors in a plot. For instance, overlaps of transparent color areas can be evaluated with plot type = "curve" or plot type = "scatter" (and 0 < alpha < 1).

Some functions additionally accept type-specific arguments (e.g., beside, horiz, and as_prop, for plot type = "bar", and cex for plot type = "scatter").

The type-specific functions usually generate some random data (scaled by a parameter n) that is being plotted. This data is returned (as an invisible R object) to enable a plot's reconstruction.

Value

The random data that was plotted (as an invisible R object).

See Also

`seepal` for plotting color palettes; `usecol` for using color palettes; `shades_of` to defining shades of a given color; `ac` for adjusting color transparency; `pal_unikn` for the default uni.kn color palette.

Other color functions: `ac()`, `grepal()`, `newpal()`, `seecol()`, `shades_of()`, `simcol()`, `usecol()`

Examples

```
demopal(pal = pal_petrol, type = 1)

my_pal <- c(rev(pal_pinky), pal_seeblau)
# Selecting plot type:
demopal(my_pal, type = 2)          # by numeric index
demopal(my_pal, type = "polygon")  # by name

# Passing type-specific arguments:
demopal(type = "scatter", col_par = "black", n = 200, cex = c(2, 4, 6), seed = 101)
```

---

get_col_names *Get color names*

Description

`get_col_names` gets color names from color palettes.

Usage

```
get_col_names(col, custom_pals = all_pals)
```

Arguments

`col`	A vector of colors.
`custom_pals`	A vector of color palettes.

Value

A vector of color names.

Grau *uni.kn color Grau*

Description

Grau provides the preferred color of pal_grau (as an atomic HEX character value) and is defined as pal_grau[[3]].

Usage

```
Grau
```

Format

An object of class character of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_grau for the corresponding color palette; pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Bordeaux, Karpfenblau, Peach, Petrol, Pinky, Seeblau, Seegruen, Signal

Examples

```
Grau  # HEX character "#9AA0A7" (as value)
all.equal(Grau, pal_grau[[3]])  # TRUE (same HEX values)

seecol(Grau)  # view color and details
```

grepal *Get a vector of colors whose names match a regular expression*

Description

grepal returns a vector of colors whose names match a regular expression (regex).

Usage

```
grepal(pattern, x = colors(), ignore_case = TRUE, plot = TRUE)
```

Arguments

pattern	A regular expression (specified as a string/character object).
x	A vector of R color names or a data frame of named colors (i.e., whose names can be searched). Default: x = colors().
ignore_case	Should the case of pattern be ignored (passed to ignore.case of the grep function)? Default: ignore_case = TRUE.
plot	Boolean: Plot the output (using seecol)? Default: plot = TRUE.

Details

By default, the **base** R vector of named colors (i.e., colors()) is searched for names matching a pattern (which can be a simple string or regular expression).

If x (i.e., the object to be searched) is provided, it is must be a vector of color names or a data frame of named color objects (i.e., a color palette).

If plot = TRUE, grepal also visualizes the detected colors (by passing its result to seecol, as a side-effect).

This function facilitates searching colors by name and yields (a vector of) colors of similar color hue (provided that the color's hue is expressed in a color's name). Its name grepal is an abbreviation of grep and "pal".

See Also

seecol for viewing and comparing color palettes; usecol for using color palettes; simcol for finding similar colors; newpal for defining new color palettes; shades_of to defining shades of a given color; ac for adjusting color transparency; pal_unikn for the default uni.kn color palette.

Other color functions: ac(), demopal(), newpal(), seecol(), shades_of(), simcol(), usecol()

Examples

```
grepal("tan")

# With regular expressions:
some_grey  <- grepal("gr(a|e)y", plot = FALSE)
start_grey <- grepal("^gr(a|e)y", plot = FALSE)
only_grey  <- grepal("^gr(a|e)y$", plot = FALSE)

length(some_grey)
length(only_grey)

# With other color objects (df as x):
grepal("blau", x = pal_unikn)
grepal("SEE", x = pal_unikn_pref, ignore_case = FALSE)

# Applications:
seecol(grepal("white"), col_bg = "lightblue2", main = "See 'white' colors()")

olives  <- grepal("olive", plot = FALSE)
oranges <- grepal("orange", plot = FALSE)
```

```
seecol(list(olives, oranges),
       pal_names = c("olives", "oranges"),
       main = "Comparing olives and oranges")
```

---

heading *Plot a heading (as marked text elements)*

Description

heading plots 1 or more text strings (provided as a character vector labels) as a heading to an (existing or new) plot and places a colored box behind each label to mark it (i.e., highlighting the heading).

Usage

```
heading(
  labels,
  x = 0,
  y = 0.8,
  x_layout = NA,
  y_layout = "flush",
  col = "black",
  col_bg = "default",
  cex = 2,
  font = 2,
  new_plot = "slide"
)
```

Arguments

labels	A character vector specifying the text labels to be plotted.
x	A numeric vector of x-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: x = 0.
y	A numeric vector of y-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: y = .8.
x_layout	An optional numeric vector or character string to control the horizontal positions of labels. Numeric values are interpreted as increments to values of x and recycled (to enable stepwise or alternating patterns). 3 character string options are: "center" (i.e., center wrt. first label or plot center), "left" (i.e., left wrt. first label or plot center), "right" (i.e., right wrt. first label or plot center). Default: x_layout = NA (i.e., using values of x).

y_layout	A numeric value or character string to control the vertical positions of labels. Numeric values are interpreted as increments to values of y[1] and recycled (to enable stepwise or alternating patterns). 2 character string options are: "even" (i.e., even distribution of labels across available y-space) and "flush" (i.e., no space between adjacent labels, i.e., y_layout = 0). Default: y_layout = "flush".
col	The color(s) of the text label(s). Default: col_lbl = "black".
col_bg	The color(s) to highlight or fill the rectangle(s) with. Default: col_bg = "default" (to automatically select different shades of pal_seeblau).
cex	Numeric character expansion factor(s), multiplied by par("cex") to yield the character size(s). Default: cex = 2.
font	The font type(s) to be used. Default: font = 2 (i.e., bold).
new_plot	Boolean: Should a new plot be generated? Set to "blank" or "slide" to create a new plot, and to "none" to add to an existing plot. Default: new_plot = "slide" (i.e., create a new slide).

Details

Text formatting parameters (like col, col_bg, cex, font) are recycled to match length(labels).

heading uses the base graphics system graphics::.

See Also

slide and xbox to create simple plots (without text).

Examples

```
heading(labels = c("This is a headline", "containing two lines."))

# Note the warning:
heading(labels = c("Headlines", "with 3 or more lines",
                   "should not be arranged", "in such a step-wise fashion."))

# Avoiding the warning:
heading(labels = c("Headlines with", "3 or more lines should",
                     "not be arranged", "in a step-wise fashion."))

# Using non-default colors:
heading(labels = c("Ene,", "mene, miste,", "es rappelt", "in der Kiste."),
      cex = 1.6, col = "white", col_bg = usecol(c(Pinky, Seegruen, Bordeaux, Karpfenblau)))

# Using x_layout and y_layout:
heading(labels = c("Ene,", "mene, miste,", "es rappelt", "in der Kiste."),
        cex = 1.6, col = "white", col_bg = usecol(pal_pinky[2:5]),
        x = NA, y = .6, x_layout = "right", y_layout = "flush")

#' @family text functions
```

Karpfenblau *uni.kn color Karpfenblau*

Description

Karpfenblau provides the preferred color of pal_karpfenblau (as an atomic HEX character value) and is defined as pal_karpfenblau[[4]].

Usage

```
Karpfenblau
```

Format

An object of class character of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_karpfenblau for the corresponding color palette; pal_unikn_pref for a uni.kn color palette with all preferred colors; pal_unikn for the default uni.kn color palette; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Bordeaux, Grau, Peach, Petrol, Pinky, Seeblau, Seegruen, Signal

Examples

```
Karpfenblau  # HEX character "#3E5496" (as value)
all.equal(Karpfenblau, pal_karpfenblau[[4]])  # TRUE (same HEX values)

seecol(Karpfenblau)  # view color and details
```

mark *Plot marked (or highlighted) text elements*

Description

mark plots 1 or more text strings (provided as a character vector labels) to an (existing or new) plot and places a colored box behind each label to mark it (i.e., highlight or make it stand out from the background).

Usage

```
mark(
  labels,
  x = 0,
  y = 0.55,
  x_layout = NA,
  y_layout = "even",
  col = "black",
  col_bg = Seeblau,
  cex = 2,
  font = 2,
  new_plot = "none"
)
```

Arguments

labels	A character vector specifying the text labels to be plotted.
x	A numeric vector of x-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: x = 0.
y	A numeric vector of y-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: y = .55.
x_layout	An optional numeric vector or character string to control the horizontal positions of labels. Numeric values are interpreted as increments to values of x and recycled (to enable stepwise or alternating patterns). 3 character string options are: "center" (i.e., center wrt. first label or plot center), "left" (i.e., left wrt. first label or plot center), "right" (i.e., right wrt. first label or plot center). Default: x_layout = NA (i.e., using values of x).
y_layout	A numeric value or character string to control the vertical positions of labels. Numeric values are interpreted as increments to values of y[1] and recycled (to enable stepwise or alternating patterns). 2 character string options are: "even" (i.e., even distribution of labels across available y-space) and "flush" (i.e., no space between adjacent labels, i.e., y_layout = 0). Default: y_layout = "even".
col	The color(s) of the text label(s). Default: col_lbl = "black".
col_bg	The color(s) to highlight or fill the rectangle(s) with. Default: col_bg = Seeblau.
cex	Numeric character expansion factor(s), multiplied by par("cex") to yield the character size(s). Default: cex = 2.
font	The font type(s) to be used. Default: font = 2 (i.e., bold).
new_plot	Should a new plot be generated? Set to "blank" or "slide" to create a new plot. Default: new_plot = "none" (i.e., add to an existing plot).

Details

The positions of the text elements in labels can be specified by providing their coordinates (as x and y arguments) or by providing an initial position and an y_layout (see below).

Text formatting parameters (like `col`, `col_bg`, `cex`, `font`) are recycled to match `length(labels)`.

`mark` uses the base graphics system `graphics::`.

See Also

`slide` and `xbox` to create simple plots (without text).

Other text functions: `post()`, `uline()`, `url_unikn()`

Examples

```
# Basics:
mark(labels = "This is a test.", new_plot = "blank")  # create a new blank plot
mark(labels = "More testing here...", y = .45, col_bg = pal_pinky[[2]])  # add to plot

# Example:
# (a) Mark text on an existing plot:
plot(x = 0, y = 0, type = "n", xlim = c(0, 1), ylim = c(0, 1), xlab = "", ylab = "")
mark(x = 0, y = .8, labels = "Mark (on an existing plot)")  # uses existing plot

# (b) Mark text on a new plot:
mark(x = 0, y = .8, labels = "Mark (and create a new plot)",
     new_plot = "slide")  # starts a new plot

# (c) More text and decorations:
mark(x = 0, y = c(.60, .50),
     labels = c("Highlighting text is simple", "and effective"),
     cex = 1.5, col_bg = c(pal_seeblau[[2]], pal_seeblau[[1]]))

mark(labels = c("It is also flexible", "but to be handled with care"),
     x = .4, y = .3, y_layout = "flush", cex = 1.2,
     col = c("white", "black"), col_bg = c(pal_seeblau[[5]], "gold"))

# Using x_layout and y_layout:

mark(labels = c("One, and", "two, and", "three and four is", "plenty and perhaps enough..."),
     cex = 1.4, font = 2, col = "white", col_bg = Bordeaux,
     x = .5, y = .6, x_layout = c(-.25, +.25), y_layout = 0, new_plot = "slide")
```

---

newpal *Define a new color palette*

Description

`newpal` allows defining new color palettes (as data frames or vectors).

Usage

```
newpal(col, names = NULL, pattern = NULL, replacement = NULL, as_df = FALSE)
```

Arguments

col	A required vector of colors (specified as R color names, HEX codes, or RGB values).
names	An optional character vector of color names. Default: names = NULL, using default color names. Setting names = NA removes all color names.
pattern	A pattern to be replaced in names (as REGEX). Default: pattern = NULL.
replacement	A replacement for pattern in names (as REGEX). Default: replacement = NULL.
as_df	Should the new color palette be returned as a data frame (rather than as a vector)? Default: as_df = FALSE.

Details

Specifying pattern and replacment allows modifying names by regular expressions (using gsub(..., perl = TRUE)).

By default, new palette is returned as a (named) vector. Setting as_df = TRUE returns new palette as a data frame.

Value

A (named) vector or data frame.

See Also

seecol for viewing and comparing color palettes; usecol for using color palettes; simcol for finding similar colors; grepal for finding named colors; shades_of to defining shades of a given color; ac for adjusting color transparency; pal_unikn for the default uni.kn color palette.

Other color functions: ac(), demopal(), grepal(), seecol(), shades_of(), simcol(), usecol()

Examples

```
newpal(col = c("black", "white"), names = c("dark", "bright"))

# Example: 3 ways of defining a new color palette:

# (1) From R color names: -----

pal_flag_de <- newpal(col = c("black", "firebrick3", "gold"),
                      names = c("Schwarz", "Rot", "Gold"))
seecol(pal_flag_de, main = "Colors of the German flag")

# (2) From HEX values: -----

# (a) Google logo colors:
# Source: https://www.schemecolor.com/google-logo-colors.php
color_google <- c("#4285f4", "#34a853", "#fbbc05", "#ea4335")
names_google <- c("blueberry", "sea green", "selective   yellow", "cinnabar")
pal_google   <- newpal(color_google, names_google, pattern = "\\s+", replacement = "_")
```

```
seecol(pal_google, main = "Colors of the Google logo", col_brd = "white", lwd_brd = 10)

# (b) German flag (revised):
# Based on a different source at
# <https://www.schemecolor.com/germany-flag-colors.php>:
pal_flag_de_2 <- newpal(col = c("#000000", "#dd0000", "#ffce00"),
                        names = c("black", "red", "gold")
                        )
seecol(pal_flag_de_2, main = "Colors of the German flag (www.schemecolor.com)")

# (c) Mixing HEX and R color names:
pal_mpg <- newpal(col = c("#007367", "white", "#D0D3D4"),
                  names = c("MPG green", "white", "MPG grey"),
                pattern = "([A-Z])", replacement = "\\L\\1"  # replace upper by lowercase
                  )
seecol(pal_mpg, main = "The colors of the Max Planck Society", col_bg = "grey")

# (3) From RGB values: -----

# A barrier-free color palette
# Source: Okabe & Ito (2002): Color Universal Design (CUD):
#         Fig. 16 of <https://jfly.uni-koeln.de/color/>:

# (a) Vector of colors (as RGB values):
o_i_colors <- c(rgb(  0,   0,   0, maxColorValue = 255),  # black
                rgb(230, 159,   0, maxColorValue = 255),  # orange
                rgb( 86, 180, 233, maxColorValue = 255),  # skyblue
                rgb(  0, 158, 115, maxColorValue = 255),  # green
                rgb(240, 228,  66, maxColorValue = 255),  # yellow
                rgb(  0, 114, 178, maxColorValue = 255),  # blue
                rgb(213,  94,   0, maxColorValue = 255),  # vermillion
                rgb(204, 121, 167, maxColorValue = 255)   # purple
)

# (b) Vector of color names:
o_i_names <- c("black", "orange", "skyblue", "green", "yellow", "blue", "vermillion", "purple")

# (c) Use newpal() to combine colors and names:
pal_okabe_ito <- newpal(col = o_i_colors, names = o_i_names,
                        pattern = "(^[a-z])", replacement = "\\U\\1")  # capitalize initial

seecol(pal_okabe_ito,
       main = "Color-blind friendly color scale (Okabe & Ito, 2002)")

# (+) Compare custom color palettes: -----

my_pals <- list(pal_flag_de, pal_flag_de_2, pal_google, pal_mpg, pal_okabe_ito)
seecol(my_pals, col_brd = "white", lwd_brd = 4,
       main = "Comparing custom color palettes")
```

pal_bordeaux *uni.kn color palette bordeaux*

Description

pal_bordeaux provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Bordeaux).

Usage

```
pal_bordeaux
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_peach and pal_pinky for alternative redish uni.kn color palettes; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_bordeaux
dim(pal_bordeaux)  # 1 5
pal_bordeaux[4]    # preferred (named) color "bordeaux4"
pal_bordeaux[[4]]  # preferred color "bordeaux4" OR "#8E2043"

# Plotting palette:
seecol(pal_bordeaux)
```

pal_grau *uni.kn color palette grau*

Description

pal_grau provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Grau or grey).

Usage

```
pal_grau
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_grau
dim(pal_grau)  # 1 5
pal_grau[3]    # preferred (named) color "grau3"
pal_grau[[3]]  # preferred color "grau3" OR "#9AA0A7"

# Plotting palette:
seecol(pal_grau)
```

pal_karpfenblau *uni.kn color palette karpfenblau*

Description

pal_karpfenblau provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Karpfenblau or blue carp).

Usage

```
pal_karpfenblau
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_seeblau for the default seeblau uni.kn color palette; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_karpfenblau
dim(pal_karpfenblau)  # 1 5
pal_karpfenblau[4]    # preferred (named) color "karpfenblau4"
pal_karpfenblau[[4]]  # preferred color "karpfenblau4" OR "#3E5496"

# Plotting palette:
seecol(pal_karpfenblau)
```

pal_peach *uni.kn color palette peach*

Description

pal_peach provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Peach).

Usage

```
pal_peach
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_pinky and pal_bordeaux for alternative redish uni.kn color palettes; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_peach
dim(pal_peach)  # 1 5
pal_peach[4]    # preferred (named) color "peach4"
pal_peach[[4]]  # preferred color "peach4" OR "#FEA090"

# Plotting palette:
seecol(pal_peach)
```

pal_petrol *uni.kn color palette petrol*

Description

pal_petrol provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Petrol or grue).

Usage

```
pal_petrol
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details, and https://en.wikipedia.org/wiki/New_riddle_of_induction for the portmanteau "grue".

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_seegruen for an alternative green/grue uni.kn color palette; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_petrol
dim(pal_petrol)  # 1 5
pal_petrol[4]    # preferred (named) color "petrol4"
pal_petrol[[4]]  # preferred color "petrol4" OR "#077187"

# Plotting palette:
seecol(pal_petrol)
```

pal_pinky *uni.kn color palette pinky*

Description

pal_pinky provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Pinky or pink).

Usage

```
pal_pinky
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_peach and pal_bordeaux for alternative redish uni.kn color palettes; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_pinky
dim(pal_pinky)  # 1 5
pal_pinky[4]    # preferred (named) color "pinky4"
pal_pinky[[4]]  # preferred color "pinky4" OR "#E0607E"

# Plotting palette:
seecol(pal_pinky)
```

pal_seeblau *uni.kn color palette seeblau*

Description

pal_seeblau provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Seeblau).

Usage

```
pal_seeblau
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_karpfenblau for an alternative blue uni.kn color palette; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_seeblau
dim(pal_seeblau)  # 1 5

# Preferred color:
pal_seeblau[3]    # preferred (named) color "seeblau3" (as df)
pal_seeblau[[3]]  # preferred color value "#59C7EB"

# Access by position:
pal_seeblau[3]    # named color "seeblau3" (as df)
pal_seeblau[[3]]  # color value "#59C7EB"

# Access by name:
pal_unikn["seeblau3"]    # color "seeblau3" (as df)
pal_unikn[["seeblau3"]]  # color value "#59C7EB"

# Plotting palette:
seecol(pal_seeblau)
```

pal_seegruen *uni.kn color palette seegruen*

Description

pal_seegruen provides an additional uni.kn color palette as a data frame containing 5 colors (shades of Seegruen).

Usage

```
pal_seegruen
```

Format

An object of class data.frame with 1 rows and 5 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_petrol for an alternative green uni.kn color palette; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_seegruen
dim(pal_seegruen)  # 1 5
pal_seegruen[4]    # preferred (named) color "seegruen4"
pal_seegruen[[4]]  # preferred color "seegruen4" OR "#0A9086"

# Plotting palette:
seecol(pal_seegruen)
```

pal_signal *uni.kn color palette signal (Ampel colors)*

Description

pal_signal provides an additional uni.kn color palette as a data frame containing 3 colors (Ampel or traffic signal colors).

Usage

```
pal_signal
```

Format

An object of class data.frame with 1 rows and 3 columns.

Details

The colors are arranged as in a traffic light ("Ampel"):

1. top: red or "bad"
2. mid: yellow or "alert"
3. bot: green or "good"

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_signal
dim(pal_signal)  # 1 3
pal_signal[2]    # (named) color "signal2"
pal_signal[[2]]  # color "signal2" OR "#EFDC60"

# Plotting palette:
seecol(pal_signal)
```

pal_unikn *uni.kn default color palette (11 colors)*

Description

pal_unikn combines the 5 shades of blue colors from color palette pal_seeblau with the 6 non-blue colors of pal_unikn_web to a divergent palette of 11 colors.

Usage

```
pal_unikn
```

Format

An object of class data.frame with 1 rows and 11 columns.

Details

Adding seeblau5 (i.e., pal_seeblau[1]) to the default color palette pal_unikn also puts white at the central (middle) position of a color palette with 11 values:

pal_unikn[[6]] is white or "#FFFFFF".

A divergent palette is useful for creating color gradients.

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the default uni.kn color palette; pal_seeblau for the uni.kn seeblau color palette; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_unikn
dim(pal_unikn)  # 1 11

# Access by position:
pal_unikn[1]    # new color "seeblau5" (as df)
pal_unikn[[1]]  # new color value "#008ECE"

# Access by name:
pal_unikn["seeblau5"]   # new color "seeblau5" (as df)
pal_unikn[["seeblau5"]] # new color value "#008ECE"

# Viewing/using color palette:
```

```
seecol(pal_unikn)
demopal(pal_unikn, type = "curve", main = "Default colors of Konstanz University")

# Note:
pal_unikn[6] # "white" or "#FFFFFF" as central of 11 colors
```

`pal_unikn_dark` *uni.kn color palette of dark colors (10 colors)*

Description

`pal_unikn_dark` provides an additional uni.kn color palette that collects 2 dark colors of 5 color palettes as a data frame containing 10 colors (in 5 pairs).

Usage

```
pal_unikn_dark
```

Format

An object of class `data.frame` with 1 rows and 10 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

`pal_unikn_light` for a lighter uni.kn color palette; `pal_unikn_pair` for a pairwise uni.kn color palette; `pal_unikn` for the default uni.kn color palette; `seecol` for viewing and comparing color palettes; `usecol` for using color palettes.

Other color palettes: `pal_bordeaux`, `pal_grau`, `pal_karpfenblau`, `pal_peach`, `pal_petrol`, `pal_pinky`, `pal_seeblau`, `pal_seegruen`, `pal_signal`, `pal_unikn`, `pal_unikn_light`, `pal_unikn_pair`, `pal_unikn_ppt`, `pal_unikn_pref`, `pal_unikn_web`

Examples

```
pal_unikn_dark
dim(pal_unikn_dark)  # 1 8
pal_unikn_dark[1]    # color "karpfenblau5" by position
pal_unikn_dark[[1]]  # color value by position: #324376"
pal_unikn_dark["karpfenblau5"]  # color value by name

# Viewing/using color palette:
seecol(pal_unikn_dark)
demopal(pal_unikn_dark, type = "points", main = "Dark colors of Konstanz University")
```

pal_unikn_light *uni.kn color palette of light colors (10 colors)*

Description

pal_unikn_light provides an additional uni.kn color palette that collects 2 light colors of 5 color palettes as a data frame containing 10 colors (in 5 pairs).

Usage

```
pal_unikn_light
```

Format

An object of class data.frame with 1 rows and 10 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn_dark for a darker uni.kn color palette; pal_unikn_pair for a pairwise uni.kn color palette; pal_unikn for the default uni.kn color palette; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_unikn_light
dim(pal_unikn_light)  # 1 10

# Access by position:
pal_unikn_light[1]    # color "seeblau3" (as df)
pal_unikn_light[[1]]  # color value "#59C7EB"

# Access by name:
pal_unikn_light["seeblau3"]   # color "seeblau3" (as df)
pal_unikn_light[["seeblau3"]] # color value "#59C7EB"

# Viewing/using color palette:
seecol(pal_unikn_light)
demopal(pal_unikn_light, type = "bar", main = "Light colors of Konstanz University")
```

pal_unikn_pair *uni.kn color palette of pairwise colors (16 colors)*

Description

pal_unikn_pair provides an additional uni.kn color palette that collects 16 paired colors of 8 color palettes as a data frame containing 16 colors (in 8 pairs).

Usage

```
pal_unikn_pair
```

Format

An object of class data.frame with 1 rows and 16 columns.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn_light for a lighter uni.kn color palette; pal_unikn_dark for a darker uni.kn color palette; pal_unikn for the default uni.kn color palette; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_ppt, pal_unikn_pref, pal_unikn_web

Examples

```
pal_unikn_pair
dim(pal_unikn_pair)  # 1 16
pal_unikn_pair[1]    # color "karpfenblau4" by position
pal_unikn_pair[[1]]  # color value by position: #3E5496"
pal_unikn_pair["karpfenblau4"]  # color value by name

# Viewing/using color palette:
seecol(pal_unikn_pair)
demopal(pal_unikn_pair, type = "polygon", main = "A pair-wise color palette")
```

pal_unikn_ppt *uni.kn secondary color palette (ppt version)*

Description

pal_unikn_ppt provides an alternative uni.kn color palette as a data frame containing 10 colors.

Usage

```
pal_unikn_ppt
```

Format

An object of class data.frame with 1 rows and 10 columns.

Details

This is a secondary (ppt) variant with more muted colors.

See pal_unikn for the primary/default (web/sRGB) scale and https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_pref, pal_unikn_web

Examples

```
pal_unikn_ppt
dim(pal_unikn_ppt)  # 1 10

# Access by position:
pal_unikn_ppt[2]    # 2nd named color "seeblau3" (as df)
pal_unikn_ppt[[2]]  # 2nd color value "#59B6DC"

# Access by name:
pal_unikn_ppt["seeblau3"]    # color "seeblau3" (as df)
pal_unikn_ppt[["seeblau3"]]  # color value "#59B6DC"

# Plotting palette:
seecol(pal_unikn_ppt)
```

pal_unikn_pref *uni.kn color palette of preferred colors (9 colors)*

Description

pal_unikn_pref provides an additional uni.kn color palette that collects the preferred color of each palette as a data frame containing 9 (or 8 + 1) colors.

Usage

```
pal_unikn_pref
```

Format

An object of class data.frame with 1 rows and 9 columns.

Details

The colors are arranged in a sequence that provides high contrasts between adjacent colors.

Note that the (alert) color Signal is not a preferred color according to the official color definition.

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the default uni.kn color palette; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_web

Examples

```
pal_unikn_pref
dim(pal_unikn_pref)  # 1 9

# Access by position:
pal_unikn_pref[1]    # color Seeblau (as df)
pal_unikn_pref[[1]]  # color value "#59C7EB"

# Access by name:
pal_unikn_pref["Seeblau"]   # color "seeblau3" (as df)
pal_unikn_pref[["Seeblau"]] # color value "#59C7EB"

# Viewing/using color palette:
seecol(pal_unikn_pref)
demopal(pal_unikn_pref, type = "mosaic", main = "Preferred colors of Konstanz University")
```

pal_unikn_web *uni.kn default color palette (web version)*

Description

pal_unikn_web provides the default uni.kn color palette as a data frame containing 10 colors.

Usage

```
pal_unikn_web
```

Format

An object of class data.frame with 1 rows and 10 columns.

Details

This is the primary (web/sRGB) scale.

Note that pal_unikn provides a divergent color palette (of 11 colors).

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_ppt for an alternative (ppt) version; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other color palettes: pal_bordeaux, pal_grau, pal_karpfenblau, pal_peach, pal_petrol, pal_pinky, pal_seeblau, pal_seegruen, pal_signal, pal_unikn, pal_unikn_dark, pal_unikn_light, pal_unikn_pair, pal_unikn_ppt, pal_unikn_pref

Examples

```
pal_unikn_web
dim(pal_unikn_web)  # 1 10

# Access by position:
pal_unikn_web[2]    # 2nd named color "seeblau3" (as df)
pal_unikn_web[[2]]  # 2nd color value "#59C7EB"

# Access by name:
pal_unikn_web["seeblau3"]    # color "seeblau3" (as df)
pal_unikn_web[["seeblau3"]]  # color value "#59C7EB"

# Plotting palette:
seecol(pal_unikn_web)
```

Peach *uni.kn color Peach*

Description

Peach provides the preferred color of pal_peach (as an atomic HEX character value) and is defined as pal_peach[[4]].

Usage

```
Peach
```

Format

An object of class character of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_peach for the corresponding color palette; pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Bordeaux, Grau, Karpfenblau, Petrol, Pinky, Seeblau, Seegruen, Signal

Examples

```
Peach  # HEX character "#FEA090" (as value)
all.equal(Peach, pal_peach[[4]])  # TRUE (same HEX values)

seecol(Peach)  # view color and details
```

Petrol *uni.kn color Petrol*

Description

Petrol provides the preferred color of pal_petrol (as an atomic HEX character value) and is defined as pal_petrol[[4]].

Usage

```
Petrol
```

Format

An object of class `character` of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

`pal_petrol` for the corresponding color palette; `pal_unikn` for the unikn default color palette with all 5 colors of `pal_seeblau`; `pal_unikn_pref` for a uni.kn color palette with all preferred colors; `seecol` for viewing and comparing color palettes; `usecol` for using color palettes.

Other preferred colors: `Bordeaux`, `Grau`, `Karpfenblau`, `Peach`, `Pinky`, `Seeblau`, `Seegruen`, `Signal`

Examples

```
Petrol  # HEX character "#077187" (as value)
all.equal(Petrol, pal_petrol[[4]])  # TRUE (same HEX values)

seecol(Petrol)  # view color and details
```

`Pinky` *uni.kn color Pinky*

Description

`Pinky` provides the preferred color of `pal_pinky` (as an atomic HEX character value) and is defined as `pal_pinky[[4]]`.

Usage

```
Pinky
```

Format

An object of class `character` of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_pinky for the corresponding color palette; pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Bordeaux, Grau, Karpfenblau, Peach, Petrol, Seeblau, Seegruen, Signal

Examples

```
Pinky  # HEX character "#E0607E" (as value)
all.equal(Pinky, pal_pinky[[4]])  # TRUE (same HEX values)

seecol(Pinky)  # view color and details
```

---

post *Post text (in an xbox)*

Description

post plots 1 or more text strings (provided as a character vector labels) to an (existing or new) xbox.

Usage

```
post(
  labels,
  x = 0.03,
  y = 0.55,
  x_layout = NA,
  y_layout = "even",
  col = "white",
  col_bg = Seeblau,
  cex = 1,
  font = 1,
  new_plot = "none"
)
```

Arguments

labels	A character vector specifying the text labels to be plotted.
x	A numeric vector of x-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: x = .03.
y	A numeric vector of y-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: y = .55.

x_layout	An optional numeric vector or character string to control the horizontal positions of labels. Numeric values are interpreted as increments to values of x and recycled (to enable stepwise or alternating patterns). 3 character string options are: "center" (i.e., center wrt. first label or plot center), "left" (i.e., left wrt. first label or plot center), "right" (i.e., right wrt. first label or plot center). Default: x_layout = NA (i.e., using values of x).
y_layout	A numeric value or character string to control the vertical positions of labels. Numeric values are interpreted as increments to values of y[1] and recycled (to enable stepwise or alternating patterns). 2 character string options are: "even" (i.e., even distribution of labels across available y-space) and "flush" (i.e., no space between adjacent labels, i.e., y_layout = 0). Default: y_layout = "even".
col	The color(s) of the text label(s). Default: col_lbl = "white".
col_bg	The background color(s) of the xbox. Default: col_bg = Seeblau.
cex	Numeric character expansion factor(s), multiplied by par("cex") to yield the character size(s). Default: cex = 1.0.
font	The font type(s) to be used. Default: font = 1 (i.e., plain text).
new_plot	Should a new plot be generated? Set to "xbox" to plot to a basic xbox (with square dimensions, i.e., dim = c(1, 1)). Default: new_plot = "none" (i.e., assumes a pre-existing xbox).

Details

The positions of the text elements in labels can be specified by providing their coordinates (as x and y arguments) or by providing an initial position and an y_layout (see below).

Text formatting parameters (like col, col_bg, cex, font) are recycled to match length(labels).

post uses the base graphics system graphics::.

See Also

xbox to create a new xbox (without text).

Other text functions: mark(), uline(), url_unikn()

Examples

```
# Create a new xbox:
post(labels = "This is a test.", new_plot = "xbox",
     cex = 1.2, font = 2, col_bg = pal_seeblau[[5]])

# Add text to an existing xbox:
post(labels = c("More text follows here,",
                "yet another line here,",
                "and even more here."),
                y = .4, y_layout = .04,
                new_plot = "none")

# Using x_layout and y_layout:
```

```
post(labels = c("Ene,", "mene, miste,", "es rappelt", "in der Kiste."),
     cex = 1.4, font = 2, col = "white", col_bg = Pinky,
     x = .1, y = .5, x_layout = "left", y_layout = .05, new_plot = "xbox")

post(labels = c("Hello world!", "Does this work?", "That's good!", "Please carry on..."),
     cex = 1.4, font = 2, col = "white", col_bg = Karpfenblau,
     x = .01, y = .6, x_layout = .10, y_layout = .05, new_plot = "xbox")
```

`Seeblau` *uni.kn color Seeblau*

Description

`Seeblau` provides the preferred color of `pal_seeblau` (as an atomic HEX character value) and is defined as `pal_seeblau[[3]]`.

Usage

```
Seeblau
```

Format

An object of class `character` of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

`pal_seeblau` for the corresponding color palette; `pal_unikn` for the unikn default color palette with all 5 colors of `pal_seeblau`; `pal_unikn_pref` for a uni.kn color palette with all preferred colors; `seecol` for viewing and comparing color palettes; `usecol` for using color palettes.

Other preferred colors: `Bordeaux`, `Grau`, `Karpfenblau`, `Peach`, `Petrol`, `Pinky`, `Seegruen`, `Signal`

Examples

```
Seeblau  # HEX character "#59C7EB" (as value)
all.equal(Seeblau, pal_seeblau[[3]])  # TRUE (same HEX values)

seecol(Seeblau)  # view color and details
```

`seecol` *Plot color palettes (to see their colors)*

Description

`seecol` provides an interface to plotting (or "seeing") the colors of a palette or comparing multiple color palettes.

Usage

```
seecol(
  pal = "unikn_all",
  n = "all",
  alpha = NA,
  hex = NULL,
  rgb = NULL,
  col_bg = NULL,
  col_brd = NULL,
  lwd_brd = NULL,
  grid = TRUE,
  scale_x = FALSE,
  main = NA,
  sub = NULL,
  title = NULL,
  mar_note = NA,
  pal_names = NA,
  ...
)
```

Arguments

`pal` A single color palette (as a vector of colors), multiple color palettes (as a list), or a recognized keyword (as a character string). Default: `pal = "unikn_all"` (i.e., plot all color palettes provided by the **unikn** package).

Recognized keywords are:

1. `"all"`: All color palettes of the **unikn** package.
2. `"all_unikn"` or `"unikn_all"`: All uni.kn color palettes (of the University of Konstanz).
3. `"unikn_basic"`: All basic uni.kn palettes.
4. `"grad_all"`: All uni.kn palettes with color gradients.
5. `"pair_all"`: All uni.kn palettes with pairwise colors.
6. `"pref_all"`: All preferred uni.kn colors and their gradients.
7. `"add"`: Additional/contributed color palettes (deprecated, as additional color palettes were migrated to the **unicol** R package).

`seecol` does also recognize keywords (e.g., `"all_unikn"`) or keywords without `"unikn"` (e.g., `"basic"`).

n	Number of colors to show or use. If n is lower or higher than the length of the current color palette pal, the color palette is reduced or extrapolated (using grDevices::colorRampPalette). Default: n = "all" (i.e., show all colors in palette).
alpha	A factor modifying the opacity alpha (as alpha.f in adjustcolor) to a value in [0, 1]. Default: alpha = NA (i.e., no modification of opacity).
hex	Should HEX color values be shown? Default: hex = NULL (i.e., show HEX color values when there is sufficient space to print them).
rgb	Should RGB color values be shown? Default: rgb = NULL (i.e., show RGB color values when there is sufficient space to print them).
col_bg	Color of plot background. Default: col_bg = NULL.
col_brd	Color of shape borders (if shown). Default: col_brd = NULL.
lwd_brd	Line width of shape borders (if shown). Default: lwd_brd = NULL.
grid	Show grid in the color plot? Default: grid = TRUE.
scale_x	Scale color shapes (when comparing multiple palettes) to a fixed total width? Default: scale_x = FALSE.
main	Main plot title (as a character string). Default: main = NA creates a default title.
sub	Optional subtitle (as a character string). Default: sub = NULL (i.e., no subtitle).
title	Deprecated plot title. Use main instead.
mar_note	Optional margin note (on bottom right). Default: mar_note = NA (i.e., no margin note).
pal_names	Names of color palettes or colors (as a character vector). Default: pal_names = NA (for default names).
...	Other graphical parameters (passed to plot).

Details

seecol has two main modes, based on the contents of its pal argument:

1. if pal is set to a *specific* color palette (or a vector of multiple colors or color palettes):
   Plot the current color palette and optional details on its colors.
2. if pal = "unikn_all" or a list of *multiple* color palettes:
   Plot visual vectors of all current color palettes for comparing them.

Specifying distinct = TRUE removes visual duplicate colors (based on HEX values, ignoring transparency), but only when showing an individual color palette pal.

Various title options (i.e., main, sub, and mar_note) and a pal_names argument add control over plotted text labels. However, the length of a character vector provided to pal_names must correspond to the number of (custom) color palettes or colors.

See Also

usecol for using color palettes; simcol for finding similar colors; newpal for defining new color palettes; grepal for finding named colors; shades_of to defining shades of a given color; ac for adjusting color transparency; pal_unikn for the default uni.kn color palette.

Other color functions: ac(), demopal(), grepal(), newpal(), shades_of(), simcol(), usecol()

Examples

```
# See multiple color palettes:
seecol()  # default: seecol(pal = "all")

# See details of one color palette:
seecol(pal_unikn)  # see a specific color palette

# Combining colors or color palettes:
seecol(c(rev(pal_seeblau), pal_seegruen))        # combine color palettes
seecol(c(rev(pal_seeblau), "white", pal_pinky))  # combine color palettes and color names
seecol(c("black", "firebrick", "gold"))          # combine color names

# Scale a set of color palettes to a fixed width:
seecol(scale_x = TRUE)

# Using n to reduce or extend color palettes:
seecol(n =  3)  # viewing reduced ranges of all palettes
seecol(n = 12)  # viewing extended ranges of all palettes

seecol(pal_unikn, n = 5,
       main = "Reduced version of pal_unikn (n = 5)")  # reducing pal_unikn
seecol(pal_seeblau, n = 8,
       main = "Extended version of pal_seeblau (n = 8)")  # extending pal_seeblau

# Combining and extending color palettes:
seecol(c(rev(pal_seeblau), "white", pal_bordeaux), n = 17,
       main = "Diverging custom color palette (with 17 colors)")

# Defining custom color palettes:
pal_mpg <- c("#007367", "white", "#D0D3D4")  # mixing hex values and color names
names(pal_mpg) <- c("mpg green", "mpg white", "mpg grey")  # color names

pal_bdg <- usecol(c(Bordeaux, "gold"), n = 5)  # using usecol

# Viewing extended color palette:
seecol(pal_mpg, n = 9, main = "Custom color palette of the Max Planck Society")

# Comparing (and labeling) custom color palettes:
seecol(list(pal_mpg, pal_bdg, pal_unikn), scale_x = TRUE,
       pal_names = c("Max Planck", "Bordeaux-Gold", "Uni Konstanz"),
       main = "Comparing and labeling custom color palettes")

## Viewing color palettes from other packages:
# library(RColorBrewer)
# seecol(brewer.pal(name = "RdBu", n = 11))  # viewing "RdBu" palette from RColorBrewer

## Extending color palettes:
# seecol(brewer.pal(name = "RdBu", n = 11), n = 15)  # extending palette to 15 colors
```

Seegruen *uni.kn color Seegruen*

Description

Seegruen provides the preferred color of pal_seegruen (as an atomic HEX character value) and is defined as pal_seegruen[[4]].

Usage

```
Seegruen
```

Format

An object of class character of length 1.

Details

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

pal_seegruen for the corresponding color palette; pal_unikn for the unikn default color palette with all 5 colors of pal_seeblau; pal_unikn_pref for a uni.kn color palette with all preferred colors; seecol for viewing and comparing color palettes; usecol for using color palettes.

Other preferred colors: Bordeaux, Grau, Karpfenblau, Peach, Petrol, Pinky, Seeblau, Signal

Examples

```
Seegruen  # HEX character "#0A9086" (as value)
all.equal(Seegruen, pal_seegruen[[4]])  # TRUE (same HEX values)

seecol(Seegruen)  # view color and details
```

shades_of *Get n shades of a color*

Description

shades_of returns a vector of n colors that are shades of a color gradient ranging from an initial color col_1 to a final color col_n.

Usage

```
shades_of(n = 5, col_1 = "black", col_n = "white", alpha = NA)
```

Arguments

n	Number of desired colors. Default: n = 5.
col_1	Initial color. Default: col_1 = "black".
col_n	Final (n-th) color. Default: col_n = "white".
alpha	A factor modifying the opacity alpha (as alpha.f in adjustcolor) to a value in [0, 1]. Default: alpha = NA (i.e., no modification of opacity).

Details

By default, the color gradient returned contains n = 5 colors that range from the initial color col_1 = "black" to the final color col_n = "white". Specifying different values for n and the initial or final colors yields different color ranges.

shades_of is mostly a wrapper for a special usecol command. However, usecol allows defining more complex color gradients (e.g., by specifying more than two colors).

See Also

seecol for viewing and comparing color palettes; usecol for using color palettes; simcol for finding similar colors; newpal for defining new color palettes; grepal for finding named colors; ac for adjusting color transparency.

Other color functions: ac(), demopal(), grepal(), newpal(), seecol(), simcol(), usecol()

Examples

```
grey50 <- shades_of(50, col_1 = 'grey1')
seecol(grey50, main = "50 shades of grey1")

blue_black <- shades_of(5, Seeblau, col_n = "black")
seecol(blue_black, main = "5 shades from Seeblau to black")

wine_white <- shades_of(6, Bordeaux, alpha = 1/2)
seecol(wine_white, col_brd = "black", lwd_brd = .5,
       main = "Shades of semi-transparent Bordeaux")
```

Signal *uni.kn color Signal or alert*

Description

Signal provides the alert color of pal_signal (as an atomic HEX character value) and is defined as pal_signal[2].

Usage

```
Signal
```

Format

An object of class `character` of length 1.

Details

The official specification of `pal_signal` does not identify a preferred color. We provide `Signal` as a dedicated color as it is suited for creating color gradients (see `usecol`).

See https://www.uni-konstanz.de/en/university/news-and-media/create-online-and-print-media/corporate-design/ for details.

See Also

`pal_signal` for the corresponding color palette; `pal_unikn` for the unikn default color palette with all 5 colors of `pal_seeblau`; `pal_unikn_pref` for a uni.kn color palette with all preferred colors; `seecol` for viewing and comparing color palettes; `usecol` for using color palettes.

Other preferred colors: `Bordeaux`, `Grau`, `Karpfenblau`, `Peach`, `Petrol`, `Pinky`, `Seeblau`, `Seegruen`

Examples

```
Signal  # HEX character "#EFDC60" (as value)
all.equal(Signal, pal_signal[[2]])  # TRUE (same HEX values)

seecol(Signal)  # view color and details
```

---

simcol *Find similar colors*

Description

`simcol` finds and shows colors from a palette of color candidates `col_candidates` that are similar to some target color `col_target`.

Usage

```
simcol(
  col_target,
  col_candidates = colors(),
  tol = c(25, 50, 75),
  distinct = TRUE,
  plot = TRUE
)
```

Arguments

col_target	A (required) target color.
col_candidates	A palette of color candidates to be considered. Default: col_candidates = colors().
tol	Numeric tolerance value(s) (either 1 or 3 numeric values, in the RGB range from 0 to 255). Values are considered in the order of the RGB value rank in col_target. Default: tol = c(25, 50, 75).
distinct	Boolean: Return only visually distinct colors? Default: distinct = TRUE (i.e., remove visual duplicates).
plot	Boolean: Plot the output (using seecol)? Default: plot = TRUE.

Details

simcol returns a vector of the (named) colors or color values in col_candidates (set to colors() of **grDevices** per default) that are similar to the specified target color col_target.

If plot = TRUE, simcol also visualizes the detected colors (by passing its result to seecol, as a side-effect).

Color similarity is defined in terms of the distance between colors' RGB values, which must be within the numeric tolerance threshold(s) specified by tol (with 0 <= tol <= 255). Higher tol values correspond to more permissive similarity judgments.

If tol is a scalar, the values of all three RGB dimensions of col_candidates must be within the corresponding values of col_target to be judged as 'similar'. If tol contains three values, the three RGB dimension are compared in order of the dimensions' rank in col_target (i.e., the primary dimension must be within tol[1], etc.). Thus, providing three tol values allows for more fine-grained similarity matching.

Value

A named vector of colors or color values.

See Also

seecol for plotting/seeing color palettes; usecol for using color palettes; newpal for defining new color palettes; grepal for finding named colors; shades_of to defining shades of a given color; ac for adjusting color transparency.

Other color functions: ac(), demopal(), grepal(), newpal(), seecol(), shades_of(), usecol()

Examples

```
# Basic uses:
simcol(col_target = "red")
simcol("tan", tol = 15)
simcol(Seeblau, tol = c(20, 30, 40))
simcol("blue", col_candidates = pal_unikn_pref, tol = 120)

# Fine-tuning the range of color matching:
simcol(Seeblau, tol = 30)  # = simcol(Seeblau, tol = c(30, 30, 30))
```

```
simcol(Seeblau, tol = c(20, 20, 80))

# Increasing tolerance widens range:
simcol("grey", c("white", "grey", "black"), tol = 255, distinct = FALSE, plot = FALSE)
```

---

slide *Plot a slide (or frame)*

Description

slide plots an empty slide (or frame) as a colored rectangle.

Usage

```
slide(col = NA, dim = c(4/3, 1), border = grey(0.33, 1), lwd = 1.5)
```

Arguments

col	The color to fill the slide with (i.e., its background color). Default: col = NA (i.e., system default for transparency).
dim	The x- and y-dimensions of the slide. Default: dim = c(4/3, 1) (i.e., unit height, 4/3 wider than high).
border	The color of the slide's border. Setting border = NA hides border. Default: border = grey(.33, 1).
lwd	The line width of the slide's border. Setting lwd = 0 or lwd = NA removes border. Default: lwd = 1.5.

See Also

heading, line, or mark to add text to a slide; xbox to plot a box.

Other plot functions: theme_grau(), theme_unikn(), xbox()

Examples

```
slide()  # default slide (or frame)
slide(lwd = NA)  # borderless slide

# Dimensions:
slide(dim = c(18, 9))   # larger and 2:1 dimensions
slide(dim = c(1/3, 1))  # smaller and 1:3 dimensions

# Formatting:
slide(col = pal_seeblau[[1]], border = pal_seeblau[[5]], lwd = 2)
```

theme_grau *Alternative theme (for ggplot2)*

Description

theme_grau provides an alternative **unikn** theme to use in **ggplot2** commands.

Usage

```
theme_grau(
  col_title = grey(0, 1),
  base_size = 11,
  base_family = "",
  base_line_size = base_size/22,
  base_rect_size = base_size/22
)
```

Arguments

col_title	Color of title (text) elements (optional, numeric). Default: col_title = grey(0, 1) (i.e., "black"). Consider using col_title = unikn::pal_seeblau[[4]].
base_size	Base font size (optional, numeric). Default: base_size = 11.
base_family	Base font family (optional, character). Default: base_family = "". Options include "mono", "sans" (default), and "serif".
base_line_size	Base line size (optional, numeric). Default: base_line_size = base_size/22.
base_rect_size	Base rectangle size (optional, numeric). Default: base_rect_size = base_size/22.

Details

theme_grau is no-nonsense, but fills panel backgrounds in "grau" (specifically, pal_seeggrau[[1]]).

This theme works well for dark colors and bright color accents, but is of limited use with transparent colors.

See Also

theme_unikn for default theme.

Other plot functions: slide(), theme_unikn(), xbox()

Examples

```
# Plotting iris dataset (using ggplot2, theme_grau, and unikn colors):

library('ggplot2')  # theme_unikn requires ggplot2
```

```
ggplot(datasets::iris) +
 geom_jitter(aes(x = Sepal.Length, y = Sepal.Width, color = Species), size = 3, alpha = 2/3) +
  facet_wrap(~Species) +
  scale_color_manual(values = usecol(pal = c(Pinky, Seeblau, Seegruen))) +
  labs(tag = "B",
       title = "Iris sepals",
       caption = "Data from datasets::iris") +
  coord_fixed(ratio = 3/2) +
  theme_grau()
```

`theme_unikn` *Basic unikn theme (for ggplot2)*

Description

`theme_unikn` provides a basic **unikn** theme to use in **ggplot2** commands.

Usage

```
theme_unikn(
  col_title = pal_seeblau[[4]],
  base_size = 11,
  base_family = "",
  base_line_size = base_size/22,
  base_rect_size = base_size/22
)
```

Arguments

`col_title`	Color of title (text) elements (optional, numeric). Default: `col_title = pal_seeblau[[4]]`. Consider using `col_title = "black"` when data uses `Seeblau` colors.
`base_size`	Base font size (optional, numeric). Default: `base_size = 11`.
`base_family`	Base font family (optional, character). Default: `base_family = ""`. Options include `"mono"`, `"sans"` (default), and "serif".
`base_line_size`	Base line size (optional, numeric). Default: `base_line_size = base_size/22`.
`base_rect_size`	Base rectangle size (optional, numeric). Default: `base_rect_size = base_size/22`.

Details

The theme is lightweight and no-nonsense, but somewhat opinionated (e.g., in using mostly grey scales to allow emphasizing data points with color accents).

See Also

theme_grau for an alternative theme.

Other plot functions: slide(), theme_grau(), xbox()

Examples

```
# Plotting iris dataset (using ggplot2, theme_unikn, and unikn colors):

library('ggplot2')  # theme_unikn requires ggplot2

ggplot(datasets::iris) +
 geom_jitter(aes(x = Petal.Length, y = Petal.Width, color = Species), size = 3, alpha = 2/3) +
  scale_color_manual(values = usecol(pal = c(Pinky, Seeblau, Seegruen))) +
  labs(tag = "A", title = "Iris petals",
       caption = "Data from datasets::iris") +
  theme_unikn()
```

---

uline *Plot underlined text elements*

Description

uline plots 1 or more text strings (provided as a character vector labels) to an (existing or new) plot and places a colored line underneath each label (to underline it).

Usage

```
uline(
  labels,
  x = 0,
  y = 0.55,
  x_layout = NA,
  y_layout = "even",
  col = "black",
  col_bg = Seeblau,
  cex = 1.5,
  font = 1,
  new_plot = "none"
)
```

Arguments

labels	A character vector specifying the text labels to be plotted.
x	A numeric vector of x-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: x = 0.
y	A numeric vector of y-coordinates at which the text labels in labels should be written. If the lengths of x and y differ, the shorter one is recycled. Default: y = .55.
x_layout	An optional numeric vector or character string to control the horizontal positions of labels. Numeric values are interpreted as increments to values of x and recycled (to enable stepwise or alternating patterns). 3 character string options are: "center" (i.e., center wrt. first label or plot center), "left" (i.e., left wrt. first label or plot center), "right" (i.e., right wrt. first label or plot center). Default: x_layout = NA (i.e., using values of x).
y_layout	A numeric value or character string to control the vertical positions of labels. Numeric values are interpreted as increments to values of y[1] and recycled (to enable stepwise or alternating patterns). 2 character string options are: "even" (i.e., even distribution of labels across available y-space) and "flush" (i.e., no space between adjacent labels, i.e., y_layout = 0). Default: y_layout = "even".
col	The color(s) of the text label(s). Default: col_lbl = "black".
col_bg	The color(s) of the line (under the text labels of labels). Default: col_bg = Seeblau.
cex	Numeric character expansion factor(s), multiplied by par("cex") to yield the character size(s). Default: cex = 1.5.
font	The font type(s) to be used. Default: font = 1 (i.e., plain text).
new_plot	Boolean: Should a new plot be generated? Set to "blank" or "slide" to create a new plot. Default: new_plot = "none" (i.e., add to an existing plot).

Details

The positions of the text elements in labels can be specified by providing their coordinates (as x and y arguments) or by providing an initial position and an y_layout (see below).

Text formatting parameters (like col, col_bg, cex, font) are recycled to match length(labels).

uline uses the base graphics system graphics::.

See Also

slide and xbox to create simple plots (without text).

Other text functions: mark(), post(), url_unikn()

Examples

```
uline(labels = "This is a test.", new_plot = "blank")  # create a new blank plot
uline(labels = "More testing here...", y = .33, col_bg = pal_pinky[[2]])  # add to plot

# 2 basic cases:
# (a) Underline text on an existing plot:
plot(x = 0, y = 0, type = "n", xlim = c(0, 1), ylim = c(0, 1), xlab = "", ylab = "")
uline(x = 0, y = .8, labels = "Underline text (on an existing plot)")  # add to plot

# (b) Underline text on a new plot:
uline(x = .02, y = .80, labels = "Underline text (on a new plot)",
     new_plot = "slide")  # create a new plot

# Example:
lbl_line <- c("This is neat, true, and terribly important.")
uline(labels = lbl_line, new_plot = "blank")  # create a new plot
uline(labels = "(which is why we underline it).", y = .40, cex = 1.2)  # add to plot
```

`unikn.guide` *Open the unikn package guides*

Description

Open the unikn package guides

Usage

```
unikn.guide()
```

`url_unikn` `url_unikn` *formats an URL the uni.kn way*

Description

`url_unikn` removes various patterns (e.g., `"http"`, `"https"`, `"://"`, `"www."`) from the front of a given URL and returns the remaining character string with an n-dash (Unicode `\u2013`) prefix, rather than the former figure dash (`\u2012`) prefix (as the latter created issues on Fedora Linux systems).

Usage

```
url_unikn(url = "https://www.uni-konstanz.de/")
```

Arguments

url	The url to be written (as copied from a web browser).

See Also

xbox to create a new xbox (without text).

Other text functions: mark(), post(), uline()

Examples

```
url_unikn("https://www.uni-konstanz.de/")
```

---

usecol *Use a color or color palette*

Description

usecol allows using a color or color palette pal (e.g., for plotting).

Usage

```
usecol(
  pal = pal_unikn,
  n = "all",
  alpha = NA,
  distinct = FALSE,
  use_names = FALSE,
  use_col_ramp = FALSE
)
```

Arguments

pal	A color palette (as a vector of colors or color palettes). Default: pal = pal_unikn.
n	An integer value specifying the desired number of colors from the palette. Default: n = "all" (i.e., use all colors of a color palette). For the palettes defined by **unikn**, n is set to a pre-defined selection of colors if the desired number of colors is smaller than the available number. For all other palettes and values of n larger than length(pal), n compresses or extends the palette using colorRampPalette.
alpha	A factor modifying the opacity alpha (as alpha.f in adjustcolor) to a value in [0, 1]. Default: alpha = NA (i.e., no modification of opacity).
distinct	Boolean: Return only visually distinct colors? Default: distinct = FALSE (i.e., include duplicate colors).
use_names	A logical value indicating whether colors should be returned as a named vector. Default: use_names = FALSE, for compatibility with ggplot.

use_col_ramp A logical value specifying whether the default of using pre-selected colors should be overridden and colorRampPalette should be used to process n. Default: use_col_ramp = FALSE.

Details

usecol also allows modifying and combining color palettes in various ways.

Value

A (named) vector of colors (of type character).

See Also

seecol for viewing and comparing color palettes; simcol for finding similar colors; newpal for defining new color palettes; grepal for finding named colors; shades_of to defining shades of a given color; ac for adjusting color transparency; pal_unikn for the default uni.kn color palette.

Other color functions: ac(), demopal(), grepal(), newpal(), seecol(), shades_of(), simcol()

Examples

```
usecol(pal = pal_unikn, n = "all")  # default color palette
usecol(pal = pal_unikn, n =  4)     # selecting n dedicated colors
usecol(pal = pal_unikn, n = 20)     # extending color palette

# Mixing a new color palette:
pal_1 <- usecol(pal = c(rev(pal_seeblau), "white", pal_pinky))
seecol(pal_1)

# Mixing and extending a color palette:
pal_2 <- usecol(pal = c(rev(pal_seegruen), "white", pal_bordeaux), n = 20)
seecol(pal_2)

# Defining and using a custom color palette:
pal_princeton_1 <- c("#E77500", "white", "black")
names(pal_princeton_1) <- c("orange_w", "white", "black")

pal_3 <- usecol(pal_princeton_1, n = 7)
seecol(pal_3)

# Removing visual duplicates:
usecol(c("black", "#000000", "gray", "grey", "red", "red1"), distinct = TRUE)
seecol(usecol(c(pal_unikn, pal_seeblau), distinct = TRUE), title = "Using distinct colors")
```

xbox *Plot a box (with x)*

Description

xbox plots a box with a cross (x) in its top-right corner.

Usage

```
xbox(col = Seeblau, dim = c(1, 1), use_x = TRUE)
```

Arguments

col	The color to fill the box with (i.e., its background color). Default: col = Seeblau.
dim	The x- and y-dimensions of the box (as numeric). Default: dim = c(1, 1) (i.e., a unit square).
use_x	Plot a cross in upper right corner (as logical)? Default: use_x = TRUE.

Details

The cross (x) appears rectangular when viewing the plot at the correct aspect ratio (as defined by dim).

See Also

post to add text to an xbox; slide to plot a new slide (or frame).

Other plot functions: slide(), theme_grau(), theme_unikn()

Examples

```
xbox()  # default box

# Options:
xbox(col = Bordeaux)
xbox(dim = c(2, 1)) # 2:1 dimension (wider than high)
```

Index

∗ **color functions**
ac, 3
demopal, 5
grepal, 7
newpal, 13
seecol, 37
shades_of, 40
simcol, 42
usecol, 50
∗ **color palettes**
pal_bordeaux, 16
pal_grau, 17
pal_karpfenblau, 18
pal_peach, 19
pal_petrol, 20
pal_pinky, 21
pal_seeblau, 22
pal_seegruen, 23
pal_signal, 24
pal_unikn, 25
pal_unikn_dark, 26
pal_unikn_light, 27
pal_unikn_pair, 28
pal_unikn_ppt, 29
pal_unikn_pref, 30
pal_unikn_web, 31
∗ **datasets**
Bordeaux, 4
Grau, 7
Karpfenblau, 11
pal_bordeaux, 16
pal_grau, 17
pal_karpfenblau, 18
pal_peach, 19
pal_petrol, 20
pal_pinky, 21
pal_seeblau, 22
pal_seegruen, 23
pal_signal, 24
pal_unikn, 25
pal_unikn_dark, 26
pal_unikn_light, 27
pal_unikn_pair, 28
pal_unikn_ppt, 29
pal_unikn_pref, 30
pal_unikn_web, 31
Peach, 32
Petrol, 32
Pinky, 33
Seeblau, 36
Seegruen, 40
Signal, 41
∗ **plot functions**
slide, 44
theme_grau, 45
theme_unikn, 46
xbox, 52
∗ **preferred colors**
Bordeaux, 4
Grau, 7
Karpfenblau, 11
Peach, 32
Petrol, 32
Pinky, 33
Seeblau, 36
Seegruen, 40
Signal, 41
∗ **text functions**
mark, 11
post, 34
uline, 47
url_unikn, 49
∗ **utility functions**
get_col_names, 6

ac, 3, *6*, *8*, *14*, *38*, *41*, *43*, *51*
adjustcolor, *3*, *38*, *41*, *50*

Bordeaux, 4, *7*, *11*, *16*, *32–34*, *36*, *40*, *42*

colorRampPalette, *50, 51*

defcol *(*newpal*)*, 13
defpal *(*newpal*)*, 13
democol *(*demopal*)*, 5
demofun *(*demopal*)*, 5
demopal, *3*, 5, *8*, *14*, *38*, *41*, *43*, *51*
demoplot *(*demopal*)*, 5

get_col_names, 6
Grau, *4*, 7, *11*, *17*, *32–34*, *36*, *40*, *42*
grepal, *3*, *6*, 7, *14*, *38*, *41*, *43*, *51*

heading, 9, *44*

Karpfenblau, *4*, *7*, 11, *18*, *32–34*, *36*, *40*, *42*

line, *44*

mark, 11, *35*, *44*, *48*, *50*

newpal, *3*, *6*, *8*, 13, *38*, *41*, *43*, *51*

pal_bordeaux, *4*, 16, *17–31*
pal_grau, *7*, *16*, 17, *18–31*
pal_karpfenblau, *11*, *16, 17*, 18, *19–31*
pal_peach, *16–18*, 19, *20–32*
pal_petrol, *16–19*, 20, *21–33*
pal_pinky, *16–20*, 21, *22–31*, *33, 34*
pal_seeblau, *4*, *7*, *10*, *16–22*, 22, *23–34*, *36*, *40*, *42*
pal_seegruen, *16–22*, 23, *24–31*, *40*
pal_signal, *16–23*, 24, *25–31*, *41, 42*
pal_unikn, *4*, *6–8*, *11*, *14*, *16–25*, 25, *26–34*, *36*, *38*, *40*, *42*, *50, 51*
pal_unikn_dark, *16–25*, 26, *27–31*
pal_unikn_light, *16–26*, 27, *28–31*
pal_unikn_pair, *16–27*, 28, *29–31*
pal_unikn_ppt, *16–28*, 29, *30, 31*
pal_unikn_pref, *4*, *7*, *11*, *16–29*, 30, *31–34*, *36*, *40*, *42*
pal_unikn_web, *16–30*, 31
Peach, *4*, *7*, *11*, *19*, 32, *33, 34*, *36*, *40*, *42*
Petrol, *4*, *7*, *11*, *20*, *32*, 32, *34*, *36*, *40*, *42*
Pinky, *4*, *7*, *11*, *21*, *32, 33*, 33, *36*, *40*, *42*
post, *13*, 34, *48*, *50*, *52*

Seeblau, *4*, *7*, *11*, *22*, *32–34*, 36, *40*, *42*
seecol, *3, 4*, *6–8*, *11*, *14*, *16–34*, *36*, 37, *40–43*, *51*
Seegruen, *4*, *7*, *11*, *23*, *32–34*, *36*, 40, *42*
seepal, *6*
seepal *(*seecol*)*, 37
shades_of, *3*, *6*, *8*, *14*, *38*, 40, *43*, *51*
Signal, *4*, *7*, *11*, *30*, *32–34*, *36*, *40*, 41
simcol, *3*, *6*, *8*, *14*, *38*, *41*, 42, *51*
slide, *10*, *13*, 44, *45*, *47, 48*, *52*

theme_grau, *44*, 45, *47*, *52*
theme_unikn, *44, 45*, 46, *52*

uline, *13*, *35*, 47, *50*
unikn.guide, 49
url_unikn, *13*, *35*, *48*, 49
usecol, *3, 4*, *6–8*, *11*, *14*, *16–34*, *36*, *38*, *40–43*, 50

xbox, *10*, *13*, *34, 35*, *44, 45*, *47, 48*, *50*, 52