Package ‘pixiedust’

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Title  Tables so Beautifully Fine-Tuned You Will Believe It's Magic

Version  0.9.1

Description  The introduction of the 'broom' package has made converting model objects into data frames as simple as a single function. While the 'broom' package focuses on providing tidy data frames that can be used in advanced analysis, it deliberately stops short of providing functionality for reporting models in publication-ready tables. 'pixiedust' provides this functionality with a programming interface intended to be similar to 'ggplot2's system of layers with fine tuned control over each cell of the table. Options for output include printing to the console and to the common markdown formats (markdown, HTML, and LaTeX). With a little 'pixiedust' (and happy thoughts) tables can really fly.

Depends  R (>= 3.1.2)

Imports  broom, checkmate (>= 1.8.0), htmltools, knitr, labelVector, magrittr, reshape2, scales

Suggests  dplyr, rmarkdown, testthat

License  GPL (>= 2)

LazyData  true

VignetteBuilder  knitr

URL  https://github.com/nutterb/pixiedust

BugReports  https://github.com/nutterb/pixiedust/issues

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R topics documented:

as.data.frame.dust .................................................. 3
dust ................................................................. 4
fixed_header_css ..................................................... 8
gaze ................................................................. 11
get_dust_part ......................................................... 12
glance_foot .......................................................... 12
index_to_sprinkle .................................................. 14
is_valid_color .................................................... 15
knit_print.dust ..................................................... 16
medley .............................................................. 16
medley_allBorders ................................................ 17
pixiedust ........................................................... 18
pixiedust_print_method .......................................... 20
pixieply ............................................................ 20
pixie_count ......................................................... 22
print.dust .......................................................... 23
pval_string ......................................................... 24
rbind_internal ................................................... 25
reshape_data_internal ........................................ 26
sanitize_latex .................................................... 26
sprinkle ............................................................ 28
sprinkle_align .................................................... 42
sprinkle_bg ........................................................ 44
sprinkle_bg_pattern ............................................. 46
sprinkle_bookdown ............................................... 48
sprinkle_border .................................................. 49
sprinkle_borderCollapse ....................................... 52
sprinkle_caption .................................................. 54
sprinkle_caption_number ....................................... 55
sprinkle_colnames ............................................... 56
sprinkle_discrete ............................................... 57
sprinkle_fixed_header ......................................... 59
sprinkle_float .................................................... 62
sprinkle_fn ......................................................... 64
sprinkle_font ...................................................... 66
sprinkle_gradient ............................................... 69
sprinkle_height .................................................. 71
sprinkle_hhline .................................................. 73
sprinkle_html_preserve ....................................... 74
sprinkle_justify .................................................. 76
sprinkle_label ..................................................... 77
sprinkle_longtable ............................................... 78
sprinkle_merge ................................................... 79
sprinkle_na_string ............................................... 81
sprinkle_pad ....................................................... 83
sprinkle_replace ................................................ 85
as.data.frame.dust

Convert dust Object to Data Frame

Description

Sprinkles are applied to the dust object as if it were being prepared for printing to the console. However, instead of printing, the object is returned as a single data frame.

Usage

```r
## S3 method for class 'dust'
as.data.frame(x, ..., sprinkled = TRUE)

## S3 method for class 'dust_list'
as.data.frame(x, ...)
```

Arguments

- `x` A dust object.
- `...` Arguments to be passed to other methods. Currently unused.
- `sprinkled` Logical. If TRUE, the sprinkles attached to the dust object are applied before returning the data frame. Sprinkles are applied via the same mechanism that prints to the console, so only sprinkles that are applicable to console output are used. When FALSE, pixiedust attempts to reconstruct the data frame (or tidied output from broom::tidy) originally given to dust.

Details

In its current state, this can be a fairly inefficient function as the table, if the longtable option is in use, will be built in a for loop and bound together using `rbind`. This isn’t really intended for large tables, but may be of assistance when there isn’t a sprinkle that does what you want to do. (You can at least pull out the object as a data frame and do your own post processing).
Functional Requirements

1. Accepts an object of class `dust` or `dust_list`
2. Accepts a logical(1) indicating if the sprinkles should be applied to the data.
3. For a `dust` object, returns an object of class `data.frame`
4. For a `dust_list` object, returns a list of objects of class `data.frame`

Author(s)

Benjamin Nutter

Examples

```r
fit <- lm(mpg ~ qsec + factor(am) + wt * factor(gear), data = mtcars)
Dust <- dust(fit) %>%
  sprinkle(cols = 2:4, round = 2) %>%
  sprinkle(cols = 5, fn = quote(pvalString(value))) %>%
  sprinkle(cols = 3, font_color = "#DA70D6") %>%
  sprinkle_print_method("html")

as.data.frame(Dust)
```

---

Dust Table Construction

Description

Dust tables consist of four primary components that are built together to create a full table. Namely, the head, the body, the interfoot, and the foot. Dust tables also contain a table-wide attributes `borderCollapse` and `longtable` as well as a `printMethod` element.

Usage

dust(object, ...)

## Default S3 method:
dust(
  object,
  ...,
  tidy_df = FALSE,
  keep_rownames = FALSE,
  glance_foot = FALSE,
  glance_stats = NULL,
  col_pairs = 2,
  byrow = FALSE,
  descriptors = "term",
  numeric_level = c("term", "term_plain", "label"),
\begin{itemize}
\item label = NULL,
\item caption = NULL,
\item caption_number = getOption("pixied_caption_number", TRUE),
\item justify = getOption("pixie_justify", "center"),
\item float = getOption("pixie_float", TRUE),
\item longtable = getOption("pixie_longtable", FALSE),
\item hhline = getOption("pixie_hhline", FALSE),
\item bookdown = getOption("pixie_bookdown", FALSE),
\item border_collapse = getOption("pixie_border_collapse", "collapse"),
\item tabcolsep = getOption("pixie_tabcolsep", 6),
\item fixed_header = getOption("pixie_fixed_header", FALSE),
\item html_preserve = getOption("pixie_html_preserve", TRUE)
\end{itemize}

## S3 method for class 'grouped_df'
\texttt{dust(object, ungroup = TRUE, ...)}

## S3 method for class 'list'
\texttt{dust(object, ...)}

\texttt{redust(x, table, part = c("head", "foot", "interfoot", "body"))}

## Default S3 method:
\texttt{redust(x, table, part = c("head", "foot", "interfoot", "body"))}

## S3 method for class 'dust_list'
\texttt{redust(x, table, part = c("head", "foot", "interfoot", "body"))}

### Arguments

\begin{itemize}
\item \texttt{object} \hspace{1cm} An object that has a tidy method in broom
\item \texttt{...} \hspace{1cm} Additional arguments to pass to tidy
\item \texttt{tidy_df} \hspace{1cm} When \texttt{object} is an object that inherits the \texttt{data.frame} class, the default behavior is to assume that the object itself is the basis of the table. If the summarized table is desired, set to \texttt{TRUE}.
\item \texttt{keep_rownames} \hspace{1cm} When \texttt{tidy_df} is \texttt{FALSE}, setting \texttt{keep_rownames} binds the row names to the data frame as the first column, allowing them to be preserved in the tabulated output. This is only to data frame like objects, as the \texttt{broom::tidy.matrix} method performs this already.
\item \texttt{glance_foot} \hspace{1cm} Arrange the glance statistics for the foot of the table. (Not scheduled for implementation until version 0.4.0)
\item \texttt{glance_stats} \hspace{1cm} A character vector giving the names of the glance statistics to put in the output. When \texttt{NULL}, the default, all of the available statistics are retrieved. In addition to controlling which statistics are printed, this also controls the order in which they are printed.
\item \texttt{col_pairs} \hspace{1cm} An integer indicating the number of column-pairings for the glance output. This must be less than half the total number of columns, as each column-pairing in-
includes a statistic name and value. See the full documentation for the unexported function `glance_foot`.

**byrow** A logical, defaulting to FALSE, that indicates if the requested statistics are placed with priority to rows or columns. See the full documentation for the unexported function `glance_foot`.

**descriptors** A character vector indicating the descriptors to be used in the table. Acceptable inputs are "term", "term_plain", "label", "level", and "level_detail". These may be used in any combination and any order, with the descriptors appearing in the table from left to right in the order given. The default, "term", returns only the term descriptor and is identical to the output provided by broom::tidy methods. See Details for a full explanation of each option and the Examples for sample output. See the full documentation for the unexported function `tidy_levels_labels`.

**numeric_level** A character string that determines which descriptor is used for numeric variables in the "level_detail" descriptor when a numeric has an interaction with a factor. Acceptable inputs are "term", "term_plain", and "label". See the full documentation for the unexported function `tidy_levels_labels`.

**label** character(1). An optional string for assigning labels with which tables can be referenced elsewhere in the document. If NULL, pixiedust attempts to name the label tab:[chunk-name], where [chunk-name] is the name of the knitr chunk. If this also resolves to NULL (for instance, when you aren't using knitr, the label tab:pixie-[n] is assigned, where [n] is the current value of `options()$pixie_count`. Note that rendering multiple tables in a chunk without specifying a label will result in label conflicts.

**caption** A character string giving the caption for the table.

**caption_number** logical(1). Should the table caption be prefixed with the table number?

**justify** character(1). Specifies the justification of the table on the page. May be "center" (default), "left", or "right".

**float** A logical used only in LaTeX output. When TRUE, the table is set within a `table` environment. The default is TRUE, as with xtable.

**longtable** Allows the user to print a table in multiple sections. This is useful when a table has more rows than will fit on a printed page. Acceptable inputs are FALSE, indicating that only one table is printed (default); TRUE that the table should be split into multiple tables with the default number of rows per table (see "Longtable"); or a positive integer indicating how many rows per table to include. All other values are interpreted as FALSE. In LaTeX output, remember that after each section, a page break is forced. This setting may also be set from sprinkle.

**hhline** Logical. When FALSE, the default, horizontal LaTeX cell borders are drawn using the \cline command. These don’t necessarily play well with cell backgrounds, however. Using hhline = TRUE prints horizontal borders using the \hhline command. While the hhline output isn’t disrupted by cell backgrounds, it may require more careful coding of the desired borders. In hhline, cells with adjoining borders tend to double up and look thicker than when using cline.

**bookdown** Logical. When TRUE, bookdown style labels are generated. Defaults to FALSE.
borderCollapse
character(1). One of "collapse", "separate", "initial", or "inherit".

tabcolsep
integer(1). For LaTeX output, the distance in pt between columns of the table.

fixedHeader
logical(1). For HTML tables, should the header rows be fixed in place over a scrollable body.

htmlPreserve
logical(1). When TRUE, HTML output is returned wrapped in htmltools::htmlPreserve.
If using LaTeX style equations in an HTML table, it may be necessary to set this to FALSE. Do this at your own risk; this has not been thoroughly field tested.

ungroup
Used when a grouped_df object is passed to dust. When TRUE (the default), the object is ungrouped and dusted as a single table. When FALSE, the object is split and each element is dusted separately.

x
A dust object

table
A data frame of similar dimensions of the part being replaced.

part
The part of the table to replace with table

Details

The head object describes what each column of the table represents. By default, the head is a single row, but multi row headers may be provided. Note that multirow headers may not render in markdown or console output as intended, though rendering in HTML and LaTeX is fairly reliable. In longtables (tables broken over multiple pages), the head appears at the top of each table portion.

The body object gives the main body of information. In long tables, this section is broken into portions, ideally with one portion per page.

The interfoot object is an optional table to be placed at the bottom of longtable portions with the exception of the last portion. A well designed interfoot can convey to the user that the table continues on the next page.

The foot object is the table that appears at the end of the completed table. For model objects, it is recommended that the glance statistics be used to display model fit statistics.

The borderCollapse object applies to an entire HTML table. It indicates if the borders should form a single line or distinct lines.

The longtable object determines how many rows per page are printed. By default, all content is printed as a single table. Using the longtable argument in the sprinkle function can change this setting.

The table_width element is specific to LaTeX tables. This is a reference value for when column widths are specified in terms of the % units. For example, a column width of 20% will be defined as table_width * .20. The value in table_width is assumed to be in inches and defaults to 6.

The tabcolsep object determines the spacing between columns in a LaTeX table in pt. By default, it is set at 6.

The printMethod object determines how the table is rendered when the print method is invoked. The default is to print to the console.

Many of these options may be set globally. See pixiedust for a complete list of package options.
Value

Returns an object of class dust

Symbols and Greek Letters

When using markdown, math symbols and greek letters may be employed as they would within a markdown document. For example, "$\alpha" will render as the lower case Greek alpha. Math symbols may be rendered in the same manner.

Author(s)

Benjamin Nutter

See Also

tidy_glance_foot tidy_levels_labels pixiedust
get_dust_part for extracting parts of the dust object in order to build custom headers and/or footers.

Examples

```r
x <- dust(lm(mpg ~ qsec + factor(am), data = mtcars))
x
```

---

### fixed_header_css

**Generate CSS Code for Fixed Header Tables**

Description

Tables with a fixed header may be generated to permit the headings to remain visible with the data. The CSS is not difficult, but it not-trivial and requires some coordination across a few parts. This function standardizes the generation of the CSS code using as few elements as possible. Note that there is potential for conflicts with existing CSS in this method.

Usage

```r
fixed_header_css(
  fixed_header_class_name = "pixie-fixed",
  scroll_body_height = 300,
  scroll_body_height_units = "px",
  scroll_body_background_color = "white",
  fixed_header_height = 20,
  fixed_header_height_units = "px",
  fixed_header_text_height = fixed_header_height/2,
  fixed_header_text_height_units = "px",
  fixed_header_background_color = "white",
  pretty = TRUE
)
```
Arguments

fixed_header_class_name
  character(1). When include_fixed_header_css = FALSE, this class name is used to reference CSS classes provided by the user to format the table correctly.

scroll_body_height
  integerish(1). Sets the height of the scrollable table body.

scroll_body_height_units
  character(1). Determines the units for the height of the scrollable table. Defaults to "px". Must be one of c("px","pt","%","em").

scroll_body_background_color
  character(1). The color of the background of the body. Must be a valid color. It defaults to white, which may override CSS settings provided by the user. If this needs to be avoided, you may use the fixed_header_css function to assist in generating CSS code to use to define the CSS. See Avoiding CSS Conflicts.

fixed_header_height
  integerish(1). Sets the height of the header row.

fixed_header_height_units
  character(1). Determines the units for the height of the header row. Defaults to "px". Must be one of c("px","pt","%","em").

fixed_header_text_height
  numeric(1). Sets the height at which the header text appears. By default it is set to half of the header height. This should be approximately centered, but you may alter this to get the precise look you want.

fixed_header_text_height_units
  character(1). Determines the units for placing the header text. Defaults to "px". Must be one of c("px","pt","%","em").

fixed_header_background_color
  character(1). Sets the background color for the header row. This defaults to white and may override the user’s CSS settings. See Avoiding CSS Conflicts.

pretty
  logical(1). When TRUE, the result is printed to the console using cat, making it easy to copy and paste the code to another document. When FALSE, it is returned as a character string.

Details

CSS doesn’t make this kind of table natural. The solution to generate the fixed headers used by pixiedust is probably not the best solution in terms of CSS design. It is, however, the most conducive to generating dynamically on the fly.

The fixed header table requires nesting several HTML elements.

1. a div tag is used to control the alignment of the table
2. a section tag is used to set up the header row that remains fixed.
3. a div that sets the height of the scrollable body
4. the table tag establishes the actual table.
5. The \texttt{th} tags inside the table are set to full transparency and the content of the headers is duplicated in a \texttt{div} within the \texttt{th} tag to display the content.

To accomplish these tasks, some CSS is exported with the table and placed in the document immediately before the table. Read further to understand the conflicts that may arise if you are using custom CSS specifications in your documents.

**Avoiding CSS Conflicts**

Because of all of the shenanigans involved, exporting the CSS with the tables may result in conflicts with your custom CSS. Most importantly, any CSS you have applied to the \texttt{th} or \texttt{td} tags may be overwritten. If you are using custom CSS, you may want to consider using include\_fixed\_header\_css = \texttt{FALSE} and then utilizing \texttt{fixed\_header\_css} to generate CSS you can include in your CSS file to provide the fixed headers. The code generated by \texttt{fixed\_header\_css} ought to be placed before your definitions for \texttt{td} and \texttt{th}.

To get the same header design in the fixed table, you will want to modify the \texttt{.th-pixie-fixed} \texttt{div} definition in the CSS to match your desired \texttt{th} definition.

The code produced by \texttt{fixed\_header\_css} will include comments where there is potential for a CSS conflict.

**Functional Requirements**

1. If \texttt{pretty = TRUE} print results to the console.
2. If \texttt{pretty = FALSE} Return a character string of length 1.
3. Cast an error if \texttt{scroll\_body\_height} is not integerish(1)
4. Cast an error if \texttt{scroll\_body\_height\_units} is not character(1)
5. Cast an error if \texttt{scroll\_body\_background\_color} is not character(1)
6. Cast an error if \texttt{scroll\_body\_background\_color} is not a valid color.
7. Cast an error if \texttt{fixed\_header\_height} is not integerish(1)
8. Cast an error if \texttt{fixed\_header\_height\_units} is not character(1)
9. Cast an error if \texttt{fixed\_header\_text\_height} is not numeric(1)
10. Cast an error if \texttt{fixed\_header\_text\_height\_units} is not character(1)
11. Cast an error if \texttt{fixed\_header\_background\_color} is not character(1)
12. Cast an error if \texttt{fixed\_header\_background\_color} is not a valid color.
13. Cast an error if \texttt{pretty} is not logical(1)

**Source**

Jonas Schubert Erlandsson. https://jsfiddle.net/dPixie/byB9d/3/
Mimic Stargazer Output to Display Multiple Models

Description
Tidy multiple models and display coefficients and test statistics in a side-by-side format.

Usage
gaze(
  ..., 
  include_glance = TRUE, 
  glance_vars = c("adj.r.squared", "sigma", "AIC"), 
  digits = 3 
)

Arguments
... models to be tidied. Arguments may be named or unnamed. For named arguments, the model will be identified by the argument name; for unnamed arguments, the object name will be the identifier.

include_glance logical(1) Determines if glance(fit) statistics are displayed under the models.

glance_vars character. A vector of statistics returned by glance that are to be displayed for each model. Defaults are subject to change in future versions.

digits numeric(1) The number of digits used for rounding.

Details
This function is still in development. Significant stars will be added in a future version. Note that function defaults may be subject to change.

Functional Requirements
1. Return a data frame object
2. Cast an error if include_glance is not logical(1)
3. Cast an error if glance_vars is not a character vector.
4. Cast an error if digits is not "integerish(1)".

Examples

fit1 <- lm(mpg ~ qsec + am + wt + gear + factor(vs), data = mtcars)
fit2 <- lm(mpg ~ am + wt + gear + factor(vs), data = mtcars)
gaze(fit1, fit2)
gaze(with_qsec = fit1, 
  without_qsec = fit2)
get_dust_part

Get a Portion of the Table Stored in a dust Object

Description

Making customized table headers and footers requires a data frame be added to the dust object that has the same column dimension as the rest of the table. In order to reduce the inconvenience of counting columns, get_dust_part extracts the data frame portion currently in use. This ensures the column dimension is correct with the current values, and provides an object suitable for editing.

Usage

get_dust_part(x, part = c("head", "foot", "interfoot", "body"))

Arguments

x An object of class dust

part character(1), naming the part of the table to retrieve. May be one of "head", "foot", "interfoot", or "body".

Value

an object of class data.frame

Functional Requirements

1. Return, as a data frame, the part of the table requested in part
2. Cast an error if x is not a dust object.
3. Cast an error if part is not one of c("head", "foot", "interfoot", "body")

glance_foot

Prepare Glance Statistics for pixiedust Table Footer

Description

Retrieves the broom::glance output for a model object and structures it into a table suitable to be placed in the footer. By default, the statistics are displayed in two column-pairings (see Details). This function is not exported but is documented to maintain clarity of its behavior. It is intended for use within dust, but may be useful elsewhere if used with caution.
Usage

glance_foot(fit, col_pairs, total_cols, glance_stats = NULL, byrow = FALSE)

Arguments

fit A model object with a broom::glance method.

col_pairs An integer indicating the number of column-pairings for the glance output. This must be less than half the total number of columns, as each column-pairing includes a statistic name and value.

total_cols The total number of columns in the body of the pixiedust table.

glance_stats A character vector giving the names of the glance statistics to put in the output. When NULL, the default, all of the available statistics are retrieved. In addition to controlling which statistics are printed, this also controls the order in which they are printed.

byrow A logical, defaulting to FALSE, that indicates if the requested statistics are placed with priority to rows or columns. See Details.

Details

Statistics are placed in column-pairings. Each column pair consists of two columns named stat_name_x and stat_value_x, where x is the integer index of the column pair. The column-pairings are used to allow the user to further customize the output, more-so than pasting the name and value together would allow. With this design, statistics can be rounded differently by applying sprinkles to the resulting table.

The total number of column-pairings must be less than or equal to half the number of total columns. This constraint prevents making glance tables that have more columns than the model table it accompanies.

When the total number of column-pairings is strictly less than half the total number of columns, "filler" columns are placed between the column pairings. As much as possible, the filler columns are placed evenly between the column pairings, but when the number of filler columns is unequal between column-pairings, there will be more space placed on the left side. For example, if a table has 7 columns and 3 column-pairings, the order of placement would be column-pair-1, filler, column-pair-2, column-pair-3. Since there was only room for one column of filler, it was placed in the left most fill position.

The byrow arguments acts similarly to the byrow argument in the matrix function, but defaults to FALSE. If four statistics are requested and byrow = FALSE, the left column-pair will have statistics one and two, while the right column-pair will have statistics three and four. If byrow = TRUE, however, the left column-pair will have statistics one and three, while the right column-pair will have statistics two and four.

Author(s)

Benjamin Nutter
index_to_sprinkle  

Determine the Indices to Sprinkle

Description

The sprinkle methods accept the rows and columns that are to be modified as matrix coordinates. The dust object stores the table data in a long form. The tabular coordinates are translated into row indices using this function.

Usage

```r
index_to_sprinkle(
  x,
  rows = NULL,
  cols = NULL,
  fixed = FALSE,
  part = c("body", "head", "foot", "interfoot"),
  recycle = c("none", "rows", "cols", "columns"),
  coll = NULL
)
```

Arguments

- **x**  
  An object of class dust.

- **rows**  
  Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.

- **cols**  
  Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

- **fixed**  
  `logical(1)` indicating if the values in `rows` and `cols` should be read as fixed coordinate pairs. See Details.

- **part**  
  character string. Specifies if the sprinkles are being applied to the head, body, foot, or interfoot of the table. Partial matching is supported.

- **recycle**  
  character string. Indicates how recycling is to be performed. Partial matching is supported. See Details.

- **coll**  
  An optional AssertCollection object. When `NULL`, an AssertCollection object will be created and reported within the call to this function. When not `NULL`, any failed assertions will be added to the object in reported in the function that called `index_to_sprinkle`. 
Details

When fixed = FALSE, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

The value of recycle determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right). "cols" and "columns" have the same effect. The two choices to specify are motivated by the fact that I sometimes get confused about which it should be. :) 

Functional Requirements

1. Return the indices of the intersection of rows and cols
2. If rows = NULL, assume all rows.
3. If rows is an expression where no values resolve to TRUE, return x unchanged.
4. If any value in rows is not a valid row in the table, cast an error.
5. If cols = NULL, assume all columns.
6. If any value in cols does not identify a column in the table, cast an error.
7. If fixed = TRUE, length(rows) (or sum(rows), if an expression) and cols must have the same length.
8. Cast an error if fixed is not a logical(1)
9. Cast an error if part is not one of "body", "head", "foot", or "interfoot".

Author(s)

Benjamin Nutter

See Also

sprinkle

Usage

is_valid_color(color)

is_valid_color_single(color)

Description

pixiedust recognizes colors as dvips names, rgb(R,G,B), rgba(R,G,B,A), #RRGGBB, or #RRGGBBAA. This code returns a logical indicating if the given character strings are valid.
Arguments

- **color**: A character vector of color names.

Functional Requirements

1. Returns a logical vector correctly identifying valid color formats.
2. Casts an error if `color` is not a character object.

---

**medley**

**Sprinkle Medleys**

`pixiedust` can get to be pretty verbose if you are doing a great deal of customization. Sprinkle medleys can take out some of that code by bundling much of the formatting sprinkling into a single function.

`pixiedust` comes with a couple very basic medleys that are mostly for illustration of how to write medleys. Once you get the hang of sprinkling, you need only bundle your most common sprinkles into a medley function of your own and cut down on some of the time coding your most basic formatting.
Usage

medley_bw(x)

medley_model(x, round = 2)

Arguments

x

a dust object.

round

A numerical value passed to the round sprinkle.

Author(s)

Benjamin Nutter

Examples

## Not run:
fit <- lm(mpg ~ qsec + factor(am) + wt * factor(gear), data = mtcars)

dust(fit) %>%
  medley_bw() %>%
  sprinkle_print_method("html")

dust(fit, glance_foot = TRUE) %>%
  medley_model() %>%
  sprinkle_print_method("html")

# Medleys are not generics and do not have methods.
# Using a medley on a dust_list object requires pixieply

library(dplyr)
mtcars %>%
  group_by(gear) %>%
  dust(ungroup = FALSE) %>%
  pixieply(medley_bw) %>%
  sprinkle_print_method("html")

## End(Not run)

---

**medley_allBorders**

*Apply Cell Borders to All Cells in a Region*

Description

For most output, specifying a region of cells with borders on all sides is as simple as giving the sprinkle border = "all". In LaTeX output, however, this can result in thicker than expected vertical borders. This medley provides a LaTeX save approach to drawing borders on all sides without getting the double vertical border effect.
Usage

```r
medley_allBorders(
  x,
  rows = NULL,
  cols = NULL,
  horizontal = TRUE,
  vertical = TRUE,
  part = "body"
)
```

Arguments

- **x** An object of class dust
- **rows** The rows over which the borders are to be drawn.
- **cols** The cols over which the borders are to be drawn.
- **horizontal** Logical. Toggles horizontal borders.
- **vertical** Logical. Toggles vertical borders.
- **part** A character vector. May contain any of "body", "head", "interfoot", "foot", "table". When any element is "table", the borders are drawn in all parts of the table.

Author(s)

Benjamin Nutter

Description

The **pixiedust** mission is to provide a user friendly and flexible interface by which report-quality tables may be rendered in multiple output formats. Initially, **pixiedust** will support markdown, HTML, and LaTeX formats, as well as methods for console output.

Details

The advantage of **pixiedust** is that it gives you the control to alter the appearance of a table by as little as one cell at a time. This fine-tuned control gives you enormous flexibility in how the final table looks with minimal pre and post processing.

Additionally, **pixiedust** is largely built on top of the **broom** package, allowing for simple and fast generation of tables based on analytical results.

The chief disadvantage of **pixiedust** is that it can be extremely verbose. If you are applying many customizations, you will find yourself writing a great deal of code.
Options

pixie_bookdown determines if references and labels are managed using the bookdown package methods. This should be set to TRUE if you are rendering documents via the bookdown package.

border_collapse determines the settings for border styles in HTML tables. The most common values are "collapse" - which presses all of the borders between cells on top of each other - and "separate" - which allows each cell to have its own, distinct border.

pixie_count is used to manage table numbering in non-LaTeX tables. See set_pixie_count for methods to manipulate the numbering.

pixie_discrete_pal controls the colors for shading by discrete values.

pixie_float determines if tables in LaTeX output are placed in floating environments.

pixie_gradient_pal controls the colors giving the endpoints of the color scale on which to shade numeric values.

pixie_hhline determines if tables in LaTeX output use the hhline package for constructing table cells.

pixie_html_linebreak controls the number of line breaks placed after a table in HTML output.

pixie_interactive Allows control over whether HTML and markdown tables are printed to the viewer or to the document.

pixie_justify controls the positioning of the complete table in the document. Note that "none" renders the table to the left side of the page, and subsequent elements will appear below the table. When using "left", subsequent elements will appear to the right of the table. When using "right", subsequent elements will appear to the left of the table.

pixie_longtable determines if the longtable environment is used in LaTeX output.

pixie_na_string sets the default character set for replacing NA values in tables.

pixie_tabcolsep determines the spacing placed between cells in LaTeX output.

pixiedust_print_method Sets the default printing method for tables. When pixiedust is being used with knitr and rmarkdown, the default is the value of knitr::opts_knit$get("rmarkdown.pandoc.to"), otherwise it is "console"

Table-Valued Options

<table>
<thead>
<tr>
<th>Option Name</th>
<th>Default</th>
<th>Permissible Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>pixie_bookdown</td>
<td>FALSE</td>
<td>logical</td>
</tr>
<tr>
<td>pixie_border-collapse</td>
<td>&quot;collapse&quot;</td>
<td>collapse, separate, initial, inherit</td>
</tr>
<tr>
<td>pixie_count</td>
<td>0</td>
<td>integer like value</td>
</tr>
<tr>
<td>pixie_float</td>
<td>TRUE</td>
<td>logical</td>
</tr>
<tr>
<td>pixie_hhline</td>
<td>FALSE</td>
<td>logical</td>
</tr>
<tr>
<td>pixie_html_linebreak</td>
<td>2</td>
<td>integer like value</td>
</tr>
<tr>
<td>pixie_justify</td>
<td>&quot;center&quot;</td>
<td>center, none, left, right</td>
</tr>
<tr>
<td>pixie_longtable</td>
<td>FALSE</td>
<td>logical</td>
</tr>
<tr>
<td>pixie_tabcolsep</td>
<td>6</td>
<td>integer like value</td>
</tr>
<tr>
<td>pixiedust_print_method</td>
<td></td>
<td>console, html, latex, markdown, beamer</td>
</tr>
</tbody>
</table>
Cell-Valued Options

<table>
<thead>
<tr>
<th>Option Name</th>
<th>Default</th>
<th>Permissible Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>pixie_discrete_pal</td>
<td>scales::hue_pal()</td>
<td>character of valid colors</td>
</tr>
<tr>
<td>pixie_gradient_pal</td>
<td>c(&quot;#132B43&quot;, &quot;#56B1F7&quot;)</td>
<td>character(2) of valid colors</td>
</tr>
<tr>
<td>pixie_na_string</td>
<td>NA</td>
<td>character</td>
</tr>
</tbody>
</table>

pixiedust_print_method

*Determine the Current Print Method*

**Description**

The user has the option of designating the print method to use, or allowing package to select one from the knitr settings. This function manages the logic of assigning the correct print method within the dust call.

**Usage**

pixiedust_print_method()

**Details**

The function pixiedust_print_method first uses getOption("pixiedust_print_method") to determine if the user has set a print method. If the user has not, it then looks to knitr::opts_knit$get("rmarkdown.pandoc.output_format") method. Finally, if this is also NULL, then the option is set to "console".

pixieply

*Apply Functions Over ‘dust_list’ Objects*

**Description**

The sprinkle methods work with dust_list objects very naturally, but medleys pose a slightly more difficult problem. Medleys are intended to be predefined collections of sprinkles that reduce the time required to format a table with a particular look and style. It seems counter-productive to expect a user to define each of her or his medleys as a method that can work with both dust and dust_list objects. pixieply is a wrapper to `lapply` that preserves the dust_list class of the object.

pixiemap provides functionality to apply differing sprinkles over each element of a dust_list. The most common example is probably adding a unique caption to each table.
Usage

pixieply(X, FUN, ...)

pixiemap(X, FUN, ..., MoreArgs = NULL, SIMPLIFY = FALSE, USE.NAMES = TRUE)

Arguments

X An object of class dust_list.

FUN A function to apply to each element of X

... Additional arguments to pass to FUN

MoreArgs a list of other arguments to FUN

SIMPLIFY logical or character string; attempt to reduce the result to a vector, matrix or higher dimensional array; see the simplify argument of sapply

USE.NAMES logical; use names if the first ... argument has names, or if it is a character vector, use that character vector as the names.

Examples

## Not run:
#* This example will only display the last table
#* in the viewer pane. To see the full output,
#* run this example in an Rmarkdown document.
x <- split(mtcars, list(mtcars$am, mtcars$vs))
dust(x) %>%
  sprinkle_print_method("html") %>%
pixieply(medley_bw)

## End(Not run)

## Not run:
#* This is the full text of an RMarkdown script
#* for the previous example.
---
title: "Pixieply"
output: html_document
---
```r
library(pixiedust)
x <- dplyr::group_by(mtcars, am, vs)
dust(x, ungroup = FALSE) %>%
  sprinkle_print_method("html") %>%
pixieply(medley_bw)
```

## End(Not run)
pixie_count

Access and manipulate table numbers counters

Description

While LaTeX provides the ability to automatically number tables, this functionality is not readily available with console, HTML, or Word output. By keep track of the number of (captioned) tables, we can mimic the behavior of LaTeX tables to provide (mostly) consistent table numbering between formats. The table numbering is stored in the pixie_count option.

Usage

- `get_pixie_count()`
- `set_pixie_count(value)`
- `increment_pixie_count(increment = 1)`

Arguments

- `value`: The value at which to set the pixie counter.
- `increment`: The value to add to the current pixie count. Defaults to 1.

Details

The pixie count is stored in the options and may also be accessed using `getOption("pixie_count")`. `get_pixie_count` returns the current value of the counter. `set_pixie_count` sets the value to the user-specification. `increment_pixie_count` increments the pixie count, usually by 1. This is called within `print.dust` any time a dust object has a caption.

Author(s)

Benjamin Nutter

Source

The concept for these functions is loosely based on a hook meant to work with knitr to automatically number tables. [http://stackoverflow.com/a/18672268/1017276](http://stackoverflow.com/a/18672268/1017276)
### Description

Apply the formatting to a dust object and print the table.

### Usage

```r
## S3 method for class 'dust'
print(x, ..., asis = TRUE, linebreak_at_end = 2)

## S3 method for class 'dust_list'
print(x, ..., asis = TRUE)
```

### Arguments

- `x`:
  - An object of class `dust`
- `...`:
  - Additional arguments to pass to the print method. Currently ignored.
- `asis`:
  - A logical value that controls if the output is printed using `knitr::asis_output`. See Details.
- `linebreak_at_end`:
  - Used only in HTML tables; defines the number of line break tags `<br>` appended to the end of the table in order to generate whitespace between the end of the table and the subsequent element. By default, two line breaks are used.

### Details

The printing format is drawn from `options()$dustpan_output` and may take any of the values "console", "markdown", "html", or "latex".

The markdown, html, and latex output is returned via `asis_output`, which forces the output into the `asis` environment. It is intended to work with Rmarkdown, and the tables will be rendered regardless of the chunk's `results` argument. Currently, there is no way to capture the code for additional post processing.

When `asis = TRUE` (the default), the output is returned via `knitr::asis_output`, which renders the output as if the chunk options included `results = 'asis'`. Under this setting, the table will be rendered regardless of the value of the `results` option. Using `asis = FALSE` returns a character string with the code for the table. This may be rendered in a markdown document via `cat(print(x, asis = FALSE))` with the chunk option `results = 'asis'`. (If working with an Rnw file, the chunk option is `results = tex`). The only way to use the `asis` argument is with an explicit call to `print.dust`.

### Author(s)

Benjamin Nutter
Examples

dust(lm(mpg ~ qsec + factor(am), data = mtcars))

dust_string

Format P-values for Reports

Description

Convert numeric p-values to character strings according to pre-defined formatting parameters. Additional formats may be added for required or desired reporting standards.

Usage

pval_string(p, format = c("default", "exact", "scientific"), digits = 3, ...)
pvalString(p, format = c("default", "exact", "scientific"), digits = 3, ...)

Arguments

p a numeric vector of p-values.
format A character string indicating the desired format for the p-values. See Details for full descriptions.
digits For "exact" and "scientific": indicates the number of digits to precede scientific notation.
... Additional arguments to be passed to format

Details

When format = "default", p-values are formatted:

1. \( p > 0.99 \): "> 0.99"
2. \( 0.99 > p > 0.10 \): Rounded to two digits
3. \( 0.10 > p > 0.001 \): Rounded to three digits
4. \( 0.001 > p \): "> < 0.001"

When format = "exact", the exact p-value is printed with the number of places after the decimal equal to digits. P-values smaller that \( 1*10^{-\text{digits}} \) are printed in scientific notation.

When format = "scientific", all values are printed in scientific notation with digits digits printed before the e.
**Functional Requirements**

1. When `format = "default"`, print p-values greater than 0.99 as "> 0.99"; greater than 0.10 with two digits; greater than 0.001 with three digits; and less than 0.001 as "<< 0.001".

2. when `format = "exact"`, print the exact p-value out to at most digits places past the decimal place.

3. When `format = "scientific"`, print the p-value in scientific notation with up to digits values ahead of the e.

4. Cast an error if p is not numeric on the interval [0, 1]

5. Cast an error if format is not one of c("default","exact","scientific").

6. Cast an error if digits is not integerish(1).

**Author(s)**

Benjamin Nutter

**Examples**

```r
p <- c(1, .999, .905, .505, .205, .125, .09531, .05493, .04532, .011234, .0003431, .000000342)
pvalString(p, format="default")
pvalString(p, format="exact", digits=3)
pvalString(p, format="exact", digits=2)
pvalString(p, format="scientific", digits=3)
pvalString(p, format="scientific", digits=4)
```

---

**rbind_internal**

*Bind Rows in Base R*

**Description**

Stack data frames on top of each other. Data frames do not have to have all of the same columns.

**Usage**

```r
.rbind_internal(..., deparse.level = 1)
```

**Arguments**

... data frames
deparse.level See deparse.level in rbind.

**Author(s)**

Benjamin Nutter
**reshape_data_internal**  
*Reshape data frames for Pixiedust*

**Description**
Pixiedust reshapes data to have one row per cell in the table. This permits adjustments to be made to individual cells. These internal functions are provided to simplify the reshaping process. It is slower than using the tidyr functions `gather` and `spread` (or whatever their newer counterparts are), but keeps me off of other people’s development schedules.

**Usage**

```
.make_dataframe_long(data)
```

**Arguments**

- `data`: A data.frame

**Details**
No validations are performed in these functions, and it is assumed that the input data set has the components it needs.

**Author(s)**
Benjamin Nutter

---

**sanitize_latex**  
*Escape Characters for Printing in LaTeX Output*

**Description**
`sanitize_latex` translates particular items in character strings to LaTeX format, e.g., makes $a^2 = a^2$ for superscript within variable labels. LaTeX names of greek letters (e.g., "alpha") will have backslashes added if `greek==TRUE`. Math mode is inserted as needed. `sanitize_latex` assumes that input text always has matches, e.g. `[]` `[]` `()`, and that surrounding by \$\$ is OK.

**Usage**

```
sanitize_latex(
    object,
    inn = NULL,
    out = NULL,
    pb = FALSE,
    greek = FALSE,
    na = "",
    ...
)
```

Arguments

object  character vector of strings to translate. Any NAs are set to blank strings before conversion.
in  character vector. Additional strings to translate.
out  character vector the same length as inn. This gives the translated value of the corresponding element in inn
pb  logical(1) If pb=TRUE, sanitize_latex also translates \( [()] \) to math mode using \left, \right.
greek  logical(1). set to TRUE to have sanitize_latex put names for greek letters in math mode and add backslashes.
na  character(1) Single character string to translate NA values to.
...  Additional arguments for other methods. Currently ignored.

Value

Vector of character strings.

Author(s)

This code is lifted from the Hmisc package in order to avoid depending on that package.
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See Also

Hmisc::latexTranslate, Hmisc::sedit

Examples

sanitize_latex("75% of the cars were | more than $20,000 Delta = 1.30", greek = TRUE)
**spinkle**  
*Define Customizations to a Table*

**Description**
Customizations to a dust table are added by "sprinkling" with a little extra pixie dust. Sprinkles are a collection of attributes to be applied over a subset of table cells. They may be added to any part of the table, or to the table as a whole.

**Usage**
```r
sprinkle(
  x,
  rows = NULL,
  cols = NULL,
  ...
  part = c("body", "head", "foot", "interfoot", "table")
)
```

## Default S3 method:
```r
sprinkle(
  x,
  rows = NULL,
  cols = NULL,
  ...
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns")
)
```

## S3 method for class 'dust_list'
```r
sprinkle(
  x,
  rows = NULL,
  cols = NULL,
  ...
  part = c("body", "head", "foot", "interfoot", "table")
)
```

sprinkle_print_method(  
  x,  
  print_method = c("console", "markdown", "html", "latex")
)

## Default S3 method:
```r
sprinkle_print_method(  
  x,
)
```
print_method = c("console", "markdown", "html", "latex", "docx")
#
## S3 method for class 'dust_list'
sprinkle_print_method(
  x,
  print_method = c("console", "markdown", "html", "latex")
)

sprinkle_table(x, cols = NULL, ..., part = "table")
## Default S3 method:
sprinkle_table(x, cols = NULL, ..., part = "table")
## S3 method for class 'dust_list'
sprinkle_table(x, cols = NULL, ..., part = "table")

Arguments

x A dust object
rows A numeric vector specifying the rows of the table to sprinkle. See details for more about sprinkling.
cols A numeric (or character) vector specifying the columns (or column names) to sprinkle. See details for more about sprinkling.
... named arguments, each of length 1, defining the customizations for the given cells. See "Sprinkles" for a listing of these arguments.
part A character string denoting which part of the table to modify.
fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.
recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).
print_method A character string giving the print method for the table. Note: "docx" is synonymous with "markdown".

Details

Sprinkling is done over the intersection of rows and columns (unless fixed = TRUE. If rows but no columns are specified, sprinkling is performed over all columns of the given given rows. The reverse is true for when columns but no rows are specified. If neither columns nor rows are specified, the attribute is applied over all of the cells in the table part denoted in part.

If at least one of border, border_thickness, border_units, border_style or border_color is specified, the remaining unspecified attributes assume their default values.
Other sprinkle pairings are height and height_units; width and width_units; font_size and font_size_units; bg_pattern and bg_pattern_by

The sprinkles bg and bg_pattern may not be used together.

A more detailed demonstration of the use of sprinkles is available in vignette("pixiedust", package = "pixiedust")

Using sprinkle_table, sprinkles may be applied to the columns of multiple tables. Table parts are required to have the same number of columns, but not necessarily the same number of rows, which is why the rows argument is not available for the sprinkle_table. In contrast to sprinkle, the part argument in sprinkle_table will accept multiple parts. If any of the named parts is "table", the sprinkle will be applied to the columns of all of the parts.

Sprinkles

The following table describes the valid sprinkles that may be defined in the ... dots argument. All sprinkles may be defined for any output type, but only sprinkles recognized by that output type will be applied when printed. A more readable format of this information is available in vignette("sprinkles", package = "pixiedust").

<table>
<thead>
<tr>
<th>bg</th>
<th>action</th>
<th>Modifies the background color of a cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>dvips color names; rgb(R,G,B); rgba(R,G,B,A); #RRGGBB; #RRGGBBAA. See the &quot;Colors&quot; section for further details.</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Accepts any of the listed formats; recognizes transparency</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Accepts any of the listed formats, but ignores transparency</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>bg_pattern</th>
<th>action</th>
<th>Generates a pattern of background colors. Can be used to make striping by rows or by columns.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td>c(&quot;#FFFFFF&quot;, &quot;#DDDDDD&quot;)</td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>dvips color names; rgb(R,G,B); rgba(R,G,B,A); #RRGGBB; #RRGGBBAA</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Accepts any of the listed formats; recognizes transparency</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Accepts any of the listed formats, but ignores transparency</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>bg_pattern_by</th>
<th>action</th>
<th>Determines if a ‘bg_pattern’ is patterned by row or by columns.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td>&quot;rows&quot;</td>
</tr>
<tr>
<td><strong>bold</strong></td>
<td>action</td>
<td>Renders text within a cell in bold.</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>default</td>
<td>FALSE</td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>logical(1)</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Recognized; rendered as double asterisks on either side of the text</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>borderCollapse</strong></th>
<th>action</th>
<th>Sets the ‘border-collapse’ property in an HTML table. The property sets whether the table borders are collapsed into a single border or detached as in standard HTML.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td>TRUE</td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>logical(1)</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Not recognized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>border</strong></th>
<th>action</th>
<th>Sets a border on the specified side of a cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>Any combination of &quot;all&quot;, &quot;bottom&quot;, &quot;left&quot;, &quot;top&quot;, &quot;right&quot;. Using &quot;all&quot; results in all borders being drawn, regardless of what other values are passed with it.</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>borderColor</strong></th>
<th>action</th>
<th>Sets the color of the borders specified for a cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td>&quot;Black&quot;</td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>character(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dvips color names; rgb(R,G,B); rgba(R,G,B,A); #RRGGBB; #RRGGBBAA. See the &quot;Colors&quot; section for further details.</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
</tr>
</tbody>
</table>

<p>| <strong>borderStyle</strong> |</p>
<table>
<thead>
<tr>
<th>action</th>
<th>Sets the border style for a specified cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>&quot;solid&quot;</td>
</tr>
<tr>
<td>accepts</td>
<td>character(1)</td>
</tr>
<tr>
<td></td>
<td>&quot;solid&quot;, &quot;dashed&quot;, &quot;dotted&quot;, &quot;double&quot;, &quot;groove&quot;, &quot;ridge&quot;, &quot;inset&quot;, &quot;outset&quot;, &quot;hidden&quot;, &quot;none&quot;</td>
</tr>
<tr>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td>html</td>
<td>Accepts any of the values listed.</td>
</tr>
<tr>
<td>latex; hline = FALSE</td>
<td>accepts &quot;solid&quot;, &quot;dashed&quot;, &quot;dotted&quot;, &quot;hidden&quot;, &quot;none&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;dotted&quot; is silently changed to &quot;dashed&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;hidden&quot; and &quot;none&quot; are equivalent.</td>
</tr>
<tr>
<td>latex; hline = TRUE</td>
<td>accepts &quot;solid&quot;, &quot;double&quot;, &quot;hidden&quot;, &quot;none&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;hidden&quot; and &quot;none&quot; are equivalent.</td>
</tr>
<tr>
<td>border_thickness</td>
<td>Sets the thickness of the specified border</td>
</tr>
<tr>
<td>default</td>
<td>1</td>
</tr>
<tr>
<td>accepts</td>
<td>numeric(1)</td>
</tr>
<tr>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td>latex</td>
<td>Recognized</td>
</tr>
<tr>
<td>border_units</td>
<td>Sets the unit of measure for the specified border thickness</td>
</tr>
<tr>
<td>default</td>
<td>&quot;pt&quot;</td>
</tr>
<tr>
<td>accepts</td>
<td>&quot;pt&quot;, &quot;px&quot;</td>
</tr>
<tr>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td>latex</td>
<td>Silently changes &quot;px&quot; to &quot;pt&quot;</td>
</tr>
<tr>
<td>caption</td>
<td>Adds or alters the 'caption' property</td>
</tr>
<tr>
<td>default</td>
<td>character(1)</td>
</tr>
<tr>
<td>accepts</td>
<td>Recognized</td>
</tr>
<tr>
<td>console</td>
<td>Recognized</td>
</tr>
<tr>
<td>markdown</td>
<td>Recognized</td>
</tr>
<tr>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td>latex</td>
<td>Recognized</td>
</tr>
<tr>
<td>discrete</td>
<td>Adds distinct background colors based on discrete values in the selected region.</td>
</tr>
<tr>
<td></td>
<td>May not be used concurrently with bg.</td>
</tr>
<tr>
<td></td>
<td>&quot;font&quot; is an alias for &quot;font_color&quot;</td>
</tr>
<tr>
<td></td>
<td>and &quot;border&quot; is an alias for all borders.</td>
</tr>
<tr>
<td>default</td>
<td>&quot;bg&quot;</td>
</tr>
<tr>
<td>accepts</td>
<td>&quot;bg&quot;, &quot;font&quot;, &quot;font_color&quot;, &quot;border&quot;,</td>
</tr>
</tbody>
</table>
**discrete_color**

**action**
Sets the color palette from which `discrete` selects background colors. If `NULL` colors are automatically selected using the `scales` package.

**default**
`getOption("pixie_discrete_pal", NULL)`

**accepts**
character

**font_color**

**action**
Sets the color of the cell text

**default**
Black

**accepts**
dvips color names; rgb(R,G,B); rgba(R,G,B,A);
#RRGGBB; #RRGGBBAA. See the "Colors" section for further details.

**font_family**

**action**
Sets the font for the text
default Times New Roman
accepts character(1)
http://www.w3schools.com/cssref/css_websafe_fonts.asp

console Not recognized
markdown Not recognized
html Recognized
latex Not recognized

**font_size**

action Sets the size of the font in the cell

default numeric(1)

console Not recognized
markdown Not recognized
html Recognized
latex Recognized

**font_size_units**

action Determines the units in which 'font_size' is measured

default "px"

accepts "px", "pt", "%", "em"

console Not recognized
markdown Not recognized
html Recognized
latex Recognized

Only recognizes "pt" and "em". All others are coerced to "pt"

**gradient**

action Adds distinct background colors based on progressively increasing values in the selected region. May not be used concurrently with bg. "font" is an alias for "font_color" and "border" is an alias for all borders.

default "bg"

accepts "bg", "font", "font_color", "border",
"left_border", "top_border", "right_border",
"bottom_border"

console Not recognized
markdown Not recognized
html Recognized
latex Recognized

**gradient_colors**

action Provides the colors between which to shade gradients.

default getOptions("pixie_gradient_pal", NULL)

accepts character

console Not recognized
markdown Not recognized
### gradient_cut

**action**
Determines the breaks points for the gradient shading. When **NULL** equally spaced quantiles are used, the number of which are determined by `gradient_n`.

**default**
NULL

**accepts**
numeric

### gradient_n

**action**
Determines the number of shades to use between the colors in `gradient_colors`.

**default**
10

**accepts**
numeric

### gradient_na

**action**
Sets the color of NA values when gradients are shaded.

**default**
grey

**accepts**
character(1)

### halign

**action**
Sets the horizontal alignment of the text in the cell

**default**
"left", "center", "right"

**accepts**
Not recognized

### height

**action**
Sets the height of the cell

**default**
numeric(1)
<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Default</th>
<th>Accepts</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>height_units</td>
<td>action</td>
<td>Determines the units in which 'height' is measured</td>
<td>&quot;pt&quot;</td>
<td>&quot;px&quot;, &quot;pt&quot;, &quot;cm&quot;, &quot;in&quot;, &quot;%&quot;</td>
</tr>
<tr>
<td></td>
<td>default</td>
<td>&quot;pt&quot;</td>
<td>&quot;px&quot;, &quot;pt&quot;, &quot;cm&quot;, &quot;in&quot;, &quot;%&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
<td>Recognized</td>
<td>&quot;px&quot; is coerced to &quot;pt&quot;</td>
</tr>
<tr>
<td>hhline</td>
<td>action</td>
<td>Toggles the option for cell border drawing with the 'hhline' LaTeX package</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>default</td>
<td>FALSE</td>
<td>logical(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
<td>Recognized</td>
<td>When 'FALSE', double borders are not available. When 'TRUE', colored and dashed borders are not available. This is usually the better option when using colored backgrounds in table cells.</td>
</tr>
<tr>
<td>italic</td>
<td>action</td>
<td>Renders the text in the cell in italic</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>default</td>
<td>FALSE</td>
<td>logical(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>Recognized</td>
<td>Recognized</td>
<td>rendered as an underscore on either side of the text.</td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td>justify</td>
<td>action</td>
<td>Justifies the entire table on the page.</td>
<td>&quot;center&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>default</td>
<td>&quot;center&quot;</td>
<td>character(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepts</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>console</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>markdown</td>
<td>Not recognized</td>
<td>Not recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>html</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td></td>
<td>latex</td>
<td>Recognized</td>
<td>Recognized</td>
<td></td>
</tr>
<tr>
<td>longtable</td>
<td>action</td>
<td>Toggles the use of the LaTeX 'longtable' style</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>tables, namely allowing long tables to be broken</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
into multiple sections. The table header appears at the top of each section. The table interfoot appears at the bottom of each section, except for the last. The table foot appears at the bottom of the last section. May accept either a logical or a numerical value. If numerical, each section will have the specified number of rows.

**merge**

**action**

Merges cells in the specified range into a single cell. In cases where either `merge_rowval` or `merge_colval` is specified, they will only be honored if `merge = TRUE`. You must opt in to this action.

**default** TRUE

**accepts**

logical(1); numeric(1)

**console** Recognized

**markdown** Recognized

**html** Recognized

**latex** Recognized

**merge_rowval**

**action**

Specifies the row value of the merged range to print in the table

**default** minimum row value of the merged range

**accepts** numeric(1)

**console** Recognized

**markdown** Recognized

**html** Recognized

**latex** Recognized

**merge_colval**

**action**

Specifies the column value of the merged range to print in the table

**default** minimum col value of the merged range

**accepts** numeric(1)
na_string
action Designates the character string to use in place of missing values
default NA
accepts character(1)

replace
action Replaces existing cell values with user-specified content. Replacement occurs moving down columns from left to right.
default
accepts character vector of the same length as the number of cells being replaced.

rotate_degree
action Rotates text in cells by the designated angle in degrees
default
accepts numeric(1)

round
action Applies the `round` function to values in the cell. Skips any character values it encounters.
defaultgetOption("digits")
accepts numeric(1)
| **sanitize** |
|------------------|----------------------------------|
| **action**      | Sanitizes character values that may cause difficulties for the rendered format. |
| **default**     | FALSE                            |
| **accepts**     | logical(1)                       |

<table>
<thead>
<tr>
<th><strong>sanitize_args</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>action</strong></td>
</tr>
<tr>
<td><strong>default</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>tabcolsep</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>action</strong></td>
</tr>
<tr>
<td><strong>default</strong></td>
</tr>
<tr>
<td><strong>accepts</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>valign</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>action</strong></td>
</tr>
<tr>
<td><strong>default</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>width</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>action</strong></td>
</tr>
</tbody>
</table>
width_units

<table>
<thead>
<tr>
<th>action</th>
<th>Determines the units in which 'width' is measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>&quot;pt&quot;</td>
</tr>
<tr>
<td>accepts</td>
<td>&quot;px&quot;, &quot;pt&quot;, &quot;cm&quot;, &quot;in&quot;, &quot;%&quot;</td>
</tr>
<tr>
<td>console</td>
<td>Not recognized</td>
</tr>
<tr>
<td>markdown</td>
<td>Not recognized</td>
</tr>
<tr>
<td>html</td>
<td>Recognized</td>
</tr>
<tr>
<td>latex</td>
<td>Recognized; &quot;px&quot; is coerced to &quot;pt&quot;</td>
</tr>
</tbody>
</table>

**Longtable**

The `longtable` feature is named for the LaTeX package used to break very large tables into multiple pages.

When using the `longtable=TRUE` option, the default number of rows per table is 25 for console, HTML, and markdown output. For LaTeX output, the number of rows is determined by the LaTeX `longtable` package's algorithm. The number of rows per table only considers the content in the body of the table. Consideration for the number of rows in the head and foot are the responsibility of the user.

Whenever a table is broken into multiple parts, each part retains the table head. If any interfoot is provided, it is appended to the bottom of each section, with the exception of the last section. The last section has the foot appended.

**Colors**

Colors may be declared as any of the color names in `colors()`, as rgb character strings such as "rgb(rrr,ggg,bbb)" or as hexadecimal character strings such as "#rrggbb".

Transparency is also recognized by HTML output, and may be indicated in the rgba format "rgba(rrr,ggg,bbb,aa)", where aa is a number between 0 and 1, inclusive. Alternative, transparency may be given as "#rrggbbAA", where AA is a hexadecimal representation of transparency with "00" being completely transparent and "FF" being completely opaque.

LaTeX output does not recognize transparency and will quietly drop the transparency parameter.

All colors are internally translated into rgb format and are case insensitive.

**Required LaTeX Packages**

If you will be using the LaTeX output, some sprinkles will require you to include additional LaTeX packages in your document preamble. In .Rnw files, additional packages can be included with the `\usepackage{[package]}` syntax. In markdown, additional packages are included using `header-includes: in the YAML front matter with a line of the format `\usepackage{[package]}` for each package to be used. Sprinkles that require additional packages, and the LaTeX packages required, are listed below:

<table>
<thead>
<tr>
<th>Sprinkle</th>
<th>LaTeX Package(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>font_color</td>
<td><code>\usepackage[dvipsnames]{xcolor}</code></td>
</tr>
<tr>
<td>bg, bg_pattern</td>
<td><code>\usepackage[dvipsnames,table]{xcolor}</code></td>
</tr>
<tr>
<td>border_style</td>
<td><code>\usepackage{arydshln}</code></td>
</tr>
</tbody>
</table>
\usepackage{amssymb}
\usepackage{hhline}

\begin{itemize}
\item \usepackage{graphicx}
\item \makeatletter
\newcommand*{\vdashline}{\rotatebox{90}{$\dabar@$\dabar@$\dabar@$}}
\makeatother
\end{itemize}
\usepackage{longtable}
(Must be loaded before arydshln)
\usepackage{multirow}
\usepackage{caption}
\usepackage{xcolor}
\makeatletter
\newcommand*{\vdashline}{\rotatebox{90}{$\dabar@$\dabar@$\dabar@$}}
\makeatother

Note that hhline is used to make horizontal lines when \texttt{options(pixiedust\_latex\_hhline = TRUE)} (the package default is \texttt{FALSE}), otherwise the cline command is used.

Use of cline permits colored borders and dashed borders, but borders around cells with background colors are sometimes (often) lost.

Use of hhline preserves borders around cells with background colors and permits double borders, but colored and dashed borders are not available.

In order to ensure all features are available, the recommended code block (accounting for the proper order to load packages) is:

\texttt{header-includes:}
\begin{itemize}
\item \usepackage{amssymb}
\item \usepackage{arydshln}
\item \usepackage{caption}
\item \usepackage{graphicx}
\item \usepackage{hhline}
\item \usepackage{longtable}
\item \usepackage{multirow}
\item \usepackage[dvipsnames,table]{xcolor}
\item \makeatletter
\item \newcommand*{\vdashline}{\rotatebox{90}{$\dabar@$\dabar@$\dabar@$}}
\item \makeatother
\end{itemize}

\textbf{Author(s)}

Benjamin Nutter

\textbf{Source}

Altering the number of rows in a LaTeX longtable

Vertical dashed cell borders in LaTeX table
http://www.latex-community.org/forum/viewtopic.php?f=45&t=3149

Colored Cell border
See Also

`sprinkle_colnames` for changing column names in a table.

Examples

```r
x <- dust(lm(mpg ~ qsec + factor(am), data = mtcars))
x %>% sprinkle(cols = 2:4, round = 3) %>%
sprinkle(cols = 5, fn = quote(pvalString(value))) %>%
sprinkle(rows = 2, bold = TRUE)
```

##sprinkle_align

###Sprinkle Alignment of Table Cells

Description

The alignment refers to the positioning of the text within a cell. Alignment may be given relative to the left, center, or right of a cell, and the top, middle, or bottom of the cell.

Usage

```r
sprinkle_align(
  x,
  rows = NULL,
  cols = NULL,
  halign = NULL,
  valign = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

### Default S3 method:

```r
sprinkle_align(
  x,
  rows = NULL,
  cols = NULL,
  halign = NULL,
  valign = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

### S3 method for class 'dust_list'

```r
```
sprinkle_align(
  x,
  rows = NULL,
  cols = NULL,
  halign = NULL,
  valign = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

Arguments

x An object of class dust

rows Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by quote(expression), the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

cols Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

halign character One of "left", "center", or "right". Defaults to NULL, for no change to the current value.

valign character One of "top", "middle", or "bottom". Defaults to NULL, for no change to the current value.

part A character string denoting which part of the table to modify.

fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Correctly reassigns the appropriate elements of halign and valign columns in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if halign is not a character
4. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
5. Casts an error if fixed is not a logical(1)
6. Casts an error if recycle is not one of "none", "rows", or "cols"
7. Casts an error if valign is not a character
8. Cast an error if recycle = "none" and halign does not have length 1.
9. Cast an error if recycle = "none" and valign does not have length 1.
10. Cast an error if halign is not one of c("left","center","right")
11. Cast an error if valign is not one of c("top","middle","bottom")

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for index_to_sprinkle.

See Also

sprinkle, index_to_sprinkle

---

**sprinkle_bg**

_Sprinkle the Background Color of a Cell_

**Description**

Background colors may be used to highlight the contents of cells, rows, or columns. Most commonly, backgrounds are used to provide row discrimination; the sprinkle_bg_pattern function is better suited to that purpose.

**Usage**

```r
sprinkle_bg(
  x,
  rows = NULL,
  cols = NULL,
  bg = "",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## Default S3 method:

```r
sprinkle_bg(
  x,
  rows = NULL,
  cols = NULL,
  bg = "",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```
sprinkle_bg

## S3 method for class 'dust_list'
sprinkle_bg(
  x,
  rows = NULL,
  cols = NULL,
  bg = "",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

sprinkle_background(
  x,
  rows = NULL,
  cols = NULL,
  bg = "",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

Arguments

- **x**
  An object of class dust

- **rows**
  Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

- **cols**
  Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

- **bg**
  character(1) A character string giving a color for the background of the chosen cells.

- **part**
  A character string denoting which part of the table to modify.

- **fixed**
  logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

- **recycle**
  A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

- **...**
  Additional arguments to pass to other methods. Currently ignored.
Details

Colors may be a dvips color name, or in the rgb(R, G, B), rgba(R, G, B, A), #RRGGBB, or #RRGG-BBAA formats.

This sprinkle is ignored in console and markdown outputs. HTML output will accept any of the color formats and recognize transparency. LaTeX output will accept any of the color formats but ignore transparency.

As long as bg is required to be a character(1), the recycle argument is kind of useless. It is included to maintain consistency with the index_to_sprinkle function. Future development may permit a character vector of colors.

Functional Requirements

1. Correctly reassigns the appropriate elements bg column in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if bg is not a character(1)
4. Casts an error if bg is not a valid color format.
5. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
6. Casts an error if fixed is not a logical(1)
7. Casts an error if recycle is not one of "none", "rows", or "cols"
8. Casts an error if recycle = "none" and bg does not have length 1.

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for index_to_sprinkle.

Author(s)

Benjamin Nutter

See Also

sprinkle, sprinkle_bg_pattern, index_to_sprinkle

---

**Row and Column Background Striping**

**Description**

Provides background color striping based on row or column. Striping may be done with any number of colors. The most common use of striping is to provide row discrimination in tables.
**Usage**

```r
sprinkle_bg_pattern(
  x,
  rows = NULL,
  cols = NULL,
  bg_pattern = c("transparent", "#DCDCDC"),
  bg_pattern_by = c("rows", "cols"),
  ...,
  part = c("body", "head", "foot", "interfoot", "table")
)
```

```r
## Default S3 method:
sprinkle_bg_pattern(
  x,
  rows = NULL,
  cols = NULL,
  bg_pattern = c("transparent", "#DCDCDC"),
  bg_pattern_by = c("rows", "cols"),
  ...,
  part = c("body", "head", "foot", "interfoot", "table")
)
```

```r
## S3 method for class 'dust_list'
sprinkle_bg_pattern(
  x,
  rows = NULL,
  cols = NULL,
  bg_pattern = c("transparent", "#DCDCDC"),
  bg_pattern_by = c("rows", "cols"),
  ...,
  part = c("body", "head", "foot", "interfoot", "table")
)
```

**Arguments**

- `x` An object of class `dust`
- `rows` Either a numeric vector of rows in the tabular object to be modified or an object of class `call`. When a `call` is generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.
- `cols` Either a numeric vector of columns in the tabular object to be modified or a character vector of column names. A mixture of character and numeric indices is permissible.
- `bg_pattern` A character vector giving the colors to be iterated in the pattern.
- `bg_pattern_by` A subset of `c("rows", "cols")`, with partial matching accepted. Only the first value is used, and determines the direction of the pattern.
- `...` Additional arguments to pass to other methods. Currently ignored.
part A character string denoting which part of the table to modify.

Functional Requirements

1. Correctly reassigns the appropriate elements bg column in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if bg_pattern is not a character vector.
4. Casts an error if any element in bg_pattern is not a valid color name.
5. Casts an error if bg_pattern_by is not a subset of c("rows","columns") (with partial matching).
6. Casts an error if part is not one of "body", "head", "foot", or "interfoot"

This is a rare sprinkle that doesn’t use the fixed and recycle arguments. They are assumed to be FALSE and "none", respectively, in order to pass through index_to_sprinkle.

See Also

sprinkle_bg, sprinkle, index_to_sprinkle

Description

Tables built for the bookdown package can be referenced in a manner that is consistent between HTML and LaTeX documents.

Usage

sprinkle_bookdown(x, bookdown = getOption("pixie_bookdown", FALSE), ...)

## Default S3 method:
sprinkle_bookdown(x, bookdown = getOption("pixie_bookdown", FALSE), ...)

## S3 method for class 'dust_list'
sprinkle_bookdown(x, bookdown = getOption("pixie_bookdown", FALSE), ...)

Arguments

x An object of class dust
bookdown logical(1) indicating if the table is being produced in a bookdown document.
... Additional arguments to pass to other methods. Currently ignored.
Details

bookdown is a package that facilitates the writing of books. One of the advantages of bookdown is the ability to reference tables in a manner similar to LaTeX. The key difference in how pixiedust handles output is the reference specification. See https://bookdown.org/yihui/bookdown/tables.html for details on how bookdown uses labels and references.

Functional Requirements

1. Change the bookdown attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if bookdown is not a logical object.
4. Cast an error if bookdown has length greater than 1.

Author(s)

Benjamin Nutter

Source

https://bookdown.org/yihui/bookdown/tables.html

See Also

dust, sprinkle

---

**sprinkle_border**  
*Sprinkle Changes to Cell Borders*

Description

Cell borders may be used to give visual structure to a table. Borders may generate distinction between sets of results, groups, or types of output.

Usage

```r
sprinkle_border(
  x,
  rows,
  cols,
  border = c("all", "bottom", "left", "top", "right"),
  border_color = "black",
  border_style = "solid",
  border_thickness = 1,
  border_units = c("pt", "px"),
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
)```

## Default S3 method:
sprinkle_border(x,
  rows = NULL,
  cols = NULL,
  border = c("all", "bottom", "left", "top", "right"),
  border_color = "black",
  border_style = "solid",
  border_thickness = 1,
  border_units = c("pt", "px"),
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...)

## S3 method for class 'dust_list'
sprinkle_border(x,
  rows = NULL,
  cols = NULL,
  border = c("all", "bottom", "left", "top", "right"),
  border_color = "black",
  border_style = "solid",
  border_thickness = 1,
  border_units = c("pt", "px"),
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...)

### Arguments

**x**  
An object of class dust

**rows**  
Either a numeric vector of rows in the tabular object to be modified or an object of class `call`. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

**cols**  
Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

**border**  
One or more of "all", "bottom", "left", "top", or "right". Partial matching is supported. Designates the side of the chosen cells for which borders should
be modified.

border_color character(1) A character string giving a color for the background of the chosen cells. NULL makes no change to the current value.

border_style character(1) setting the border style for the cell. One of "solid", "dashed", "dotted", "double", "groove", "ridge", "inset", "outset", "hidden", or "none". NULL makes no change to the current value.

border_thickness numeric(1) Sets the thickness of the border. NULL makes no change to the current value.

border_units character(1) Sets the unit of measure for the border thickness. May be either "pt", "px". NULL makes no change to the current value.

part A character string denoting which part of the table to modify.

fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Details

This sprinkle has no effect on console and markdown output.

HTML output accepts all of the possible values of border_style.

For LaTeX output, when hhline = FALSE, "solid", "dashed", "dotted", "hidden", and "none" are accepted. "dotted" will silently be treated as "dashed", and "hidden" is the equivalent of "none".

For LaTeX output when hhline = TRUE, "solid", "double", "hidden", and "none" are accepted. "hidden" is the equivalent of "none".

When a value of border_style is not recognized by an output format, it is silently ignored.

Functional Requirements

1. Correctly reassigns the left_border, right_border, top_border and bottom_border columns in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if any element of border is not one of "all", "bottom", "left", "top", or "right".
4. Casts an error if border_color is not a character(1)
5. Casts an error if border_color is not a valid color format.
6. Casts an error if border_style is not one of "solid", "dashed", "dotted", "double", "groove", "ridge", "inset", "outset", "hidden", "none"
7. Casts an error if border_thickness is not a numeric(1).
8. Casts an error if border_units is not one of "pt" or "px".
9. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
10. Casts an error if fixed is not a logical(1)
11. Casts an error if recycle is not one of "none", "rows", or "cols"
12. Cast an error if recycle = "none" and border_color does not have length 1.
13. Cast an error if recycle = "none" and border_style does not have length 1.
14. Cast an error if recycle = "none" and border_thickness does not have length 1.
15. Quietly restrict border_units to just the first element if is has length > 1 and recycle = "none".

Author(s)
Benjamin Nutter

See Also
sprinkle, index_to_sprinkle

sprinkle_border_collapse

Change the Border Collapse Property in a Dust Table

Description
The border_collapse property controls the appearance of cell borders in HTML tables. By default, pixiedust collapses the borders so that the adjoining border of two cells appear as a single border.

Usage
sprinkle_border_collapse(
x,
  border_collapse = getOption("pixie_border_collapse", "collapse"),
  ...
)

## Default S3 method:
sprinkle_border_collapse(
x,
  border_collapse = getOption("pixie_border_collapse", "collapse"),
  ...
)

## S3 method for class 'dust_list'
**sprinkle_borderCollapse**

sprinkle_borderCollapse(
  x,
  borderCollapse =getOption("pixie_borderCollapse", "collapse"),
  ...
)

**Arguments**

- **x** An object of class dust
- **borderCollapse** character(1). Defaults to "collapse", and may accept any of "collapse", "separate", "initial", or "inherit".
- ... Additional arguments to pass to other methods. Currently ignored.

**Details**

See [https://www.w3schools.com/cssref/pr_border-collapse.asp](https://www.w3schools.com/cssref/pr_border-collapse.asp) for details on how each option affects the appearance of a table.

This property has no effect on non-HTML output.

**Functional Requirements**

1. Change the borderCollapse attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if borderCollapse is not one of "collapse", "separate", "initial", "inherit".

**Author(s)**

Benjamin Nutter

**Source**

[https://www.w3schools.com/cssref/pr_border-collapse.asp](https://www.w3schools.com/cssref/pr_border-collapse.asp)

**See Also**

dust.sprinkle
**Description**

The table caption is often used as a brief title, but may also be used to provide a longer statement explaining how to interpret the table results.

**Usage**

```r
sprinkle_caption(x, caption, ...)
```

## Default S3 method:
```r
sprinkle_caption(x, caption, ...)
```

## S3 method for class 'dust_list'
```r
sprinkle_caption(x, caption, ...)
```

**Arguments**

- `x` An object of class dust
- `caption` character(1) giving the new caption for the table.
- `...` Additional arguments to pass to other methods. Currently ignored.

**Details**

The caption may be set during the initial dust call. This method allows for modification afterward, such as in the case of when a dust object is loaded from memory and the initial call cannot be accessed.

**Functional Requirements**

1. Change the caption attribute of the dust object.
2. Cast an error if `x` is not a dust object.
3. Cast an error if `caption` is not a character object.
4. Cast an error if `caption` has length greater than 1.

**Author(s)**

Benjamin Nutter

**See Also**

dust, sprinkle
sprinkle_caption_number

Change the Caption in a Dust Table

Description

The table caption is often used as a brief title, but may also be used to provide a longer statement explaining how to interpret the table results.

Usage

喷inkle_caption_number(x, caption_number, ...)

## Default S3 method:
sprinkle_caption_number(
  x,
  caption_number = getOption("pixie_caption_number", TRUE),
  ...
)

## S3 method for class 'dust_list'
sprinkle_caption_number(
  x,
  caption_number = getOption("pixie_caption_number", TRUE),
  ...
)

Arguments

x An object of class dust
caption_number logical(1) When TRUE, the table caption is prefixed with "Table #". Table numbering is suppressed when FALSE. When numbering is suppressed, the table number counter will not increment.

... Additional arguments to pass to other methods. Currently ignored.

Details

Table numbering makes it possible to reference tables within a document. In some cases, the numbering is not desired. Suppressing numbering may restrict the ability to make reference to the table.

Functional Requirements

1. Change the caption_number attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if caption_number is not a logical object.
4. Cast an error if caption_number has length greater than 1.
sprinkle_colnames

Column Names for dust Tables

Description

Assigns new column names to a table

Usage

sprinkle_colnames(x, ...)

## Default S3 method:
sprinkle_colnames(x, ...)

## S3 method for class 'dust_list'
sprinkle_colnames(x, ...)

Arguments

x

A dust object.

...

Column names for the table. See 'Input Formats'

Input Formats

- named arguments Using dust_colnames(term = "Term", estimate = "Estimate"). column names may be passed for all or a subset of the columns. The existing column name will be matched against the argument name.

- unnamed arguments Using dust_colnames("Term","Estimate","SE",...), column names may be passed for all of the columns. If the arguments are unnamed, the number of arguments passed must match the number of columns in the table.

When using named arguments (or a named vector), you may not mix named and unnamed elements. In other words, if one element is named, they must all be named. Unnamed elements are assigned to columns in sequential order.

Author(s)

Benjamin Nutter
**sprinkle_discrete**  

Change Color Features by Discrete Values

**Description**

Distinct values within a range will be assigned a color and the designated attribute of the table will be modified accordingly.

**Usage**

```
sprinkle_discrete(  
  x,  
  rows = NULL,  
  cols = NULL,  
  discrete = "bg",  
  discrete_colors = getOption("pixie_discrete_pal", NULL),  
  part = c("body", "head", "foot", "interfoot", "table"),  
  fixed = FALSE,  
  recycle = c("none", "rows", "cols", "columns"),  
  ...  
)
```

## Default S3 method:

```
sprinkle_discrete(  
  x,  
  rows = NULL,  
  cols = NULL,  
  discrete = "bg",  
  discrete_colors = getOption("pixie_discrete_pal", NULL),  
  part = c("body", "head", "foot", "interfoot", "table"),  
  fixed = FALSE,  
  recycle = c("none", "rows", "cols", "columns"),
```

**See Also**

`sprinkle`

**Examples**

```r
x <- dust(lm(mpg ~ qsec + factor(am), data = mtcars))
x
x %>% sprinkle_colnames(term = "Term", statistic = "T")
x %>% sprinkle_colnames("Term", "Estimate", "SE", "T-statistic", "p-value")
## Not run:
# Causes an error due to too few unnamed arguments
x %>% sprinkle_colnames("Term", "Estimate")
## End(Not run)
```
Arguments

x An object of class dust

rows Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.

cols Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

discrete character. A subset of c("bg","font","font_color","border","left_border","top_border","right_border","bottom_border").

discrete_colors character. Gives the color palette to be used. Each value must be a valid color. Defaults to evenly spaced colors over the color space.

part A character string denoting which part of the table to modify.

fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Details

This sprinkle is only recognized by HTML and LaTeX. All of the height_units values are recognized by HTML. For LaTeX, "px" is converted to "pt".

"font" and "font_color" both change the font color.

"border" is a shortcut to specify all borders.
### Functional Requirements

1. Correctly reassigns the appropriate elements of the \texttt{bg}, \texttt{font\_color}, \texttt{left\_border}, \texttt{top\_border}, \texttt{right\_border}, or \texttt{bottom\_border} column in the table part.
2. Casts an error if \texttt{x} is not a dust object.
3. Casts an error if \texttt{discrete} is not a subset of \texttt{c("bg","font","font\_color","border","left\_border","right\_border")}.
4. Casts an error if \texttt{discrete\_colors} is not a character value.
5. Casts an error if any value of \texttt{discrete\_colors} is not a recognized color value.
6. Casts an error if \texttt{part} is not one of "body", "head", "foot", or "interfoot"
7. Casts an error if \texttt{fixed} is not a logical(1)
8. Casts an error if \texttt{recycle} is not one of "none", "rows", or "cols"

The functional behavior of the \texttt{fixed} and \texttt{recycle} arguments is not tested for this function. It is tested and validated in the tests for \texttt{index\_to\_sprinkle}.

### See Also

\texttt{sprinkle}, \texttt{index\_to\_sprinkle}

---

### sprinkle\_fixed\_header

#### Assign a Fixed Header to an HTML Table

**Description**

Long tables to be displayed on-screen may benefit by keeping the header fixed in position while scrolling through the body of the table. This allows the user to maintain visual contact between the column name and the data.

**Usage**

```r
sprinkle_fixed_header(
  x,
  fixed_header = TRUE,
  include_fixed_header_css = TRUE,
  fixed_header_class_name = "pixie-fixed",
  scroll_body_height = 300,
  scroll_body_height_units = "px",
  scroll_body_background_color = "white",
  fixed_header_height = 20,
  fixed_header_height_units = "px",
  fixed_header_text_height = fixed_header_height/2,
  fixed_header_text_height_units = "px",
  fixed_header_background_color = "white",
  ...
)
```
sprinkle_fixed_header

## Default S3 method:
sprinkle_fixed_header(
  x,
  fixed_header = TRUE,
  include_fixed_header_css = TRUE,
  fixed_header_class_name = "pixie-fixed",
  scroll_body_height = 300,
  scroll_body_height_units = "px",
  scroll_body_background_color = "white",
  fixed_header_height = 20,
  fixed_header_height_units = "px",
  fixed_header_text_height = fixed_header_height/2,
  fixed_header_text_height_units = "px",
  fixed_header_background_color = "white",
  ...
)

## S3 method for class 'dust_list'
sprinkle_fixed_header(
  x,
  fixed_header = TRUE,
  include_fixed_header_css = TRUE,
  fixed_header_class_name = "pixie-fixed",
  scroll_body_height = 300,
  scroll_body_height_units = "px",
  scroll_body_background_color = "white",
  fixed_header_height = 20,
  fixed_header_height_units = "px",
  fixed_header_text_height = fixed_header_height/2,
  fixed_header_text_height_units = "px",
  fixed_header_background_color = "white",
  ...
)

Arguments

- **x**
  An object of class dust

- **fixed_header**
  logical(1). When TRUE, HTML output will produce a table with a fixed header and a scrollable body.

- **include_fixed_header_css**
  logical(1). When TRUE, the CSS code to produce the table is inserted directly ahead of the HTML code for the table. When FALSE, the CSS is omitted and assumed to be provided by the user. This may be beneficial if the user has defined CSS styles for their tables. In this case, the user will need to add CSS classes to their customized CSS to accommodate the fixed headers. See Avoiding CSS Conflicts.
fixed_header_class_name
class(1). When include_fixed_header_css = FALSE, this class name
is used to reference CSS classes provided by the user to format the table cor-
rectly.

scroll_body_height
integerish(1). Sets the height of the scrollable table body.

scroll_body_height_units
class(1). Determines the units for the height of the scrollable table. De-
defaults to "px". Must be one of c("px", "pt", "%", "em").

scroll_body_background_color
class(1). The color of the background of the body. Must be a valid color.
It defaults to white, which may override CSS settings provided by the user. If
this needs to be avoided, you may use the fixed_header_css function to assist
in generating CSS code to use to define the CSS. See Avoiding CSS Conflicts.

fixed_header_height
integerish(1). Sets the height of the header row.

fixed_header_height_units
class(1). Determines the units for the height of the header row. Defaults
to "px". Must be one of c("px", "pt", "%", "em").

fixed_header_text_height
numeric(1). Sets the height at which the header text appears. By default it is
set to half of the header height. This should be approximately centered, but you
may alter this to get the precise look you want.

fixed_header_text_height_units
class(1). Determines the units for placing the header text. Defaults to
"px". Must be one of c("px", "pt", "%", "em").

fixed_header_background_color
class(1). Sets the background color for the header row. This defaults to
white and may override the user’s CSS settings. See Avoiding CSS Conflicts.

Details

CSS doesn’t make this kind of table natural. The solution to generate the fixed headers used by
pixiedust is probably not the best solution in terms of CSS design. It is, however, the most
conducive to generating dynamically on the fly.

The fixed header table requires nesting several HTML elements.

1. a div tag is used to control the alignment of the table
2. a section tag is used to set up the header row that remains fixed.
3. a div that sets the height of the scrollable body
4. the table tag establishes the actual table.
5. The th tags inside the table are set to full transparency and the content of the headers is
duplicated in a div within the th tag to display the content.

To accomplish these tasks, some CSS is exported with the table and placed in the document im-
mediately before the table. Read further to understand the conflicts that may arise if you are using
custom CSS specifications in your documents.
Avoiding CSS Conflicts

Because of all of the shenanigans involved, exporting the CSS with the tables may result in conflicts with your custom CSS. Most importantly, any CSS you have applied to the th or td tags may be overwritten. If you are using custom CSS, you may want to consider using include_fixed_header_css = FALSE and then utilizing fixed_header_css to generate CSS you can include in your CSS file to provide the fixed headers. The code generated by fixed_header_css ought to be placed before your definitions for td and th.

To get the same header design in the fixed table, you will want to modify the .th-pixie-fixed div definition in the CSS to match your desired th definition.

The code produced by fixed_header_css will include comments where there is potential for a CSS conflict.

Functional Requirements

1. Set the fixed_header element of the dust object correctly.
2. Set the include_fixed_header_css element of the dust object correctly.
3. Set the fixed_header_param element of the dust object correctly.
4. Cast an error if x does not inherit class dust
5. Cast an error if scroll_body_height is not integerish(1)
6. Cast an error if scroll_body_height_units is not character(1)
7. Cast an error if scroll_body_background_color is not character(1)
8. Cast an error if scroll_body_background_color is not a valid color.
9. Cast an error if fixed_header_height is not integerish(1)
10. Cast an error if fixed_header_height_units is not character(1)
11. Cast an error if fixed_header_text_height is not numeric(1)
12. Cast an error if fixed_header_text_height_units is not character(1)
13. Cast an error if fixed_header_background_color is not character(1)
14. Cast an error if fixed_header_background_color is not a valid color.
15. Cast an error if include_fixed_header_css is not logical(1)
16. Cast an error if fixed_header_class_name is not character(1)

---

**sprinkle_float**

*Change the float Property in a Dust Table*

---

**Description**

Alter the floating behavior of tables rendered in LaTeX documents. Floating tables are moved to a position deemed ideal by the typesetter. Setting float = FALSE causes the table to be rendered in the position in which it is generated in the code.
Usage

sprinkle_float(x, float = getOption("pixie_float", FALSE), ...)

## Default S3 method:
sprinkle_float(x, float = getOption("pixie_float", FALSE), ...)

## S3 method for class 'dust_list'
sprinkle_float(x, float = getOption("pixie_float", FALSE), ...)

Arguments

x An object of class dust
float logical(1) indicating if the table should be placed in a floating environment.
... Additional arguments to pass to other methods. Currently ignored.

Details

See https://en.wikibooks.org/wiki/LaTeX/Floats,_Figures_and_Captions for more about floating environments in LaTeX.

This property has no effect on non-LaTeX output.

Functional Requirements

1. Change the float attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if float is not logical or length 1.

Author(s)

Benjamin Nutter

Source

https://en.wikibooks.org/wiki/LaTeX/Floats,_Figures_and_Captions

See Also

dust, sprinkle
sprinkle_fn

Apply a function to a selection of cells

Description

The pre-defined sprinkles do not always provide the desired impact on the tables. Applying a function allows for highly customized output without having to pre-process that data frame.

Usage

sprinkle_fn(
  x, 
  rows = NULL, 
  cols = NULL, 
  fn = NULL, 
  part = c("body", "head", "foot", "interfoot", "table"), 
  fixed = FALSE, 
  recycle = c("none", "rows", "cols"), 
  ...
)

## Default S3 method:
sprinkle_fn(
  x, 
  rows = NULL, 
  cols = NULL, 
  fn = NULL, 
  part = c("body", "head", "foot", "interfoot", "table"), 
  fixed = FALSE, 
  recycle = c("none", "rows", "cols", "columns"), 
  ...
)

## S3 method for class 'dust_list'
sprinkle_fn(
  x, 
  rows = NULL, 
  cols = NULL, 
  fn = NULL, 
  part = c("body", "head", "foot", "interfoot", "table"), 
  fixed = FALSE, 
  recycle = c("none", "rows", "cols", "columns"), 
  ...
)

Arguments

x An object of class dust
**sprinkle_fn**

**rows**
Either a numeric vector of rows in the tabular object to be modified or an object of class `call`. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.

**cols**
Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

**fn**
An object of class `call`. The function should act on an object `value` (which is an internal column in the `dust` object). It is recommend to wrap the function call in `quote`. For example, `quote(pvalString(value))` or `quote(format(value, nsmall = 3))`.

**part**
A character string denoting which part of the table to modify.

**fixed**
`logical(1)` indicating if the values in `rows` and `cols` should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of `rows` and `cols`, meaning that the arguments do not have to share the same length. When `fixed = TRUE`, they must share the same length.

**recycle**
A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

**...**
Additional arguments to pass to other methods. Currently ignored.

**Details**

dust objects transform tabular objects so that each cell in the table comprises one row in the data frame of cell attributes. The function to be applied needs to act on the `value` column of that data frame.

**Functional Requirements**

1. Correctly reassigns the appropriate elements `fn` column in the table part.
2. Casts an error if `x` is not a dust object.
3. Casts an error if `fn` is not a call object.
4. Casts an error if `part` is not one of "body", "head", "foot", or "interfoot"
5. Casts an error if `fixed` is not a logical(1)
6. Casts an error if `recycle` is not one of "none", "rows", or "cols"

**Author(s)**

Benjamin Nutter
**sprinkle_font**  
*Sprinkle the Characteristics of Text in a Cell*

**Description**

Text can be made to stand out (or fade away) by using font features such as bold and italic text, color, size, or different fonts.

**Usage**

```r
sprinkle_font(
  x,
  rows = NULL,
  cols = NULL,
  bold = NULL,
  italic = NULL,
  font_size = NULL,
  font_size_units = NULL,
  font_color = NULL,
  font_family = NULL,
  ..., 
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = "none"
)
```

## Default S3 method:
```r
sprinkle_font(
  x,
  rows = NULL,
  cols = NULL,
  bold = NULL,
  italic = NULL,
  font_size = NULL,
  font_size_units = NULL,
  font_color = NULL,
  font_family = NULL,
  ..., 
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = "none"
)
```

## S3 method for class 'dust_list'
```r
sprinkle_font(
  x,
  rows = NULL,
```
cols = NULL,
bold = NULL,
italic = NULL,
font_size = NULL,
font_size_units = NULL,
font_color = NULL,
font_family = NULL,
...,
part = c("body", "head", "foot", "interfoot", "table"),
fixed = FALSE,
recycle = "none"
)

Arguments

x
   An object of class dust

rows
   Either a numeric vector of rows in the tabular object to be modified or an object
   of class call. When a call, generated by quote(expression), the expression
   resolves to a logical vector the same length as the number of rows in the table.
   Sprinkles are applied to where the expression resolves to TRUE.

cols
   Either a numeric vector of columns in the tabular object to be modified, or a
   character vector of column names. A mixture of character and numeric indices
   is permissible.

bold
   logical(1) indicating if the text in the selected cells should be made bold.

italic
   logical(1) indicating if the text in the selected cells should be made italic.

font_size
   numeric(1) giving the font size.

font_size_units
   character(1) giving the units of the font size. May be any of c("px","pt","%","em").
   LaTeX output only recognizes "pt" and "em". For LaTeX output, "px" is qui-
   etly changed to "pt" when printing.

font_color
   character(1) giving a valid color name for the text.

font_family
   character(1) giving the font name for the text. This is only recognized in
   HTML output.

...
   Additional arguments to pass to other methods. Currently ignored.

part
   A character string denoting which part of the table to modify.

fixed
   logical(1) indicating if the values in rows and cols should be read as fixed
coordinate pairs. By default, sprinkles are applied at the intersection of rows and
cols, meaning that the arguments do not have to share the same length. When
fixed = TRUE, they must share the same length.

recycle
   A character one that determines how sprinkles are managed when the sprinkle
   input doesn’t match the length of the region to be sprinkled. By default, recy-
   cling is turned off. Recycling may be performed across rows first (left to right,
top to bottom), or down columns first (top to bottom, left to right).
Details
The bold and italic features are recognized by all formats. Font size features are recognized by HTML and LaTeX. LaTeX only recognizes the font size unit options of "pt" and "em", but will quietly change "px" to "pt" when printing. Font color features are recognized by HTML and LaTeX. Font family is only recognized by HTML.

Functional Requirements
1. Correctly change the bold column of the table part for the selected cells.
2. Correctly change the italic column of the table part for the selected cells.
3. Correctly change the font_size column of the table part for the selected cells.
4. Correctly change the font_size_units column of the table part for the selected cells.
5. Correctly change the font_color column of the table part for the selected cells.
6. Correctly change the font_family column of the table part for the selected cells.
7. Cast an error if x is not a dust object.
8. Cast an error if bold is not logical(1)
9. Cast an error if italic is not logical(1)
10. Cast an error if font_size is not numeric(1)
11. Cast an error if font_size_units is not character(1)
12. Cast an error if font_size_units is not one of px, pt, em, or
13. Cast an error if font_color is not character(1)
14. Cast an error if font_family is not character(1)
15. Cast an error if part is not a subset of c("body","head","foot","interfoot")
16. Cast an error if recycle = "none" and bold does not have length 1.
17. Cast an error if recycle = "none" and italic does not have length 1.
18. Cast an error if recycle = "none" and font_size does not have length 1.
19. Cast an error if recycle = "none" and font_size_units does not have length 1.
20. Cast an error if recycle = "none" and font_color does not have length 1.
21. Cast an error if recycle = "none" and font_family does not have length 1.

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for index_to_sprinkle.

Author(s)
Benjamin Nutter

See Also
sprinkle
**Description**

Numeric values within a range of cells are binned and colors assigned to show gradual increases in the numeric value.

**Usage**

```r
sprinkle_gradient(
  x,
  rows = NULL,
  cols = NULL,
  gradient = "bg",
  gradient_colors = getOption("pixie_gradient_pal", NULL),
  gradient_cut = NULL,
  gradient_n = 10,
  gradient_na = "grey",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## Default S3 method:

```r
sprinkle_gradient(
  x,
  rows = NULL,
  cols = NULL,
  gradient = "bg",
  gradient_colors = getOption("pixie_gradient_pal", c("#132B43", "#56B1F7")),
  gradient_cut = NULL,
  gradient_n = 10,
  gradient_na = "grey",
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## S3 method for class 'dust_list'

```r
sprinkle_gradient(
  x,
  rows = NULL,
  cols = NULL,
  gradient = "bg",
```
gradient_colors = getOption("pixie_gradient_pal", c("#132B43", "#56B1F7")),
gradient_cut = NULL,
gradient_n = 10,
gradient_na = "grey",
part = c("body", "head", "foot", "interfoot", "table"),
fixed = FALSE,
recycle = c("none", "rows", "cols", "columns"),
...
)

Arguments

x
An object of class dust

rows
Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by quote(expression), the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

cols
Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

gradient
character. A subset of c("bg", "font", "font_color", "border", "left_border", "top_border", "right_border", "bottom_border").

gradient_colors
character(2). Gives the colors between which to shared gradients.

gradient_cut
numeric. Determines the breaks points for the gradient shading. When NULL equally spaced quantiles are used, the number of which are determined by gradient_n.

gradient_n
numeric(1). Determines the number of shades to use between the colors in gradient_colors.

gradient_na
character(1) A valid color that sets the color of NA values when shading a numeric range.

part
A character string denoting which part of the table to modify.

fixed
logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle
A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

Additional arguments to pass to other methods. Currently ignored.

Details

This sprinkle is only recognized by HTML and LaTeX. All of the height_units values are recognized by HTML. For LaTeX, "px" is converted to "pt".

"font" and "font_color" both change the font color.

"border" is a shortcut to specify all borders.
**Functional Requirements**

1. Correctly reassigns the appropriate elements of the bg, font_color, left_border, top_border, right_border, or bottom_border column in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if gradient is not a subset of c("bg","font","font_color","border","left_border","right_border","top_border","bottom_border")
4. Casts an error if gradient_colors is not a character(2) value.
5. Casts an error if any value of gradient_colors is not a recognized color value.
6. Casts an error if gradient_cut is not numeric.
7. Casts an error if gradient_n is not numeric(1).
8. Casts an error if gradient_na is not character(1).
9. Casts an error if gradient_na is not a valid color.
10. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
11. Casts an error if fixed is not a logical(1)
12. Casts an error if recycle is not one of "none", "rows", or "cols"

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

**See Also**

/sprinkle
/index_to_sprinkle

**sprinkle_height**  
Adjust Table Cell Height

**Description**

Customize the height of a cell in a table. This may be done to improve the appearance of cells with long text.

**Usage**

```r
sprinkle_height(
  x,
  rows = NULL,
  cols = NULL,
  height = NULL,
  height_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```
## Default S3 method:
sprinkle_height(
  x,
  rows = NULL,
  cols = NULL,
  height = NULL,
  height_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_height(
  x,
  rows = NULL,
  cols = NULL,
  height = NULL,
  height_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

### Arguments

- **x**: An object of class dust
- **rows**: Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by quote(expression), the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.
- **cols**: Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.
- **height**: numeric(1). Gives the height of the cell.
- **height_units**: character(1). Gives the units for height. One of c("pt", "px", "cm", "in", "%")
- **part**: A character string denoting which part of the table to modify.
- **fixed**: logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.
- **recycle**: A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).
 sprinkle_hhline

... Additional arguments to pass to other methods. Currently ignored.

Details
This sprinkle is only recognized by HTML and LaTeX. All of the height_units values are recognized by HTML. For LaTeX, “px” is converted to “pt”.

Functional Requirements
1. Correctly reassigns the appropriate elements of height and height_units columns in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if height is not a numeric(1)
4. Casts an error if height_units is not a character(1)
5. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
6. Casts an error if fixed is not a logical(1)
7. Casts an error if recycle is not one of "none", "rows", or "cols"
8. Cast an error if recycle = "none" and height does not have length 1.
9. When recycle = "none", quietly coerce height_units to just the first element given.

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for index_to_sprinkle.

See Also

sprinkle, index_to_sprinkle

sprinkle_hhline  Change the hhline Property in a Dust Table

Description
The hhline property controls the appearance of cell borders in LaTeX tables. There is a known limitation in the LaTeX color tbl package where cell borders can be hidden if the cell has a background color. If using both cell borders and background colors, it is recommended that you use the hhline property to make cell borders appear as desired.

Usage

sprinkle_hhline(x, hhline = getOption("pixie_hhline", FALSE), ...)

## Default S3 method:
sprinkle_hhline(x, hhline = getOption("pixie_hhline", FALSE), ...)

## S3 method for class 'dust_list'
sprinkle_hhline(x, hhline = getOption("pixie_hhline", FALSE), ...)
Arguments

x  An object of class dust
hhline  logical(1). When TRUE, the LaTeX hhline package will be used for cell borders.
...
Additional arguments to pass to other methods. Currently ignored.

Details

When hhline = TRUE, borders will be solid; dashed and dotted borders are unsupported by hhline.
This property has no effect on non-LaTeX output.

Functional Requirements

1. Change the hhline attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if hhline is not logical and length 1.

Author(s)

Benjamin Nutter

Source

https://www.ctan.org/pkg/hhline?lang=en

See Also

dust, sprinkle

---

sprinkle_html_preserve

Change the HTML Preserve Property in a Dust Table

Description

By default pixiedust makes use of htmltools::htmlPreserve to prevent certain symbols from rendering in unintended ways based on some not-very-well-understood-by-the-author issues. This property controls whether the preservation is used or not.
Usage

sprinkle_html_preserve(
  x,
  html_preserve = getOption("pixie_html_preserve", TRUE),
  ...
)

## Default S3 method:
sprinkle_html_preserve(
  x,
  html_preserve = getOption("pixie_html_preserve", TRUE),
  ...
)

## S3 method for class 'dust_list'
sprinkle_html_preserve(
  x,
  html_preserve = getOption("pixie_html_preserve", TRUE),
  ...
)

Arguments

x An object of class dust
html_preserve logical(1) indicating if the table is being produced in an htmltools::htmlPreserve environment.
... Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Change the html_preserve attribute of the dust object.
2. Cast an error if x is not a dust object.
3. Cast an error if html_preserve is not logical(1).

Author(s)

Benjamin Nutter

See Also

dust, sprinkle.htmlPreserve
**sprinkle_justify**  
*Change the Caption in a Dust Table*

**Description**

The justification of the table determines the horizontal placing of the table on the page.

**Usage**

```r
sprinkle_justify(x, justify = getOption("pixie_justify", "center"), ...)
```

## Default S3 method:

```r
sprinkle_justify(x, justify = getOption("pixie_justify", "center"), ...)
```

## S3 method for class 'dust_list'

```r
sprinkle_justify(x, justify = getOption("pixie_justify", "center"), ...)
```

**Arguments**

- `x` An object of class dust
- `justify` character string giving the justification of the entire table on the page. May be any one of "center", "left", or "right".
- `...` Additional arguments to pass to other methods. Currently ignored.

**Details**

For HTML tables, the values "center", "left", and "right" all justify the table as expected. It is important to note, however, that "left" and "right" will cause subsequent elements to be rendered next to the table, not below it. To render the table with left alignment without this side effect, use "none".

In LaTeX output, both "right" and "left" justify to the left. This may change in the future if I find a resolution. Using "none" also results in left justification.

**Functional Requirements**

1. Change the `justify` attribute of the dust object.
2. Cast an error if `x` is not a dust object.
3. Cast an error if `justify` is not one of "center", "none", "left", or "right".
4. Ignore capitalization of the `justify` argument.

**Author(s)**

Benjamin Nutter

**See Also**

dust, sprinkle
**sprinkle_label**  

*Change the Border Collapse Property in a Dust Table*

---

**Description**

The `label` property is used to make references to a table. Labels may be used in LaTeX documents, or in both LaTeX and HTML documents when using bookdown.

**Usage**

```r
sprinkle_label(x, label = NULL, ...)
```

```r
## Default S3 method:
sprinkle_label(x, label = NULL, ...)
```

```r
## S3 method for class 'dust_list'
sprinkle_label(x, label = NULL, ...)
```

**Arguments**

- `x` An object of class dust
- `label` character(1) or NULL for no label.
- `...` Additional arguments to pass to other methods. Currently ignored.

**Details**

For details about using labels in LaTeX documents, see [https://en.wikibooks.org/wiki/LaTeX/Labels_and_Cross-referencing](https://en.wikibooks.org/wiki/LaTeX/Labels_and_Cross-referencing).

For details about using labels in bookdown documents, see [https://bookdown.org/yihui/bookdown/tables.html](https://bookdown.org/yihui/bookdown/tables.html)

**Functional Requirements**

1. Change the `label` attribute of the dust object.
2. Cast an error if `x` is not a dust object.
3. Cast an error if `label` is not a character(1).

**Author(s)**

Benjamin Nutter

**Source**

[https://en.wikibooks.org/wiki/LaTeX/Labels_and_Cross-referencing](https://en.wikibooks.org/wiki/LaTeX/Labels_and_Cross-referencing)

[https://bookdown.org/yihui/bookdown/tables.html](https://bookdown.org/yihui/bookdown/tables.html)
See Also
dust, sprinkle

sprinkle_longtable  Change the Longtable Property in a Dust Table

Description

The LaTeX `longtable` package allows for long tables to be broken into multiple parts to be displayed on separate pages. pixiedust will mimic this behavior for other output types.

Usage

```r
sprinkle_longtable(x, longtable = getOption("pixie_longtable", FALSE), ...)
## Default S3 method:
sprinkle_longtable(x, longtable = getOption("pixie_longtable", FALSE), ...)
## S3 method for class 'dust_list'
sprinkle_longtable(x, longtable = getOption("pixie_longtable", FALSE), ...)
```

Arguments

- `x`  
  An object of class dust
- `longtable`  
  Either a logical(1) or an numeric(1) integer-like value. See Details.
- `...`  
  Additional arguments to pass to other methods. Currently ignored.

Details

When `longtable = TRUE`, LaTeX tables will be divided according to the LaTeX document settings. In other table outputs, the default is to use 25 rows per table.

When `longtable` is an integer (or integer-like) value, the table is divided into that many rows per section. This applies to all output.

Functional Requirements

1. Change the `longtable` attribute of the dust object.
2. Cast an error if `x` is not a dust object.
3. Cast an error if `longtable` is logical and has length not equal to 1.
4. When `longtable` is not logical, cast an error if it is not-integerish and has length not equal to 1.

Author(s)

Benjamin Nutter
See Also
dust.sprinkle

sprinkle_merge  Sprinkle Table Cells to Merge

Description
Merging cells creates more space for values to be displayed without disrupting the appearance of other cells in the same row or column. The downside is that the content from only one of the cells in the merge range will be displayed.

Usage

sprinkle_merge(
  x,
  rows = NULL,
  cols = NULL,
  merge = FALSE,
  merge_rowval = NULL,
  merge_colval = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## Default S3 method:
sprinkle_merge(
  x,
  rows = NULL,
  cols = NULL,
  merge = FALSE,
  merge_rowval = NULL,
  merge_colval = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_merge(
  x,
  rows = NULL,
  cols = NULL,
merges = FALSE,
merge_rowval = NULL,
merge_colval = NULL,
part = c("body", "head", "foot", "interfoot", "table"),
fixed = FALSE,
recycle = c("none", "rows", "cols", "columns"),
...
)

Arguments

x An object of class dust
rows Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by quote(expression), the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.
cols Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.
merge logical Defaults to FALSE, prompting no merging action.
merge_rowval The row position of the cell whose content will be displayed. Defaults to the minimum of rows.
merge_colval The column position of the cell whose content will be displayed. Defaults to the minimum of cols.
part A character string denoting which part of the table to modify.
fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.
recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).
...

Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Correctly reassigns the appropriate elements of merge, merge_rowval and merge_colval columns in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if merge is not a logical(1)
4. Casts an error if merge_rowval is not a numeric(1)
5. Casts an error if merge_colval is not a numeric(1)
6. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
7. Casts an error if fixed is not a logical(1)
8. Casts an error if recycle is not one of "none", "rows", or "cols"

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

See Also

`sprinkle`, `index_to_sprinkle`

---

### sprinkle_na_string

#### Sprinkle Appearance of NA’s

#### Description

The appearance of NA values in a table may be dependent on the context. `pixiedust` uses the `na_string` sprinkle to guide the appearance of missing values in the table.

#### Usage

```r
sprinkle_na_string(
  x,
  rows = NULL,
  cols = NULL,
  na_string = getOption("pixie_na_string", NA),
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## Default S3 method:
sprinkle_na_string(
  x,
  rows = NULL,
  cols = NULL,
  na_string = getOption("pixie_na_string", NA),
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_na_string(
  x,
  rows = NULL,
```
cols = NULL,
namer_string =getOption("pixie_na_string", NA),
part = c("body", "head", "foot", "interfoot", "table"),
fixed = FALSE,
recycle = c("none", "rows", "cols", "columns"),
...
)

Arguments

- **x**: An object of class `dust`
- **rows**: Either a numeric vector of rows in the tabular object to be modified or an object of class `call`. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.
- **cols**: Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.
- **na_string**: character(1) A character string giving desired replacement for `NA` values in the selected cells.
- **part**: A character string denoting which part of the table to modify.
- **fixed**: logical(1) indicating if the values in `rows` and `cols` should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of `rows` and `cols`, meaning that the arguments do not have to share the same length. When `fixed = TRUE`, they must share the same length.
- **recycle**: A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).
- **...**: Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Correctly reassigns the appropriate elements `na_string` column in the table part.
2. Casts an error if `x` is not a `dust` object.
3. Casts an error if `bg` is not a character(1)
4. Casts an error if `part` is not one of "body", "head", "foot", or "interfoot"
5. Casts an error if `fixed` is not a logical(1)
6. Casts an error if `recycle` is not one of "none", "rows", or "cols"
7. Cast an error if `recycle = "none"` and `na_string` does not have length 1.

The functional behavior of the `fixed` and `recycle` arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

See Also

- `sprinkle`, `index_to_sprinkle`
sprinkle_pad  

**Sprinkle the Padding of a Cell**

**Description**

Padding for HTML tables indicates how many pixels should be placed between the cell’s content and the outside border.

**Usage**

```r
sprinkle_pad(
  x,
  rows = NULL,
  cols = NULL,
  pad = 0,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

**Arguments**

- `x`  
  An object of class `dust`
either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by quote(expression), the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

cols
Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

pad
numeric(1) A character string giving a color for the background of the chosen cells.

part
A character string denoting which part of the table to modify.

fixed
logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle
A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Details
Colors may be a dvips color name, or in the rgb(R, G, B), rgba(R, G, B, A), #RRGGBB, or #RRGG-BBAA formats.

This sprinkle is ignored in console and markdown outputs. HTML output will accept any of the color formats and recognize transparency. LaTeX output will accept any of the color formats but ignore transparency.

As long as pad is required to be a numeric(1), the recycle argument is kind of useless. It is included to maintain consistency with the index_to_sprinkle function. Future development may permit a character vector of colors.

Functional Requirements

1. Correctly reassigns the appropriate elements pad column in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if pad is not a numeric(1)
4. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
5. Casts an error if fixed is not a logical(1)
6. Casts an error if recycle is not one of "none", "rows", or "cols"
7. Casts an error if recycle = "none" and pad does not have length 1.

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for index_to_sprinkle.

Author(s)

Benjamin Nutter
**sprinkle_replace**

*Replace Contents of Selected Cells*

**Description**

At times it may be necessary to replace the contents of a cell with user-supplied values.

**Usage**

```r
sprinkle_replace(
  x,
  rows = NULL,
  cols = NULL,
  replace,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

---

**See Also**

`sprinkle`, `index_to_sprinkle`
Arguments

x
An object of class dust

rows
Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

cols
Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

replace
character A character vector giving the desired content for the selected cells.

part
A character string denoting which part of the table to modify.

fixed
logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When `fixed = TRUE`, they must share the same length.

recycle
A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Correctly reassigns the appropriate elements replace column in the table part.
2. Casts an error if x is not a dust object.
3. Casts an error if replace is not a vector
4. Casts an warning if the number of indices to replace is not a multiple of replace
5. Casts an error if length(replace) is greater than the number of cells to replace.
6. Casts an error if part is not one of "body", "head", "foot", or "interfoot"
7. Casts an error if fixed is not a logical(1)
8. Casts an error if recycle is not one of "none", "rows", or "cols"

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

See Also

`sprinkle`, `index_to_sprinkle`
sprinkle_rotate_degree

Sprinkle Appearance of NA’s

Description

The content of cells may be rotated when it is desired to save space (such as long table column names), or to draw attention to the cells.

Usage

```r
sprinkle_rotate_degree(
  x,
  rows = NULL,
  cols = NULL,
  rotate_degree = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## Default S3 method:
sprinkle_rotate_degree(
  x,
  rows = NULL,
  cols = NULL,
  rotate_degree = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_rotate_degree(
  x,
  rows = NULL,
  cols = NULL,
  rotate_degree = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
Arguments

x

An object of class dust

rows

Either a numeric vector of rows in the tabular object to be modified or an object of class call. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to TRUE.

cols

Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.

rotate_degree numeric(1) Indicates how much to rotate the cell text in degrees.

part

A character string denoting which part of the table to modify.

fixed logical(1) indicating if the values in rows and cols should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of rows and cols, meaning that the arguments do not have to share the same length. When fixed = TRUE, they must share the same length.

recycle

A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Functional Requirements

1. Correctly reassigns the appropriate elements rotate_degree column in the table part.

2. Casts an error if x is not a dust object.

3. Casts an error if rotate_degree is not a numeric(1)

4. Casts an error if part is not one of "body", "head", "foot", or "interfoot"

5. Casts an error if fixed is not a logical(1)

6. Casts an error if recycle is not one of "none", "rows", or "cols"

7. Cast an error if recycle = "none" and rotate_degree does not have length 1.

The functional behavior of the fixed and recycle arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

See Also

`sprinkle`, `index_to_sprinkle`
sprinkle_round

Description

The appearance of NA values in a table may be dependent on the context. pixiedust uses the round sprinkle to guide the appearance of missing values in the table.

Usage

```r
sprinkle_round(
  x,
  rows = NULL,
  cols = NULL,
  round = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## Default S3 method:
```r
sprinkle_round(
  x,
  rows = NULL,
  cols = NULL,
  round = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## S3 method for class 'dust_list'
```r
sprinkle_round(
  x,
  rows = NULL,
  cols = NULL,
  round = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

Arguments

- `x` An object of class dust
**sprinkle_sanitize**

**Description**

Certain characters in LaTeX code need to be escaped to prevent errors during processing. For example, `%` is the comment character in LaTeX, and needs to be escaped in order to render correctly.
Usage

```r
sprinkle_sanitize(
  x,
  rows = NULL,
  cols = NULL,
  sanitize = NULL,
  sanitize_args = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

## Default S3 method:
sprinkle_sanitize(
  x,
  rows = NULL,
  cols = NULL,
  sanitize = NULL,
  sanitize_args = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_sanitize(
  x,
  rows = NULL,
  cols = NULL,
  sanitize = NULL,
  sanitize_args = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
```

Arguments

- **x** An object of class `dust`
- **rows** Either a numeric vector of rows in the tabular object to be modified or an object of class `call`. When a call, generated by `quote(expression)`, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.
- **cols** Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices
is permissible.

sanitize logical(1). Should the code for the cell be sanitized.

sanitize_args A list of arguments to pass to `Hmisc::latexTranslate`

part A character string denoting which part of the table to modify.

fixed logical(1) indicating if the values in `rows` and `cols` should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of `rows` and `cols`, meaning that the arguments do not have to share the same length. When `fixed = TRUE`, they must share the same length.

recycle A character one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).

... Additional arguments to pass to other methods. Currently ignored.

Details

This sprinkle is only recognized by LaTeX output. See `latexTranslate` for more details.

Functional Requirements

1. Correctly reassigns the appropriate elements of `sanitize` and `sanitize_args` columns in the table part.
2. Casts an error if `x` is not a `dust` object.
3. Casts an error if `sanitize` is not a logical(1)
4. Casts an error if `sanitize_args` is not a list
5. Casts an error if `part` is not one of "body", "head", "foot", or "interfoot"
6. Casts an error if `fixed` is not a logical(1)
7. Casts an error if `recycle` is not one of "none", "rows", or "cols"

The functional behavior of the `fixed` and `recycle` arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.

See Also

`sprinkle`, `index_to_sprinkle`

---

### sprinkle_tabcolsep  
**Change the tabcolsep Property in a Dust Table**

**Description**

The `tabcolsep` property controls the space between columns in LaTeX output. By default, it is set to 6 pt.
**sprinkle_tabcolsep**

**Usage**

```r
sprinkle_tabcolsep(x, tabcolsep = getOption("pixie_tabcolsep", 6), ...)
```

## Default S3 method:
sprinkle_tabcolsep(x, tabcolsep = getOption("pixie_tabcolsep", 6), ...)

## S3 method for class 'dust_list'
sprinkle_tabcolsep(x, tabcolsep = getOption("pixie_tabcolsep", 6), ...)

**Arguments**

- **x**: An object of class `dust`
- **tabcolsep**: numeric(1), integer-like value.
- **...**: Additional arguments to pass to other methods. Currently ignored.

**Details**

Reading on the details of `tabcolsep` may be done by searching "latex tabcolsep" on the internet.

This property has no effect on non-LaTeX output.

**Functional Requirements**

1. Change the `tabcolsep` attribute of the `dust` object.
2. Cast an error if `x` is not a `dust` object.
3. Cast an error if `tabcolsep` is not integerish and length 1.

**Author(s)**

Benjamin Nutter

**Source**


**See Also**

dust, sprinkle
sprinkle_width  Adjust Table Cell Width

Description

Customize the width of a cell in a table. This may be done to improve the appearance of cells with long text.

Usage

sprinkle_width(
  x,
  rows = NULL,
  cols = NULL,
  width = NULL,
  width_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## Default S3 method:
sprinkle_width(
  x,
  rows = NULL,
  cols = NULL,
  width = NULL,
  width_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)

## S3 method for class 'dust_list'
sprinkle_width(
  x,
  rows = NULL,
  cols = NULL,
  width = NULL,
  width_units = NULL,
  part = c("body", "head", "foot", "interfoot", "table"),
  fixed = FALSE,
  recycle = c("none", "rows", "cols", "columns"),
  ...
)
*sprinkle_width*

**Arguments**

- **x**: An object of class *dust*
- **rows**: Either a numeric vector of rows in the tabular object to be modified or an object of class *call*. When a call, generated by *quote(expression)*, the expression resolves to a logical vector the same length as the number of rows in the table. Sprinkles are applied to where the expression resolves to `TRUE`.
- **cols**: Either a numeric vector of columns in the tabular object to be modified, or a character vector of column names. A mixture of character and numeric indices is permissible.
- **width**: `numeric(1)`. Gives the width of the cell.
- **width_units**: `character(1)`. Gives the units for `width`. One of `c("pt","px","cm","in","%")`.
- **part**: A character string denoting which part of the table to modify.
- **fixed**: `logical(1)` indicating if the values in `rows` and `cols` should be read as fixed coordinate pairs. By default, sprinkles are applied at the intersection of `rows` and `cols`, meaning that the arguments do not have to share the same length. When `fixed = TRUE`, they must share the same length.
- **recycle**: A `character` one that determines how sprinkles are managed when the sprinkle input doesn’t match the length of the region to be sprinkled. By default, recycling is turned off. Recycling may be performed across rows first (left to right, top to bottom), or down columns first (top to bottom, left to right).
- **...**: Additional arguments to pass to other methods. Currently ignored.

**Details**

This sprinkle is only recognized by HTML and LaTeX. All of the `width_units` values are recognized by HTML. For LaTeX, "px" is converted to "pt".

**Functional Requirements**

1. Correctly reassigns the appropriate elements of `width` and `width_units` columns in the table `part`.
2. Casts an error if `x` is not a *dust* object.
3. Casts an error if `width` is not numeric.
4. Casts an error if `width_units` is not one of `c("px","pt","in","cm","%")`.
5. Casts an error if `part` is not one of "body", "head", "foot", or "interfoot".
6. Casts an error if `fixed` is not a `logical(1)`.
7. Casts an error if `recycle` is not one of "none", "rows", or "cols".
8. Casts an error if `recycle = "none"` and `width` does not have length 1.
9. Correctly assigns values when `recycle` is not "none" and multiple values are given.
10. Quietly accepts only the first value in `width_units` when `recycle = "none"`.

The functional behavior of the `fixed` and `recycle` arguments is not tested for this function. It is tested and validated in the tests for `index_to_sprinkle`.
tidy_levels_labels

See Also

sprinkle, index_to_sprinkle

---

str_extract_base  Extract Patterns from Character Strings

Description

This is a utility function that follow the pattern of stringr::str_extract_all. It is provided to avoid the dependency on the stringr package.

Usage

str_extract_base(x, pattern)

str_split_fixed_base(x, pattern, n)

Arguments

x  character vector.
pattern  character(1) of the pattern to find in x
n  The number of splits.

Source

https://stackoverflow.com/a/27274231/1017276

See Also

stringr::str_extract_all

---

tidy_levels_labels  Term and Level Descriptions for pixiedust Tables

Description

Default model objects identify rows of results with appropriate term name. More often than not, the term name is not suitable for formally reported output. tidy_levels_labels performs some basic work to quickly provide more readable descriptors for cases where they can easily be obtained. These descriptors are retrieved from the data, however, so the utility is determined by the user’s habits in providing term labels and meaningful factor levels.

Due to the complexity of the terms that could be used for a model, it isn’t practical to attempt to recover human-ready descriptors for every conceivable term. This would require recovering variable names for any number of functions. pixiedust only goes after the easiest to obtain. Replacements no managed by tidy_levels_labels may still be made with the replace sprinkle.
tidy_levels_labels

Usage

tidy_levels_labels(
  object,
  descriptors = "term",
  numeric_level = c("term", "term_plain", "label"),
  argcheck = NULL
)

Arguments

- **object**: A model object, ideally with a `model.frame` method. It is unclear at the moment (18 Sept. 2015) what will happen if an object is passed that does not have a `model.frame` method.

- **descriptors**: A character vector indicating the descriptors to be used in the table. Acceptable inputs are "term", "term_plain", "label", "level", and "level_detail". These may be used in any combination and any order, with the descriptors appearing in the table from left to right in the order given. The default, "term", returns only the term descriptor and is identical to the output provided by `broom::tidy` methods. See Details for a full explanation of each option and the Examples for sample output.

- **numeric_level**: A character string that determines which descriptor is used for numeric variables in the "level_detail" descriptor when a numeric has an interaction with a factor. Acceptable inputs are "term", "term_plain", and "label".

- **argcheck**: An assert collection created by `checkmate::makeAssertCollection`. Under normal circumstances, this is passed from `dust`. If NULL, as in the case it is run outside of `dust`, a new collection is created and the assertions are reported within `tidy_levels_labels`.

Details

The user may select up to five columns of descriptors, although doing so would certainly create some ambiguity. See the Examples for sample output.

- "term" The term name used in the R model summary
- "term_plain" The term name used in the formula. For variables that produce multiple term names (such as factors), the plain term name may be duplicated. For example, a factor that has term names FctrB and FctrC, indicating rows for levels B and C of the variable Fctr, will have two rows of "term_plain" of just Fctr.
- "label" Provides the label attached to the data using `labelVector::get_label`. When a term is not associated with a label, the value of `term_plain` is returned instead. Note that, variable names will disassociate with a label if they are used in a function (such as `factor(x)` or `x^2`.
- "level" Indicates the level being compared within a factor (or an interaction involving a factor), otherwise it returns NA. It may also be said that this value is the appendix to a factor name. For the term FctrB, this would just be B.
"level_detail" Gives additional information to level by including the reference level of the factor. For the term FctrB, this would return "B vs A". When an interaction with a numeric variable is present, the level for the numeric may be either term_plain or label, the choice being controlled by the level_detail argument.

Restrictions

The descriptors, other than "term", generally don't make sense for data frame objects. The use of tidy_levels_labels is not permitted within the dust function, but is allowed if you really want it by pixiedust::tidy_levels_labels.

Other special cases noted in future uses will be documented here, but in general, if it isn’t a model object, you probably don’t really want to use this.

Author(s)

Benjamin Nutter

Examples

```r
### Descriptors for lm output with no interactions
mtcars2 <- mtcars
mtcars2$mpg <- labelVector::set_label(mtcars2$mpg, "Gas Mileage")
mtcars2$qsec <- labelVector::set_label(mtcars2$qsec, "Quarter Mile Time")
mtcars2$am <- labelVector::set_label(mtcars2$am, "Transmission")
mtcars2$wt <- labelVector::set_label(mtcars2$wt, "Weight")
mtcars2$gear <- labelVector::set_label(mtcars2$gear, "Gears")

### Basic Output for a model with no interactions
### Note: numeric_level has no impact as there are no
### interactions involving numeric variables.
fit <- lm(mpg ~ qsec + factor(am) + wt + factor(gear), data = mtcars2)
pixiedust::tidy_levels_labels(fit,
    descriptors = c("term", "term_plain", "label", "level", "level_detail"),
    numeric_level = "term")

### Assign factors ahead of the model. This allows
### the user to determine the levels that display.
### Compare the output for 'am' with the output for 'gear'

mtcars2$am <- factor(mtcars2$am, 0:1, c("Automatic", "Manual"))
mtcars2$am <- labelVector::set_label(mtcars2$am, "Transmission")
# Label was lost in variable conversion
fit <- lm(mpg ~ qsec + am + wt + factor(gear), data = mtcars2)
pixiedust::tidy_levels_labels(fit,
    descriptors = c("term", "term_plain", "label", "level", "level_detail"),
    numeric_level = "term")

### Include an interaction between a factor and numeric.
```
```r
fit <- lm(mpg ~ qsec + am * wt + factor(gear), data = mtcars2)
pixiedust:::tidy_levels_labels(fit,  
descriptors = c("term", "term_plain", "label", "level", "level_detail"),  
numeric_level = "term")

### Now observe how 'level' and 'level_detail' change  
### in the interaction terms as we choose different  
### values for 'numeric_level'  

pixiedust:::tidy_levels_labels(fit,  
descriptors = c("term", "term_plain", "label", "level", "level_detail"),  
numeric_level = "term_plain")
pixiedust:::tidy_levels_labels(fit,  
descriptors = c("term", "term_plain", "label", "level", "level_detail"),  
numeric_level = "label")
```

---

### magrittr forward-pipe operator

**Description**

Pipe an object forward into a function or call expression

**Usage**

```r
lhs %>% rhs
```

**Arguments**

- `lhs, rhs` A dataset and function to apply to it

---

### Chain together multiple operations

**Description**

Chain together multiple operations and save to the object at the start of the chain. See ‘magrittr’ documentation for details.

**Usage**

```r
lhs %<>% rhs
```

**Arguments**

- `lhs, rhs` A data set and function to apply it to
## Index

```
<table>
<thead>
<tr>
<th>Function</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.make_dataframe_long</td>
<td>26</td>
</tr>
<tr>
<td>.reshape_data_internal</td>
<td></td>
</tr>
<tr>
<td>%&gt;% (rbind_internal)</td>
<td>25, 99</td>
</tr>
<tr>
<td>as.data.frame.dust</td>
<td>3</td>
</tr>
<tr>
<td>as.data.frame.dust_list</td>
<td>3</td>
</tr>
<tr>
<td>asis_output</td>
<td>23</td>
</tr>
<tr>
<td>dust</td>
<td>4, 49, 53, 54, 56, 63, 74–76, 78, 79, 93</td>
</tr>
<tr>
<td>fixed_header_css</td>
<td>8, 9, 10, 61, 62</td>
</tr>
<tr>
<td>gaze</td>
<td>11</td>
</tr>
<tr>
<td>get_dust_part</td>
<td>8, 12</td>
</tr>
<tr>
<td>get_pixie_count (pixie_count)</td>
<td>22</td>
</tr>
<tr>
<td>glance</td>
<td>7</td>
</tr>
<tr>
<td>glance_foot</td>
<td>6, 8, 12</td>
</tr>
<tr>
<td>htmlPreserve</td>
<td>75</td>
</tr>
<tr>
<td>increment_pixie_count (pixie_count)</td>
<td>22</td>
</tr>
<tr>
<td>index_to_sprinkle</td>
<td>14, 44, 46, 48, 52, 59, 68, 71, 73, 81, 82, 84–86, 88, 90, 92, 95, 96</td>
</tr>
<tr>
<td>is_valid_color</td>
<td>15</td>
</tr>
<tr>
<td>is_valid_color_single (is_valid_color)</td>
<td>15</td>
</tr>
<tr>
<td>knit_print.dust</td>
<td>16</td>
</tr>
<tr>
<td>knit_print.dust_list (knit_print.dust)</td>
<td>16</td>
</tr>
<tr>
<td>latexTranslate</td>
<td>39, 92</td>
</tr>
<tr>
<td>medley</td>
<td>16</td>
</tr>
<tr>
<td>medley_all_borders</td>
<td>17</td>
</tr>
<tr>
<td>medley_bw (medley)</td>
<td>16</td>
</tr>
<tr>
<td>medley_model (medley)</td>
<td>16</td>
</tr>
<tr>
<td>pixie_count</td>
<td>22</td>
</tr>
<tr>
<td>pixiedust</td>
<td>7, 8, 18</td>
</tr>
<tr>
<td>pixiedust_print_method</td>
<td>20</td>
</tr>
<tr>
<td>pixiemap (pixieply)</td>
<td>20</td>
</tr>
<tr>
<td>pixieply</td>
<td>20</td>
</tr>
<tr>
<td>print.dust</td>
<td>23</td>
</tr>
<tr>
<td>print.dust_list (print.dust)</td>
<td>23</td>
</tr>
<tr>
<td>pval_string</td>
<td>24</td>
</tr>
<tr>
<td>pvalString (pval_string)</td>
<td>24</td>
</tr>
<tr>
<td>rbind_internal</td>
<td>25</td>
</tr>
<tr>
<td>round</td>
<td>90</td>
</tr>
<tr>
<td>sanitize_latex</td>
<td>26</td>
</tr>
<tr>
<td>sapply</td>
<td>21</td>
</tr>
<tr>
<td>set_pixie_count</td>
<td>19</td>
</tr>
<tr>
<td>set_pixie_count (pixie_count)</td>
<td>22</td>
</tr>
<tr>
<td>sprinkle</td>
<td>7, 28, 44, 46, 48, 49, 52–54, 56, 57, 59, 63, 68, 71, 73–76, 78, 79, 81, 82, 85, 86, 88, 90, 92, 93, 96</td>
</tr>
<tr>
<td>sprinkle_align</td>
<td>42</td>
</tr>
<tr>
<td>sprinkle_background (sprinkle_bg)</td>
<td>44</td>
</tr>
<tr>
<td>sprinkle_bg</td>
<td>44, 48</td>
</tr>
<tr>
<td>sprinkle_bg_pattern</td>
<td>46, 46</td>
</tr>
<tr>
<td>sprinkle_bookdown</td>
<td>48</td>
</tr>
<tr>
<td>sprinkle_border</td>
<td>49</td>
</tr>
<tr>
<td>sprinkle_borderCollapse</td>
<td>52</td>
</tr>
<tr>
<td>sprinkle_caption</td>
<td>54</td>
</tr>
<tr>
<td>sprinkle_caption_number</td>
<td>55</td>
</tr>
<tr>
<td>sprinkle_colnames</td>
<td>42, 56</td>
</tr>
<tr>
<td>sprinkle_discrete</td>
<td>57</td>
</tr>
<tr>
<td>sprinkle_fixed_header</td>
<td>59</td>
</tr>
<tr>
<td>sprinkle_float</td>
<td>62</td>
</tr>
<tr>
<td>sprinkle_fn</td>
<td>64</td>
</tr>
<tr>
<td>sprinkle_font</td>
<td>66</td>
</tr>
<tr>
<td>sprinkle_gradient</td>
<td>69</td>
</tr>
<tr>
<td>sprinkle_height</td>
<td>71</td>
</tr>
<tr>
<td>sprinkle_hhline</td>
<td>73</td>
</tr>
</tbody>
</table>
```
sprinkle_html_preserve, 74
sprinkle_justify, 76
sprinkle_label, 77
sprinkle_longtable, 78
sprinkle_merge, 79
sprinkle_na_string, 81
sprinkle_pad, 83
sprinkle_print_method(sprinkle), 28
sprinkle_replace, 85
sprinkle_rotate_degree, 87
sprinkle_round, 89
sprinkle_sanitize, 90
sprinkle_tabcolsep, 92
sprinkle_table(sprinkle), 28
sprinkle_width, 94
str_extract_base, 96
str_split_fixed_base
  (str_extract_base), 96
tidy, 8
tidy_levels_labels, 6, 8, 96