

Package ‘apa7’

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Title Facilitate Writing Documents in American Psychological Association Style, Seventh Edition

Version 0.1.3

Description Create American Psychological Association Style, Seventh Edition documents. Format numbers and text consistent with APA style. Create tables that comply with APA style by extending flextable functions.

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URL <https://github.com/wjschne/apa7>, <https://wjschne.github.io/apa7/>

BugReports <https://github.com/wjschne/apa7/issues>

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add_break_columns	<i>Add break columns</i>
-------------------	--------------------------

Description

Add break columns

Usage

```
add_break_columns(
  d,
  ...,
  .before = FALSE,
  omit_first = FALSE,
  omit_last = FALSE
)
```

Arguments

d	data.frame or tibble
...	Column name or tidyselect function. Select columns
.before	insert break columns before selected columns (defaults to FALSE)
omit_first	omit the first break column
omit_last	omit the last break column

Value

data.frame or tibble

Examples

```
d <- data.frame(x_n = 3, x_mean = 4,
               y_n = 5, y_mean = 6,
               z_n = 4, z_mean = 4)
# Unquoted variable names
add_break_columns(d, x_mean)

# Character vector
add_break_columns(d, c("y_n", "z_n"), .before = TRUE)

# Tidyselect function (contains, starts_with, ends_with,
# matches, num_range, all_of, any_of)
# Insert columns after all columns
# ending with "_mean" except the last instance
add_break_columns(d,
                  dplyr::ends_with("_mean"),
                  omit_last = TRUE)
```

add_list_column	<i>Make a column into a list column</i>
-----------------	---

Description

Make a column into a list column

Usage

```
add_list_column(
  data,
  ...,
  type = c("1", "a", "A", "I", "i"),
  sep = ". ",
  merge = FALSE
)
```

Arguments

data	data.frame or tibble
...	Column name or tidyselect function. Select columns. Default is first column
type	list type. Can be "1" (numeric), "a" (lowercase alphabetical), or "ABC" (uppercase alphabetical), "i" (lowercase Roman numerals), "I" (uppercase Roman numerals)
sep	separator
merge	If TRUE, list columns will be united with their respective text columns.

Value

data.frame

Examples

```
d <- data.frame(x = letters[1:5], y = letters[2:6])
# default is first column
add_list_column(d) |>
  apa_flextable()
# select any column
add_list_column(d, y) |>
  apa_flextable()
add_list_column(d, type = "a", sep = ") ") |>
  apa_flextable()
add_list_column(d, merge = TRUE)
```

add_star_column

Adds stars next to a column based on p-values

Description

Adds stars next to a column based on p-values

Usage

```
add_star_column(  
  data,  
  ...,  
  p = "p",  
  merge = FALSE,  
  superscript = TRUE,  
  star = "\\*",  
  alpha = c(0.05, 0.01, 0.001),  
  first_alpha_marginal = FALSE,  
  add_trailing_space = FALSE,  
  prefix = "\\ "  
)
```

Arguments

data	data.frame or tibble
...	Column name or tidyselect function. Select columns
p	Column name or tidyselect function. Select p-value column name
merge	merge and balance columns (default: FALSE)
superscript	make as superscript
star	text for making stars
alpha	vector of thresholds
first_alpha_marginal	if TRUE, the first alpha value is treated as marginal and gets a dagger instead of a star
add_trailing_space	if TRUE, adds a trailing space after the stars (default: FALSE)
prefix	usually backslashes to prevent markdown from interpreting asterisks as bullets or italics

Value

data.frame

Examples

```
data.frame(b = c(1.4, 2.2),  
           p = c(.54, .02)) |>  
  add_star_column(b, p)
```

align_chr	<i>Align text on center text (default is decimal)</i>
-----------	---

Description

Align text on center text (default is decimal)

Usage

```
align_chr(
  x,
  accuracy = NULL,
  trim_leading_zeros = FALSE,
  drop0trailing = FALSE,
  add_plusses = FALSE,
  padding_character = NULL,
  center = ".",
  format_integers = FALSE,
  side = c("both", "left", "right"),
  NA_value = "",
  format_numeric_character = FALSE,
  ...
)
```

Arguments

x	vector (numeric or character)
accuracy	number to round to. If NULL, the current default accuracy set with apa7_defaults() will be used.
trim_leading_zeros	if TRUE (default), trims leading zeros, otherwise keeps them
drop0trailing	Drop trailing zeros
add_plusses	if TRUE (default), adds a plus to positive numbers
padding_character	character to use for padding, default is (figure space)
center	text on which to align text. Center on decimal by default, but can be any text.
format_integers	If TRUE, integers will be formatted with digits
side	side on which to make text of equal width
NA_value	value to replace NA
format_numeric_character	format character variables with numeric content
...	additional arguments passed to <code>signs::signs()</code>

Value

character vector

Examples

```
align_chr(c(1, 10, 100))
```

apa7_defaults	<i>Set defaults for apa7 package</i>
---------------	--------------------------------------

Description

Set defaults for apa7 package

Usage

```
apa7_defaults(  
  accuracy = NULL,  
  font_family = NULL,  
  intercept_text = NULL,  
  column_formats = NULL,  
  number_formatter = NULL,  
  trim_leading_zero = NULL,  
  reset = FALSE  
)
```

Arguments

accuracy	numeric (default: .01)
font_family	font family
intercept_text	what to call the intercept
column_formats	column formatting functions
number_formatter	default function to format numbers
trim_leading_zero	default function to trim leading zeros from numbers
reset	if TRUE, reset all defaults (except as specified)

Value

previous defaults

Examples

```
apa7_defaults(accuracy = .001)  
# Reset to package defaults  
apa7_defaults(reset = TRUE)
```

`apa_chisq`*Make contingency table with chi-square test of independence*

Description

Make contingency table with chi-square test of independence

Usage

```
apa_chisq(  
  data,  
  note = NULL,  
  row_title_column = NULL,  
  row_title_prefix = "",  
  row_title_sep = " ",  
  row_title_align = "center",  
  row_title_border = list(color = "gray20", style = "solid", width = 1),  
  left_column_padding = 20,  
  cwidth = 0.75,  
  cheight = 0.25,  
  separate_headers = TRUE,  
  apa_style = TRUE,  
  font_family = NULL,  
  font_size = 12,  
  text_color = "black",  
  border_color = "black",  
  border_width = 0.5,  
  line_spacing = 2,  
  horizontal_padding = 3,  
  table_align = "left",  
  layout = "autofit",  
  table_width = 1,  
  markdown = TRUE,  
  markdown_header = markdown,  
  markdown_body = markdown,  
  auto_format_columns = TRUE,  
  column_formats = NULL,  
  pretty_widths = TRUE,  
  suppress_warnings = TRUE,  
  ...  
)
```

Arguments

<code>data</code>	A two-column data.frame or tibble
<code>note</code>	Custom note (overrides automatic note.)

row_title_column	Column name or tidyselect function. column to group rows
row_title_prefix	text to be added to each title
row_title_sep	separator for prefix
row_title_align	alignment of row title ("left", "center", "right")
row_title_border	list of flextable styles
left_column_padding	Number of points the left column is padded (only relevant when there is a row_title_column and row_title_align = "left")
cwidth	initial cell width in inches
cheight	initial cell height in inches
separate_headers	separate header rows (default: TRUE)
apa_style	apply apa_style function (default: TRUE)
font_family	font family
font_size	font size
text_color	text color
border_color	border color
border_width	border width in pixels
line_spacing	spacing between lines
horizontal_padding	horizontal padding (in pixels)
table_align	table alignment ("left", "center", "right")
layout	table layout ("autofit", "fixed")
table_width	table width (in pixels, 0 for auto)
markdown	apply markdown formatting to header and body
markdown_header	apply markdown formatting to header
markdown_body	apply markdown formatting to body
auto_format_columns	if true, will attempt to format some columns automatically
column_formats	a column_formats object
pretty_widths	apply pretty_widths function
suppress_warnings	Suppress any warnings if true.
...	arguments passed to apa_style

Value

flextable::flextable

Examples

```
apa_chisq(mtcars[, c("am", "gear")])
```

apa_cor	<i>APA-formatted correlation table</i>
---------	--

Description

APA-formatted correlation table

Usage

```
apa_cor(
  data,
  note = NULL,
  p_value = c(0.05, 0.01, 0.001),
  digits = 2,
  bold_significant = FALSE,
  star_significant = TRUE,
  significance_note = TRUE,
  output = c("flextable", "tibble"),
  font_family = NULL,
  font_size = 12,
  text_color = "black",
  border_color = "black",
  border_width = 0.5,
  line_spacing = 2,
  table_width = 6.5,
  keep_empty_star_columns = TRUE,
  summary_functions = list(M = mean, SD = stats::sd),
  column_formats = NULL,
  ...
)
```

Arguments

data	data.frame or tibble with variables to be
note	Custom note to appear below table. (Overrides automatic note.)
p_value	p-value needed to be flagged as significant
digits	Number of digits for rounding
bold_significant	bold significant correlations
star_significant	start significant correlations

significance_note	If TRUE, place note at bottom of table that significant correlations are bolded.
output	output type. Can be "flextable" or "tibble"
font_family	font family
font_size	font size
text_color	text color
border_color	border color
border_width	border width in pixels
line_spacing	spacing between lines
table_width	table width (in pixels, 0 for auto)
keep_empty_star_columns	Keep remove empty star columns (Default: TRUE)
summary_functions	Any named list of functions that summarize data columns (e.g., list(Mean = mean, SD = sd)). Can also be a character vector of function names (e.g., c("n", "M", "SD")). Functions available in a character vector: IQR, Interquartile Range, Kurtosis, MAD, Median Absolute Deviation, M, Mean, Med, Median, n, N, Quantile, Range, SD, Skewness, Var, Variance
column_formats	column_formats object
...	<data-masking> parameters passed to psych::corTest

Value

flextable::flextable

Examples

```
apa_cor(mtcars[, c("mpg", "am", "gear", "carb")])
apa_cor(mtcars[, c("mpg", "am", "gear", "carb")],
        output = "tibble",
        star_significant = FALSE)
```

 apa_flexable

Convert data to flextable consistent with APA style

Description

The `apa_flexable` function performs a number of formatting operations on the data before and after the data are sent to flextable. See Details.

Usage

```

apa_flextable(
  data,
  row_title_column = NULL,
  row_title_align = "left",
  row_title_prefix = "",
  row_title_sep = " ",
  row_title_border = list(color = "gray20", style = "solid", width = 1),
  left_column_padding = 20,
  col_keys = colnames(data),
  cwidth = 0.75,
  cheight = 0.25,
  header_align_vertical = c("top", "middle", "bottom"),
  separate_headers = TRUE,
  apa_style = TRUE,
  font_family = NULL,
  font_size = 12,
  text_color = "black",
  border_color = "black",
  border_width = 0.5,
  line_spacing = 2,
  horizontal_padding = 3,
  table_align = "left",
  layout = "autofit",
  table_width = 1,
  markdown = TRUE,
  markdown_header = markdown,
  markdown_body = markdown,
  no_markdown_columns = NULL,
  no_markdown_columns_header = NULL,
  no_format_columns = NULL,
  auto_format_columns = TRUE,
  column_formats = NULL,
  pretty_widths = TRUE,
  add_breaks_between_spanners = TRUE,
  ...
)

```

Arguments

<code>data</code>	data.frame or tibble
<code>row_title_column</code>	Column name or tidyselct function. column to group rows
<code>row_title_align</code>	alignment of row title ("left", "center", "right")
<code>row_title_prefix</code>	text to be added to each title
<code>row_title_sep</code>	separator for prefix

row_title_border	list of flextable styles
left_column_padding	Number of points the left column is padded (only relevant when there is a row_title_column and row_title_align = "left")
col_keys	column keys passed to flextable (defaults data column names)
cwidth	initial cell width in inches
cheight	initial cell height in inches
header_align_vertical	vertical alignment of headers. Can be "top", "middle", or "bottom"
separate_headers	separate header rows (default: TRUE)
apa_style	apply apa_style function (default: TRUE)
font_family	font family
font_size	font size
text_color	text color
border_color	border color
border_width	border width in pixels
line_spacing	spacing between lines
horizontal_padding	horizontal padding (in pixels)
table_align	table alignment ("left", "center", "right")
layout	table layout ("autofit", "fixed")
table_width	table width (in pixels, 0 for auto)
markdown	apply markdown formatting to header and body
markdown_header	apply markdown formatting to header
markdown_body	apply markdown formatting to body
no_markdown_columns	body columns that should not be treated as markdown
no_markdown_columns_header	column headers that should not be treated as markdown
no_format_columns	Column name or tidyselect function. selected columns are not formatted
auto_format_columns	if true, will attempt to format some columns automatically
column_formats	a column_formats object
pretty_widths	apply pretty_widths function
add_breaks_between_spanners	add breaks between spanners if TRUE
...	arguments passed to apa_style

Details

Roughly speaking, `apa_flextable` performs these operations by default:

1. Apply `as_grouped_data` and restructure row titles, if `row_title` is specified.
2. Format data with `apa_format_columns` if `auto_format_columns = TRUE`
3. Separate headers into multiple header rows if `separate_headers = TRUE`
4. Apply `flextable::flextable`
5. Apply `flextable::surround` to make borders to separate row groups, if any.
6. Apply the `apa_style` function (table formatting and markdown conversion) if `apa_style = TRUE`
7. Apply `pretty_widths` if `pretty_widths = TRUE`

Value

`flextable::flextable`

Examples

```
library(dplyr)
library(tidyr)
library(flextable)
mtcars %>%
  dplyr::select(vs, am, gear, carb) |>
  tidyr::pivot_longer(-vs, names_to = "Variable") |>
  dplyr::summarise(Mean = round(mean(value), 2),
                  SD = round(sd(value), 2),
                  .by = c(Variable,vs)) |>
  dplyr::mutate(vs = factor(vs, levels = 0:1, labels = c("Automatic", "Manual"))) |>
  apa_flextable(row_title_column= vs, row_title_align = "center") |>
  align(j = 2:3, align = "center")
```

`apa_format_columns` *Format data columns*

Description

Format data columns

Usage

```
apa_format_columns(
  data,
  column_formats = NULL,
  no_format_columns = NULL,
  rename_headers = TRUE,
  latex_headers = FALSE,
```

```

    format_separated_headers = TRUE,
    sep = "_",
    accuracy = NULL
  )

```

Arguments

data data set (data.frame or tibble)

column_formats column_formats object. If NULL, the current default formatter set with `apa7_defaults()` will be used.

no_format_columns Column name or tidyselect function. selected columns are not formatted

rename_headers if TRUE, rename headers with markdown or latex

latex_headers if TRUE, rename headers with latex instead of markdown

format_separated_headers if TRUE, format headers with separated names. For example, if the formatter formats column R2 as R^2 , then Model 1_R2 becomes Model 1_ R^2)

sep separator for separated headers (default is "_")

accuracy numeric (default: NULL, uses the current default accuracy set with `apa7_defaults()`). If not NULL, sets the accuracy for the formatter.

Value

tibble

Examples

```

lm(mpg ~ cyl + wt, data = mtcars) |>
  parameters::parameters() |>
  apa_format_columns() |>
  apa_flexitable()

```

apa_loadings

print loadings

Description

print loadings

Usage

```

apa_loadings(
  fit,
  sort_loading = TRUE,
  min_loading = 0.2,
  column_formats = NULL,
  complexity = FALSE,
  uniqueness = FALSE
)

```

Arguments

<code>fit</code>	model fit object
<code>sort_loading</code>	sort table using <code>psych::fa.sort</code>
<code>min_loading</code>	minimum loading to display
<code>column_formats</code>	<code>column_formats</code> object to format columns. If NULL, the default <code>column_formats</code> is used.
<code>complexity</code>	print complexity column in factor analysis table
<code>uniqueness</code>	print uniqueness column in factor analysis table

Value

tibble

Examples

```
fit <- psych::fa(Harman74.cor$cov, 4, fm = "pa", rotate = "varimax")
apa_loadings(fit) |>
  `colnames<-`(c("Tests", "Verbal", "Spatial", "Quantitative", "Memory")) |>
  apa_flexibletable()
```

apa_p

p-value in APA format

Description

p-value in APA format

Usage

```
apa_p(
  p,
  inline = FALSE,
  markdown = TRUE,
  min_digits = 2,
  max_digits = 3,
  align = FALSE
)
```

Arguments

<code>p</code>	probability
<code>inline</code>	If TRUE (default), returns statistic (e.g., $p = .04$), otherwise just the number (e.g., .04)
<code>markdown</code>	By default, outputs text compatible with markdown if TRUE, otherwise prints plain text compatible with latex.

min_digits	minimum number of digits to round to. Default is 2.
max_digits	maximum number of digits to round to. Default is 3.
align	decimal alignment if TRUE

Value

character vector

Examples

```
# Values less than .001 are <.001
apa_p(.0002)
# Values between .001 and .01 are rounded to 3 digits
apa_p(.002)
# Values between .01 and .995 are rounded to 2 digits
apa_p(.02)##'
apa_p(.22)
apa_p(.994)
# Values above .995 are >.99
apa_p(.999)
# Rounding to 3 digits
apa_p(.2341, min_digits = 3)
apa_p(.0123, min_digits = 3)
apa_p(.00123, min_digits = 3)
apa_p(.000123, min_digits = 3)
apa_p(.991, min_digits = 3)
apa_p(.9991, min_digits = 3)
apa_p(.9995, min_digits = 3)
```

apa_parameters	<i>format model parameters in APA style</i>
----------------	---

Description

format model parameters in APA style

Usage

```
apa_parameters(
  fit,
  predictor_parameters = c("Coefficient", "SE", "Std_Coefficient", "t", "df_error", "p"),
  starred = NULL,
  bolded = NULL,
  column_formats = NULL,
  t_with_df = TRUE
)

## S3 method for class 'lm'
```

```

apa_parameters(
  fit,
  predictor_parameters = c("Parameter", "Coefficient", "SE", "Std_Coefficient", "t",
    "df_error", "p"),
  starred = NA,
  bolded = NA,
  column_formats = NULL,
  t_with_df = TRUE
)

## S3 method for class 'list'
apa_parameters(
  fit,
  predictor_parameters = c("Parameter", "Coefficient", "SE", "Std_Coefficient", "t",
    "df_error", "p"),
  starred = NA,
  bolded = NA,
  column_formats = NULL,
  t_with_df = TRUE
)

```

Arguments

<code>fit</code>	model fit object
<code>predictor_parameters</code>	predictor parameters to display. If named vector, column names will be vector names
<code>starred</code>	columns to star with significant p_values
<code>bolded</code>	columns to bold, if significant
<code>column_formats</code>	<code>column_formats</code> object to format columns. If <code>NULL</code> , the default <code>column_formats</code> is used.
<code>t_with_df</code>	if <code>TRUE</code> , the <code>t</code> column will be displayed with degrees of freedom in parentheses. If <code>FALSE</code> , only the <code>t</code> value is displayed.

Value

tibble

Examples

```

lm(mpg ~ cyl + wt, data = mtcars) |>
  apa_parameters() |>
  apa_flextable()

```

apa_performance *format model performance metrics in APA style*

Description

format model performance metrics in APA style

Usage

```
apa_performance(fit, metrics = c("R2", "Sigma"), column_formats = NULL)

## S3 method for class 'lm'
apa_performance(fit, metrics = c("R2", "Sigma"), column_formats = NULL)
```

Arguments

`fit` model fit object
`metrics` performance metrics. Default is R2 and Sigma
`column_formats` `column_formats` object to format columns. If `NULL`, the default `column_formats` is used.

Value

tibble

Examples

```
lm(mpg ~ cyl + wt, data = mtcars) |>
  apa_performance() |>
  apa_flextable()
```

apa_performance_comparison *format model comparison metrics in APA style*

Description

format model comparison metrics in APA style

Usage

```
apa_performance_comparison(
  ...,
  metrics = c("R2", "deltaR2", "F", "p"),
  starred = NA,
  column_formats = NULL
)
```

Arguments

... model fit objects

metrics performance metrics. Default is R2, deltaR2, F, and p

starred columns to star with significant p_values

column_formats column_formats object to format columns. If NULL, the default column_formats is used.

Value

tibble

Examples

```
m1 <- lm(mpg ~ cyl, data = mtcars)
m2 <- lm(mpg ~ cyl + wt, data = mtcars)
apa_performance_comparison(list(`Model 1` =m1, `Model 3` =m2)) |>
  apa_flextable()
```

apa_p_star_note *Make star notes for p-values*

Description

Make star notes for p-values

Usage

```
apa_p_star_note(x = c(0.05, 0.01, 0.001), first_alpha_marginal = FALSE)
```

Arguments

x vector of alpha values (p-value thresholds)

first_alpha_marginal if TRUE, the first alpha value is treated as marginal and gets a dagger instead of a star

Value

character vector

Examples

```
apa_p_star_note()
apa_p_star_note(x = c(.10, .05, .01, .001), first_alpha_marginal = TRUE)
```

apa_style	<i>Style flextable::flextable object according to APA style</i>
-----------	---

Description

Style flextable::flextable object according to APA style

Usage

```
apa_style(
  x,
  font_family = NULL,
  font_size = 12,
  text_color = "black",
  border_color = "black",
  border_width = 0.5,
  line_spacing = 2,
  horizontal_padding = 3,
  table_align = "left",
  header_align_vertical = c("top", "middle", "bottom"),
  layout = "autofit",
  table_width = 0,
  markdown = TRUE,
  markdown_header = markdown,
  markdown_body = markdown,
  no_markdown_columns = NULL,
  no_markdown_columns_header = no_markdown_columns,
  separate_headers = TRUE
)
```

Arguments

x	object
font_family	font family
font_size	font size
text_color	text color
border_color	border color
border_width	border width in pixels
line_spacing	spacing between lines
horizontal_padding	horizontal padding (in pixels)
table_align	table alignment ("left", "center", "right")
header_align_vertical	vertical alignment of headers. Can be "top", "middle", or "bottom"

layout	table layout ("autofit", "fixed")
table_width	table width (in pixels, 0 for auto)
markdown	apply markdown formatting to header and body
markdown_header	apply markdown formatting to header
markdown_body	apply markdown formatting to body
no_markdown_columns	body columns that should not be treated as markdown
no_markdown_columns_header	column headers that should not be treated as markdown
separate_headers	separate headers into column spanner labels

Value

object

Examples

```
d <- data.frame(x = 1:3, y = 4:6)
flectable::flectable(d) |>
  apa_style()
```

column_format	<i>Column format class</i>
---------------	----------------------------

Description

This class is used to define the format of columns in tables, including the name, header, latex representation, and a formatter function.

Usage

```
column_format(
  name = character(0),
  header = character(0),
  latex = character(0),
  formatter = function() NULL
)
```

Arguments

name	name of column
header	markdown representation of header name
latex	latex representation of header name
formatter	function that formats the column values. It should take a vector of values and return a character vector of formatted values.

Value

column_format object

Examples

```
R2 <- column_format(
  "R2",
  header = "*R*^2^",
  latex = "$R^2$",
  formatter = \(\x, accuracy = the$accuracy, ...) {
    align_chr(x,
              accuracy = accuracy,
              trim_leading_zeros = TRUE,
              ...)
  })
R2
R2@header
R2@formatter
```

column_formats	<i>Create a set of column formats</i>
----------------	---------------------------------------

Description

Returns an S7 object that contains a list of column_format objects that can be used to format parameters in APA style.

Usage

```
column_formats(
  .data = NULL,
  accuracy = NULL,
  intercept_text = NULL,
  starred_columns = character(0),
  variable_labels = character(0),
  custom_columns = NULL
)
```

Arguments

.data	list of column_format objects
accuracy	numeric (passed to scales::number)
intercept_text	describe intercept
starred_columns	which columns get p-value stars
variable_labels	named vector of variable names (with vector names as labels). For example, c(Parental Income = "parental_income", Number of Siblings = "n_siblings")
custom_columns	named list of column_formats to add or replace existing columns

Value

column_formats

Slots

get_column_names getter for column names

get_headers getter for column headers

get_latex getter for column latex headers

get_formatters getter for column formatters

get_header_rename getter for column names with headers as names

get_header_rename_latex getter for column names with latex headers as names

get_tibble getter for tibble with column names, headers, latex headers, and formatters

Examples

```
my_formatter <- column_formats()
my_formatter$Coefficient@formatter <- \(x) round(x, 2)
my_formatter$Coefficient@formatter(2.214)
```

column_spanner_label *Prepend column spanner labels to data column labels*

Description

Prepend column spanner labels to data column labels

Usage

```
column_spanner_label(data, label, ..., relocate = TRUE)
```

Arguments

data data.frame or tibble

label character of column spanner

... columns (i.e., one or more tidyselect functions and/or a vector of quoted or unquoted variable names)

relocate relocate columns with same spanner label to be adjacent

Value

data.frame or tibble

Examples

```
d <- data.frame(y = 1:3, x1 = 2:4, x2 = 3:5)

# Unquoted variable names
column_spanner_label(d, "Label", c(x1, x2))
# Character values (quoted variable names)
column_spanner_label(d, "Label", c("x1", "x2"))
# Tidyselect function (e.g., starts_with, ends_with, contains)
column_spanner_label(d, "Label", dplyr::starts_with("x"))
# Tidyselect range
column_spanner_label(d, "Label", x1:x2)
# Selected variables are relocated after the first selected variable
column_spanner_label(d, "Label", c(x2, y))
```

hanging_indent	<i>Return markdown text with hanging indent</i>
----------------	---

Description

Return markdown text with hanging indent

Usage

```
hanging_indent(
  x,
  indent = 4,
  width = 30,
  space = NULL,
  newline = "\\n",
  whitespace_only = FALSE,
  wrap_equal_width = FALSE
)
```

Arguments

x	text
indent	number of spaces to indent
width	number of characters to break lines
space	indenting space character (defaults to non-breaking space)
newline	text for creating new line
whitespace_only	wrapping spaces only
wrap_equal_width	Attempts to split lines to make them of approximately equal width

Value

character vector

Examples

```
hanging_indent("Hello Darkness, my old friend. I've come to talk with you again.")
```

install_ap Quarto	<i>Installs the apa Quarto extension.</i>
-------------------	---

Description

A wrapper for `quarto::quarto_add_extension`

Usage

```
install_ap Quarto(no_prompt = FALSE, quiet = FALSE, quarto_args = NULL)
```

Arguments

<code>no_prompt</code>	Do not prompt to confirm approval to download external extension.
<code>quiet</code>	Suppress warning and other messages
<code>quarto_args</code>	Character vector of other quarto CLI arguments to append to the Quarto command executed by this function.

Value

installs the apa Quarto Quarto extension

Examples

```
## Not run:  
install_ap Quarto()  
  
## End(Not run)
```

is_numeric_like	<i>Tests if a character vector contains numeric-like values</i>
-----------------	---

Description

Tests if a character vector contains numeric-like values

Usage

```
is_numeric_like(x, elementwise = FALSE)
```

Arguments

x	character vector
elementwise	if TRUE, returns a logical vector for each element, otherwise returns a single logical value indicating if all elements are numeric-like (default: FALSE)

Value

logical vector

Examples

```
is_numeric_like(c("-9", " 2.0", "-1.0 "))
is_numeric_like(c("9-", -1, "10"))
is_numeric_like(c("9", -1.2, "10"))
```

make_apaquarto	<i>Run shiny app to make a document in APA style via Quarto</i>
----------------	---

Description

A wrapper for `shiny::runGitHub` Note that running this function will install any missing packages needed to run the app: `bsicons`, `bslib`, `conflicted`, `dplyr`, `fresh`, `purrr`, `rclipboard`, `readr`, `shiny`, `shinyWidgets`, `snakecase`, `tibble`, `tidyr`, `tippy`, `toastui`, `yaml`

Usage

```
make_apaquarto(launch.browser = TRUE)
```

Arguments

`launch.browser` run shiny app in default browser

Value

Runs a shiny app that creates apaquarto documents

Examples

```
## Not run:  
make_apaquarto()  
  
## End(Not run)
```

num_pad	<i>Pads text on the left or right so that the width is the same for each element of the vector</i>
---------	--

Description

Pads text on the left or right so that the width is the same for each element of the vector

Usage

```
num_pad(x, pad_left = TRUE, padding_character = "&nbsp;", NA_value = "")
```

Arguments

x	vector of text
pad_left	if TRUE (default), pads on the left, otherwise pads on the right
padding_character	character to use for padding, default is (figure space)
NA_value	value to replace NA

Value

character vector

Examples

```
num_pad(c("a", "bb"))
```

p2stars *Convert p-values to stars*

Description

Convert p-values to stars

Usage

```
p2stars(  
  p,  
  alpha = c(0.05, 0.01, 0.001),  
  first_alpha_marginal = FALSE,  
  superscript = FALSE,  
  add_trailing_space = FALSE,  
  prefix = "\\\"  
)
```

Arguments

p	vector of numbers
alpha	vector of thresholds
first_alpha_marginal	if TRUE, the first alpha value is treated as marginal and gets a dagger instead of a star
superscript	make as superscript
add_trailing_space	if TRUE, adds a trailing space after the stars (default: FALSE)
prefix	usually backslashes to prevent markdown from interpreting asterisks as bullets or italics

Value

character vector

Examples

```
p2stars(c(.32, .02, .005),  
        alpha = c(.05, .01))
```

`pivot_wider_name_first`

A wrapper for `tidyr::pivot_wider` that creates column names as `name_variable` instead of `variable_name`

Description

The default for `names_vary` is "slowest" instead of the usual "fastest".

Usage

```
pivot_wider_name_first(
  data,
  ...,
  id_cols = NULL,
  id_expand = FALSE,
  names_from = name,
  names_prefix = "",
  names_sep = "_",
  names_sort = FALSE,
  names_vary = "slowest",
  names_expand = FALSE,
  names_repair = "check_unique",
  values_from = value,
  values_fill = NULL,
  values_fn = NULL,
  unused_fn = NULL
)
```

Arguments

<code>data</code>	A data frame to pivot.
<code>...</code>	Additional arguments passed on to methods.
<code>id_cols</code>	<p><tidy-select> A set of columns that uniquely identify each observation. Typically used when you have redundant variables, i.e. variables whose values are perfectly correlated with existing variables.</p> <p>Defaults to all columns in <code>data</code> except for the columns specified through <code>names_from</code> and <code>values_from</code>. If a tidyselect expression is supplied, it will be evaluated on <code>data</code> after removing the columns specified through <code>names_from</code> and <code>values_from</code>.</p>
<code>id_expand</code>	Should the values in the <code>id_cols</code> columns be expanded by <code>expand()</code> before pivoting? This results in more rows, the output will contain a complete expansion of all possible values in <code>id_cols</code> . Implicit factor levels that aren't represented in the data will become explicit. Additionally, the row values corresponding to the expanded <code>id_cols</code> will be sorted.

names_from, values_from	<p><code><tidy-select></code> A pair of arguments describing which column (or columns) to get the name of the output column (<code>names_from</code>), and which column (or columns) to get the cell values from (<code>values_from</code>).</p> <p>If <code>values_from</code> contains multiple values, the value will be added to the front of the output column.</p>		
names_prefix	String added to the start of every variable name. This is particularly useful if <code>names_from</code> is a numeric vector and you want to create syntactic variable names.		
names_sep	If <code>names_from</code> or <code>values_from</code> contains multiple variables, this will be used to join their values together into a single string to use as a column name.		
names_sort	Should the column names be sorted? If <code>FALSE</code> , the default, column names are ordered by first appearance.		
names_vary	When <code>names_from</code> identifies a column (or columns) with multiple unique values, and multiple <code>values_from</code> columns are provided, in what order should the resulting column names be combined?	<ul style="list-style-type: none">• "fastest" varies <code>names_from</code> values fastest, resulting in a column naming scheme of the form: <code>value1_name1</code>, <code>value1_name2</code>, <code>value2_name1</code>, <code>value2_name2</code>. This is the default.• "slowest" varies <code>names_from</code> values slowest, resulting in a column naming scheme of the form: <code>value1_name1</code>, <code>value2_name1</code>, <code>value1_name2</code>, <code>value2_name2</code>.	
names_expand	Should the values in the <code>names_from</code> columns be expanded by <code>expand()</code> before pivoting? This results in more columns, the output will contain column names corresponding to a complete expansion of all possible values in <code>names_from</code> . Implicit factor levels that aren't represented in the data will become explicit. Additionally, the column names will be sorted, identical to what <code>names_sort</code> would produce.		
names_repair	What happens if the output has invalid column names? The default, "check_unique" is to error if the columns are duplicated. Use "minimal" to allow duplicates in the output, or "unique" to de-duplicated by adding numeric suffixes. See <code>vctrs::vec_as_names()</code> for more options.		
values_fill	Optionally, a (scalar) value that specifies what each value should be filled in with when missing.	This can be a named list if you want to apply different fill values to different value columns.	
values_fn	Optionally, a function applied to the value in each cell in the output. You will typically use this when the combination of <code>id_cols</code> and <code>names_from</code> columns does not uniquely identify an observation.	This can be a named list if you want to apply different aggregations to different <code>values_from</code> columns.	
unused_fn	Optionally, a function applied to summarize the values from the unused columns (i.e. columns not identified by <code>id_cols</code> , <code>names_from</code> , or <code>values_from</code>).	The default drops all unused columns from the result.	This can be a named list if you want to apply different aggregations to different unused columns.

id_cols must be supplied for unused_fn to be useful, since otherwise all unspecified columns will be considered id_cols.

This is similar to grouping by the id_cols then summarizing the unused columns using unused_fn.

Value

data.frame

Examples

```
d <- data.frame(Model = paste0("Model", "_", 1:2), t = 1:2, p = c(.05, .45))
pivot_wider_name_first(d, names_from = Model, values_from = c(t, p))
# For comparison:
tidyr::pivot_wider(d, names_from = Model, values_from = c(t, p))
```

pretty_widths *Use flextable::dim_pretty to fit column widths*

Description

Use flextable::dim_pretty to fit column widths

Usage

```
pretty_widths(
  x,
  min_width = 0.05,
  unit = c("in", "cm", "mm"),
  table_width = 6.5
)
```

Arguments

x	flextable
min_width	minimum width of columns
unit	Can be in, cm, or mm
table_width	width of table

Value

flextable::flextable

separate_star_column *Add columns that separate significance stars from numbers*

Description

Add columns that separate significance stars from numbers

Usage

```
separate_star_column(  
  data,  
  ...,  
  superscript = TRUE,  
  star = "\\*",  
  star_replace = "\\\\\\"*"  
)
```

Arguments

data	data.frame or tibble
...	Column name or tidyselect function. Select columns
superscript	make stars superscript
star	character to use for stars (default: "*")
star_replace	character to replace stars with (default: "\\\\\\"*)

Value

data.frame or tibble

Examples

```
tibble::tibble(x = c(".45", ".58*", ".68**"),  
              y = c(1,2,3),  
              z = 4:6) |>  
  separate_star_column(x)
```

star_balance	<i>Prefix text with figure spaces to balance star text</i>
--------------	--

Description

Prefix text with figure spaces to balance star text

Usage

```
star_balance(x, star = "\\*", superscript = TRUE)
```

Arguments

x	character vector
star	star text
superscript	Place superscript text if TRUE

Value

character vector

Examples

```
star_balance(".05\\^\\*\\*\\*\\^")
```

str_wrap_equal	<i>Like stringr::str_wrap, but attempts to create lines of equal width</i>
----------------	--

Description

Like stringr::str_wrap, but attempts to create lines of equal width

Usage

```
str_wrap_equal(x, max_width = 30L, sep = "\n")
```

Arguments

x	character
max_width	maximum line width
sep	separation character

Value

character

Examples

```
str_wrap_equal("This function attempts to split the string into lines with roughly equal width.")
```

tagger

Surrounds text with tags unless empty

Description

Surrounds text with tags unless empty

Usage

```
tagger(x, tag = "<span>", right_tag = gsub("^<", "</", tag))
```

```
bold_md(x)
```

```
italic_md(x)
```

```
superscript_md(x)
```

```
subscript_md(x)
```

```
header_md(x, level = 1)
```

Arguments

x	character vector
tag	opening tag, e.g.,
right_tag	closing tag, e.g., . Defaults to the same value as the opening tag.
level	heading level

Value

character vector

Examples

```
x <- c("hello", "", NA)
tagger(x, "<span>")
bold_md(x)
italic_md(x)
superscript_md(x)
subscript_md(x)
header_md("Level 1")
header_md("Level 2", 2)
```

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