

Package ‘pillar’

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Title Coloured Formatting for Columns

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Description Provides 'pillar' and 'colonnade' generics designed for formatting columns of data using the full range of colours provided by modern terminals.

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URL <https://pillar.r-lib.org/>, <https://github.com/r-lib/pillar>

BugReports <https://github.com/r-lib/pillar/issues>

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R topics documented:

pillar-package	2
align	3
char	4
ctl_new_pillar	5
dim_desc	7
format_glimpse	8
format_type_sum	9
get_extent	10
glimpse	10
new_ornament	11
new_pillar	12
new_pillar_component	13
new_pillar_shaft	14
new_pillar_title	15
new_pillar_type	16
num	16
pillar	19
pillar_options	20
pillar_shaft	22
style_num	24
tbl_format_body	25
tbl_format_footer	26
tbl_format_header	26
tbl_format_setup	27
tbl_sum	29
Index	30

pillar-package *pillar: Coloured Formatting for Columns*

Description**[Stable]**

Formats tabular data in columns or rows using the full range of colours provided by modern terminals. Provides various generics for making every aspect of the display customizable.

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See Also

- [pillar\(\)](#) for formatting a single column,
- [print.tbl\(\)](#) for formatting data-frame-like objects,
- [pillar_options](#) for a list of package options.

Examples

```
pillar(1:3)
pillar(c(1, 2, 3))
pillar(factor(letters[1:3]), title = "letters")
colonnade(iris[1:3, ])
```

align

Alignment helper

Description

Facilitates easy alignment of strings within a character vector. Designed to help implementers of formatters for custom data types.

Usage

```
align(x, width = NULL, align = c("left", "right"), space = " ")
```

Arguments

x	A character vector
width	The width that each string is padded to. If NULL, the maximum display width of the character vector is used (see get_max_extent()).
align	How should strings be aligned? If align = left then padding appears on the right, and vice versa.
space	What character should be used for the padding?

Examples

```
align(c("abc", "de"), align = "left")
align(c("abc", "de"), align = "right")
```

char

Format a character vector in a tibble

Description

[Experimental]

Constructs a character vector that can be formatted with predefined minimum width or without width restrictions, and where the abbreviation style can be configured.

The formatting is applied when the vector is printed or formatted, and also in a tibble column.

`set_char_opts()` adds formatting options to an arbitrary character vector, useful for composing with other types.

Usage

```
char(  
  x,  
  ...,  
  min_chars = NULL,  
  shorten = c("back", "front", "mid", "abbreviate")  
)
```

```
set_char_opts(  
  x,  
  ...,  
  min_chars = NULL,  
  shorten = c("back", "front", "mid", "abbreviate")  
)
```

Arguments

x	A character vector.
...	These dots are for future extensions and must be empty.
min_chars	The minimum width to allocate to this column, defaults to 15. The "pillar.min_chars" option is not consulted.
shorten	How to abbreviate the data if necessary: <ul style="list-style-type: none">• "back" (default): add an ellipsis at the end• "front": add an ellipsis at the front• "mid": add an ellipsis in the middle• "abbreviate": use <code>abbreviate()</code>

See Also

Other vector classes: `num()`

Examples

```

# Display as a vector:
char(letters[1:3])

# Space constraints:
rand_strings <- stringi::stri_rand_strings(10, seq(40, 22, by = -2))

# Plain character vectors get truncated if space is limited:
data_with_id <- function(id) {
  tibble::tibble(
    id,
    some_number_1 = 1, some_number_2 = 2, some_number_3 = 3,
    some_number_4 = 4, some_number_5 = 5, some_number_6 = 6,
    some_number_7 = 7, some_number_8 = 8, some_number_9 = 9
  )
}
data_with_id(rand_strings)

# Use char() to avoid or control truncation
data_with_id(char(rand_strings, min_chars = 24))
data_with_id(char(rand_strings, min_chars = Inf))
data_with_id(char(rand_strings, min_chars = 24, shorten = "mid"))

# Lorem Ipsum, one sentence per row.
lipsum <- unlist(strsplit(stringi::stri_rand_lipsum(1), "(?<=[.]) +", perl = TRUE))
tibble::tibble(
  back = char(lipsum, shorten = "back"),
  front = char(lipsum, shorten = "front"),
  mid = char(lipsum, shorten = "mid")
)
tibble::tibble(abbr = char(lipsum, shorten = "abbreviate"))

```

ctl_new_pillar

Customize your tibble subclass

Description

Gain full control over the appearance of the pillars of your tibble subclass in its body. These methods are intended for implementers of subclasses of the "tbl" class. Users will rarely need them.

Usage

```
ctl_new_pillar(controller, x, width, ..., title = NULL)
```

```
ctl_new_compound_pillar(controller, x, width, ..., title = NULL)
```

Arguments

controller	The object of class "tbl" currently printed.
x	A vector, can also be a data frame, array or matrix in <code>ctl_new_compound_pillar()</code>
width	The available width, can be a vector for multiple tiers
...	These dots are for future extensions and must be empty.
title	The title, derived from the name of the column in the data

Details

`ctl_new_pillar()` is called to construct pillars for regular (one-dimensional) vectors. The default implementation returns an object constructed with `pillar()`. Extend this method to tweak pillar components returned from the default implementation. Override this method to completely change the appearance of the pillars.

`ctl_new_compound_pillar()` is called for compound pillars: columns that are data frames, matrices or arrays. The default implementation returns a compound pillar with suitable formatting for the titles and types of the sub-pillar. Users will only rarely need to override this method if ever.

All components must be of the same height. This restriction may be levied in the future.

Implementations should return NULL if none of the data fits the available width.

Examples

```
# Create pillar objects
ctl_new_pillar(
  palmerpenguins::penguins,
  palmerpenguins::penguins$species[1:3], width = 60
)
ctl_new_pillar(
  palmerpenguins::penguins,
  palmerpenguins::penguins$bill_length_mm[1:3],
  width = 60
)

# Packed data frame
ctl_new_compound_pillar(
  tibble::tibble(),
  palmerpenguins::penguins,
  width = 60
)

# Packed matrix
ctl_new_compound_pillar(tibble::tibble(), matrix(1:6, ncol = 2), width = 60)

# Packed array
ctl_new_compound_pillar(tibble::tibble(), Titanic, width = 60)

# Customize output
```

```
lines <- function(char = "-") {
  stopifnot(nchar(char) == 1)
  structure(char, class = "lines")
}

format.lines <- function(x, width, ...) {
  paste(rep(x, width), collapse = "")
}

ctl_new_pillar.line_tbl <- function(controller, x, width, ..., title = NULL) {
  out <- NextMethod()
  new_pillar(list(
    title = out$title,
    type = out$type,
    lines = new_pillar_component(list(lines("=")), width = 1),
    data = out$data
  ))
}

vctrs::new_data_frame(
  list(a = 1:3, b = letters[1:3]),
  class = c("line_tbl", "tbl")
)
```

dim_desc

Format dimensions

Description

Multi-dimensional objects are formatted as a x b x ..., for vectors the length is returned.

Usage

```
dim_desc(x)
```

Arguments

x The object to format the dimensions for

Examples

```
dim_desc(1:10)
dim_desc(Titanic)
```

format_glimpse	<i>Format a vector for horizontal printing</i>
----------------	--

Description

[Experimental]

This generic provides the logic for printing vectors in `glimpse()`.

The output strives to be as unambiguous as possible, without compromising on readability. In a list, to distinguish between vectors and nested lists, the latter are surrounded by `[]` brackets. Empty lists are shown as `[]`. Vectors inside lists, of length not equal to one, are surrounded by `<>` angle brackets. Empty vectors are shown as `<>`.

Usage

```
format_glimpse(x, ...)
```

Arguments

<code>x</code>	A vector.
<code>...</code>	Arguments passed to methods.

Value

A character vector of the same length as `x`.

Examples

```
format_glimpse(1:3)

# Lists use [], vectors inside lists use <>
format_glimpse(list(1:3))
format_glimpse(list(1, 2:3))
format_glimpse(list(list(1), list(2:3)))
format_glimpse(list(as.list(1), as.list(2:3)))
format_glimpse(list(character()))
format_glimpse(list(NULL))

# Character strings are always quoted
writeLines(format_glimpse(letters[1:3]))
writeLines(format_glimpse(c("A", "B, C")))

# Factors are quoted only when needed
writeLines(format_glimpse(factor(letters[1:3])))
writeLines(format_glimpse(factor(c("A", "B, C"))))
```

format_type_sum	<i>Format a type summary</i>
-----------------	------------------------------

Description

Called on values returned from `type_sum()` for defining the description in the capital.

Usage

```
format_type_sum(x, width, ...)
```

```
## Default S3 method:  
format_type_sum(x, width, ...)
```

```
## S3 method for class 'AsIs'  
format_type_sum(x, width, ...)
```

Arguments

x	A return value from <code>type_sum()</code>
width	The desired total width. If the returned string still is wider, it will be trimmed. Can be NULL.
...	Arguments passed to methods.

Details

Two methods are implemented by default for this generic: the default method, and the method for the "AsIs" class. Return `I("type")` from your `type_sum()` implementation to format the type without angle brackets. For even more control over the formatting, implement your own method.

Examples

```
# Default method: show the type with angle brackets  
format_type_sum(1, NULL)  
pillar(1)  
  
# AsIs method: show the type without angle brackets  
type_sum.accel <- function(x) {  
  I("kg m/s^2")  
}  
  
accel <- structure(9.81, class = "accel")  
pillar(accel)
```

get_extent	<i>Calculate display width</i>
------------	--------------------------------

Description

get_extent() calculates the display width for each string in a character vector.

get_max_extent() calculates the maximum display width of all strings in a character vector, zero for empty vectors.

Usage

```
get_extent(x)
```

```
get_max_extent(x)
```

Arguments

x A character vector.

Examples

```
get_extent(c("abc", "de"))
get_extent("\u904b\u6c23")
get_max_extent(c("abc", "de"))
```

glimpse	<i>Get a glimpse of your data</i>
---------	-----------------------------------

Description

glimpse() is like a transposed version of print(): columns run down the page, and data runs across. This makes it possible to see every column in a data frame. It's a little like `str()` applied to a data frame but it tries to show you as much data as possible. (And it always shows the underlying data, even when applied to a remote data source.)

See [format_glimpse\(\)](#) for details on the formatting.

Usage

```
glimpse(x, width = NULL, ...)
```

Arguments

x An object to glimpse at.

width Width of output: defaults to the setting of the width [option](#) (if finite) or the width of the console.

... Unused, for extensibility.

Value

x original x is (invisibly) returned, allowing `glimpse()` to be used within a data pipe line.

S3 methods

`glimpse` is an S3 generic with a customised method for `tbls` and `data.frames`, and a default method that calls `str()`.

Examples

```
glimpse(mtcars)
```

```
glimpse(nycflights13::flights)
```

new_ornament

Helper to define the contents of a pillar

Description

This function is useful if your data renders differently depending on the available width. In this case, implement the `pillar_shaft()` method for your class to return a subclass of "pillar_shaft" and have the `format()` method for this subclass call `new_ornament()`. See the implementation of `pillar_shaft.numeric()` and `format.pillar_shaft_decimal()` for an example.

Usage

```
new_ornament(x, width = NULL, align = NULL)
```

Arguments

x	A character vector with formatting, see crayon
width	An optional width of the resulting pillar, computed from x if missing
align	Alignment, one of "left" or "right"

Examples

```
new_ornament(c("abc", "de"), align = "right")
```

new_pillar	<i>Construct a custom pillar object</i>
------------	---

Description

[Experimental]

`new_pillar()` is the low-level constructor for pillar objects. It supports arbitrary components. See [pillar\(\)](#) for the high-level constructor with default components.

Usage

```
new_pillar(components, ..., width = NULL, class = NULL)
```

Arguments

<code>components</code>	A named list of components constructed with pillar_component() .
<code>...</code>	These dots are for future extensions and must be empty.
<code>width</code>	Default width, optional.
<code>class</code>	Name of subclass.

Details

Arbitrary components are supported. If your tibble subclass needs more or different components in its pillars, override or extend [ctl_new_pillar\(\)](#) and perhaps [ctl_new_compound_pillar\(\)](#).

Examples

```
lines <- function(char = "-") {
  stopifnot(nchar(char) == 1)
  structure(char, class = "lines")
}

format.lines <- function(x, width, ...) {
  paste(rep(x, width), collapse = "")
}

new_pillar(list(
  title = pillar_component(new_ornament(c("abc", "de"), align = "right")),
  lines = new_pillar_component(list(lines("=")), width = 1)
))
```

new_pillar_component *Components of a pillar*

Description

new_pillar_component() constructs an object of class "pillar_component".

pillar_component() is a convenience helper that wraps the input in a list and extracts width and minimum width.

Usage

```
new_pillar_component(x, ..., width, min_width = NULL)
```

```
pillar_component(x)
```

Arguments

x	A bare list (for new_pillar_component()), or an object with attributes "width" and "min_width" attributes (for pillar_component()).
...	These dots are for future extensions and must be empty.
width, min_width	Width and minimum width for the new component. If min_width is NULL, it is assumed to match width.

Details

Objects of class "pillar" are internally a named lists of their components. The default components are title (may be missing), type, and data. Each component is a "pillar_component".

This class captures contents that can be fitted in a rectangle. Each component consists of one or multiple cells that are aligned horizontally (with one space in between) when printed. Each cell has a maximum (i.e., desired) width and may have a minimum width if the contents are compressible. The component object stores the width of the cells as an attribute.

Examples

```
new_pillar_component(list(letters[1:3]), width = 1)
pillar_component(new_pillar_title("letters"))
pillar_component(new_pillar_type(letters))
pillar_component(pillar_shaft(letters[1:3]))
```

new_pillar_shaft *Constructor for column data*

Description

The `new_pillar_shaft()` constructor creates objects of the "pillar_shaft" class. This is a virtual or abstract class, you must specify the class argument. By convention, this should be a string that starts with "pillar_shaft_". See `vignette("extending", package = "tibble")` for usage examples.

This method accepts a vector of arbitrary length and is expected to return an S3 object with the following properties:

- It has an attribute "width"
- It can have an attribute "min_width", if missing, "width" is used
- It must implement a method `format(x, width, ...)` that can be called with any value between `min_width` and `width`
- This method must return an object that inherits from `character` and has attributes "align" (with supported values "left", "right", and "center") and "width"

The function `new_pillar_shaft()` returns such an object, and also correctly formats NA values. In many cases, the implementation of `pillar_shaft.your_class_name()` will format the data as a character vector (using color for emphasis) and simply call `new_pillar_shaft()`. See `pillar::pillar_shaft.numeric` for a code that allows changing the display depending on the available width.

`new_pillar_shaft_simple()` provides an implementation of the `pillar_shaft` class suitable for output that has a fixed formatting, which will be truncated with a continuation character (ellipsis or ~) if it doesn't fit the available width. By default, the required width is computed from the natural width of the formatted argument.

Usage

```
new_pillar_shaft(
  x,
  ...,
  width = NULL,
  min_width = width,
  class = NULL,
  subclass = NULL
)
```

```
new_pillar_shaft_simple(
  formatted,
  ...,
  width = NULL,
  align = "left",
  min_width = NULL,
```

```

na = NULL,
na_indent = 0L,
shorten = c("back", "front", "mid", "abbreviate")
)

```

Arguments

x	An object
...	Additional attributes.
width	The maximum column width.
min_width	The minimum allowed column width, width if omitted.
class	The name of the subclass.
subclass	Deprecated, pass the class argument instead.
formatted	An object coercible to character .
align	Alignment of the column.
na	String to use as NA value, defaults to "NA" styled with style_na() with fallback if color is not available.
na_indent	Indentation of NA values.
shorten	How to abbreviate the data if necessary: <ul style="list-style-type: none"> • "back" (default): add an ellipsis at the end • "front": add an ellipsis at the front • "mid": add an ellipsis in the middle • "abbreviate": use abbreviate()

Details

The formatted argument may also contain ANSI escapes to change color or other attributes of the text, see [crayon](#).

new_pillar_title	<i>Prepare a column title for formatting</i>
------------------	--

Description

Call [format\(\)](#) on the result to render column titles.

Usage

```
new_pillar_title(x, ...)
```

Arguments

x	A character vector of column titles.
...	These dots are for future extensions and must be empty.

Examples

```
format(new_pillar_title(names(iris)))
```

new_pillar_type	<i>Prepare a column type for formatting</i>
-----------------	---

Description

Calls `type_sum()` to format the type. Call `format()` on the result to render column types.

Usage

```
new_pillar_type(x, ...)
```

Arguments

`x` A vector for which the type is to be retrieved.
`...` These dots are for future extensions and must be empty.

Examples

```
format(new_pillar_type(iris$Species))
```

num	<i>Format a numeric vector in a tibble</i>
-----	--

Description**[Experimental]**

Constructs a numeric vector that can be formatted with predefined significant digits, or with a maximum or fixed number of digits after the decimal point. Scaling is supported, as well as forcing a decimal, scientific or engineering notation. If a label is given, it is shown in the header of a column.

The formatting is applied when the vector is printed or formatted, and also in a tibble column. The formatting annotation and the class survives most arithmetic transformations, the most notable exceptions are `var()` and `sd()`.

`set_num_opts()` adds formatting options to an arbitrary numeric vector, useful for composing with other types.

Usage

```
num(
  x,
  ...,
  sigfig = NULL,
  digits = NULL,
  label = NULL,
  scale = NULL,
  notation = c("fit", "dec", "sci", "eng", "si"),
  fixed_exponent = NULL,
  extra_sigfig = NULL
)
```

```
set_num_opts(
  x,
  ...,
  sigfig = NULL,
  digits = NULL,
  label = NULL,
  scale = NULL,
  notation = c("fit", "dec", "sci", "eng", "si"),
  fixed_exponent = NULL,
  extra_sigfig = NULL
)
```

Arguments

x	A numeric vector.
...	These dots are for future extensions and must be empty.
sigfig	Define the number of significant digits to show. Must be one or greater. The "pillar.sigfig" option is not consulted. Can't be combined with digits.
digits	Number of digits after the decimal points to show. Positive numbers specify the exact number of digits to show. Negative numbers specify (after negation) the maximum number of digits to show. With digits = 2, the numbers 1.2 and 1.234 are printed as 1.20 and 1.23, with digits = -2 as 1.2 and 1.23, respectively. Can't be combined with sigfig.
label	A label to show instead of the type description.
scale	Multiplier to apply to the data before showing. Useful for displaying e.g. percentages. Must be combined with label.
notation	One of "fit", "dec", "sci", "eng", or "si". <ul style="list-style-type: none"> • "fit": Use decimal notation if it fits and if it consumes 13 digits or less, otherwise use scientific notation. (The default for numeric pillars.) • "dec": Use decimal notation, regardless of width. • "sci": Use scientific notation. • "eng": Use engineering notation, i.e. scientific notation using exponents that are a multiple of three.

- "si": Use SI notation, prefixes between 1e-24 and 1e24 are supported.
- fixed_exponent Use the same exponent for all numbers in scientific, engineering or SI notation. -Inf uses the smallest, +Inf the largest fixed_exponent present in the data. The default is to use varying exponents.
- extra_sigfig If TRUE, increase the number of significant digits if the data consists of numbers of the same magnitude with subtle differences.

See Also

Other vector classes: [char\(\)](#)

Examples

```
# Display as a vector
num(9:11 * 100 + 0.5)

# Significant figures
tibble::tibble(
  x3 = num(9:11 * 100 + 0.5, sigfig = 3),
  x4 = num(9:11 * 100 + 0.5, sigfig = 4),
  x5 = num(9:11 * 100 + 0.5, sigfig = 5),
)

# Maximum digits after the decimal points
tibble::tibble(
  x0 = num(9:11 * 100 + 0.5, digits = 0),
  x1 = num(9:11 * 100 + 0.5, digits = -1),
  x2 = num(9:11 * 100 + 0.5, digits = -2),
)

# Use fixed digits and a currency label
tibble::tibble(
  usd = num(9:11 * 100 + 0.5, digits = 2, label = "USD"),
  gbp = num(9:11 * 100 + 0.5, digits = 2, label = "£"),
  chf = num(9:11 * 100 + 0.5, digits = 2, label = "SFr")
)

# Scale
tibble::tibble(
  small = num(9:11 / 1000 + 0.00005, label = "%", scale = 100),
  medium = num(9:11 / 100 + 0.0005, label = "%", scale = 100),
  large = num(9:11 / 10 + 0.005, label = "%", scale = 100)
)

# Notation
tibble::tibble(
  sci = num(10^(-13:6), notation = "sci"),
  eng = num(10^(-13:6), notation = "eng"),
  si = num(10^(-13:6), notation = "si"),
  dec = num(10^(-13:6), notation = "dec")
)
```

```

# Fixed exponent
tibble::tibble(
  scimin = num(10^(-7:6) * 123, notation = "sci", fixed_exponent = -Inf),
  engmin = num(10^(-7:6) * 123, notation = "eng", fixed_exponent = -Inf),
  simin = num(10^(-7:6) * 123, notation = "si", fixed_exponent = -Inf)
)

tibble::tibble(
  scismall = num(10^(-7:6) * 123, notation = "sci", fixed_exponent = -3),
  scilarge = num(10^(-7:6) * 123, notation = "sci", fixed_exponent = 3),
  scimax = num(10^(-7:6) * 123, notation = "sci", fixed_exponent = Inf)
)

#' Extra significant digits
tibble::tibble(
  default = num(100 + 1:3 * 0.001),
  extra1 = num(100 + 1:3 * 0.001, extra_sigfig = TRUE),
  extra2 = num(100 + 1:3 * 0.0001, extra_sigfig = TRUE),
  extra3 = num(10000 + 1:3 * 0.00001, extra_sigfig = TRUE)
)

```

pillar

Object for formatting a vector suitable for tabular display

Description

`pillar()` creates an object that formats a vector. The output uses one row for a title (if given), one row for the type, and `vec_size(x)` rows for the data.

Usage

```
pillar(x, title = NULL, width = NULL, ...)
```

Arguments

<code>x</code>	A vector to format.
<code>title</code>	An optional title for the column. The title will be used "as is", no quoting will be applied.
<code>width</code>	Default width, optional.
<code>...</code>	Passed on to <code>pillar_shaft()</code> .

Details

A pillar consists of arbitrary components. The `pillar()` constructor uses `title`, `type`, and `data`.

- `title` via `new_pillar_title()`

- type via `new_pillar_type()`, which calls `type_sum()` internally
- data via `pillar_shaft()`

All components are formatted via `format()` when displaying the pillar. A width argument is passed to each `format()` call.

As of pillar 1.5.0, `pillar()` returns NULL if the width is insufficient to display the data.

Examples

```
x <- 123456789 * (10^c(-1, -3, -5, NA, -8, -10))
pillar(x)
pillar(-x)
pillar(runif(10))
pillar(rcauchy(20))

# Special values are highlighted
pillar(c(runif(5), NA, NaN, Inf, -Inf))

# Very wide ranges will be displayed in scientific format
pillar(c(1e10, 1e-10), width = 20)
pillar(c(1e10, 1e-10))

x <- c(FALSE, NA, FALSE, FALSE, TRUE, FALSE, FALSE, TRUE, FALSE, TRUE)
pillar(x)

x <- c("This is string is rather long", NA, "?", "Short")
pillar(x)
pillar(x, width = 30)
pillar(x, width = 5)

date <- as.Date("2017-05-15")
pillar(date + c(1, NA, 3:5))
pillar(as.POSIXct(date) + c(30, NA, 600, 3600, 86400))
```

pillar_options

Package options

Description

Options that affect display of tibble-like output.

Usage

```
pillar_options
```

Details

These options can be set via `options()` and queried via `getOption()`. For this, add a `pillar.` prefix (the package name and a dot) to the option name. Example: for an option `foo`, use `options(pillar.foo = value)` to set it and `getOption("pillar.foo")` to retrieve the current value. An option value of NULL means that the default is used.

Options for the pillar package

- `print_max`: Maximum number of rows printed, default: 20. Set to `Inf` to always print all rows. For compatibility reasons, `getOption("tibble.print_max")` and `getOption("dplyr.print_max")` are also consulted, this will be soft-deprecated in pillar v2.0.0.
- `print_min`: Number of rows printed if the table has more than `print_max` rows, default: 10. For compatibility reasons, `getOption("tibble.print_min")` and `getOption("dplyr.print_min")` are also consulted, this will be soft-deprecated in pillar v2.0.0.
- `width`: Output width. Default: `NULL` (use `getOption("width")`). This can be larger than `getOption("width")`, in this case the output of the table's body is distributed over multiple tiers for wide tibbles. For compatibility reasons, `getOption("tibble.width")` and `getOption("dplyr.width")` are also consulted, this will be soft-deprecated in pillar v2.0.0.
- `max_footer_lines`: The maximum number of lines in the footer, default: 7. Set to `Inf` to turn off truncation of footer lines. The `max_extra_cols` option still limits the number of columns printed.
- `max_extra_cols`: The maximum number of columns printed in the footer, default: 100. Set to `Inf` to show all columns. Set the more predictable `max_footer_lines` to control the number of footer lines instead.
- `bold`: Use bold font, e.g. for column headers? This currently defaults to `FALSE`, because many terminal fonts have poor support for bold fonts.
- `subtle`: Use subtle style, e.g. for row numbers and data types? Default: `TRUE`.
- `subtle_num`: Use subtle style for insignificant digits? Default: `FALSE`, is also affected by the `subtle` option.
- `neg`: Highlight negative numbers? Default: `TRUE`.
- `sigfig`: The number of significant digits that will be printed and highlighted, default: 3. Set the `subtle` option to `FALSE` to turn off highlighting of significant digits.
- `min_title_chars`: The minimum number of characters for the column title, default: 15. Column titles may be truncated up to that width to save horizontal space. Set to `Inf` to turn off truncation of column titles.
- `min_chars`: The minimum number of characters wide to display character columns, default: 3. Character columns may be truncated up to that width to save horizontal space. Set to `Inf` to turn off truncation of character columns.
- `max_dec_width`: The maximum allowed width for decimal notation, default: 13.
- `bidi`: Set to `TRUE` for experimental support for bidirectional scripts. Default: `FALSE`. When this option is set, "left right override" and "first strong isolate" **Unicode controls** are inserted to ensure that text appears in its intended direction and that the column headings correspond to the correct columns.

Examples

```
# Default setting:
getOption("pillar.sigfig")
pillar(1.234567)

# Change for the duration of the session:
old <- options(pillar.sigfig = 6)
```

```
pillar(1.234567)

# Change back to the original value:
options(old)
pillar(1.234567)

# Local scope:
local({
  rlang::local_options(pillar.sigfig = 6)
  pillar(1.234567)
})
pillar(1.234567)
```

pillar_shaft

Column data

Description

Internal class for formatting the data for a column. `pillar_shaft()` is a coercion method that must be implemented for your data type to display it in a tibble.

This class comes with a default method for `print()` that calls `format()`. If `print()` is called without width argument, the natural width will be used when calling `format()`. Usually there's no need to implement this method for your subclass.

Your subclass must implement `format()`, the default implementation just raises an error. Your `format()` method can assume a valid value for the width argument.

Usage

```
pillar_shaft(x, ...)

## S3 method for class 'pillar_shaft'
print(x, width = NULL, ...)

## S3 method for class 'pillar_shaft'
format(x, width, ...)

## S3 method for class 'logical'
pillar_shaft(x, ...)

## S3 method for class 'numeric'
pillar_shaft(x, ..., sigfig = NULL)

## S3 method for class 'Date'
pillar_shaft(x, ...)

## S3 method for class 'POSIXt'
pillar_shaft(x, ...)
```

```
## S3 method for class 'character'
pillar_shaft(x, ..., min_width = NULL)

## S3 method for class 'pillar_vertical'
pillar_shaft(x, ..., min_width = NULL, na_indent = 0L, shorten = NULL)

## S3 method for class 'list'
pillar_shaft(x, ...)

## S3 method for class 'factor'
pillar_shaft(x, ...)

## S3 method for class 'AsIs'
pillar_shaft(x, ...)

## Default S3 method:
pillar_shaft(x, ...)
```

Arguments

x	A vector to format
...	Arguments passed to methods.
width	Width for printing and formatting.
sigfig	Deprecated, use <code>num()</code> or <code>set_num_opts()</code> on the data instead.
min_width	Deprecated, use <code>char()</code> or <code>set_char_opts()</code> on the data instead.
na_indent	Indentation of NA values.
shorten	How to abbreviate the data if necessary: <ul style="list-style-type: none">• "back" (default): add an ellipsis at the end• "front": add an ellipsis at the front• "mid": add an ellipsis in the middle• "abbreviate": use <code>abbreviate()</code>

Details

The default method will currently format via `format()`, but you should not rely on this behavior.

Examples

```
pillar_shaft(1:3)
pillar_shaft(1.5:3.5)
pillar_shaft(NA)
pillar_shaft(c(1:3, NA))
```

`style_num`*Styling helpers*

Description

Functions that allow implementers of formatters for custom data types to maintain a consistent style with the default data types.

Usage

```
style_num(x, negative, significant = rep_along(x, TRUE))
```

```
style_subtle(x)
```

```
style_subtle_num(x, negative)
```

```
style_bold(x)
```

```
style_na(x)
```

```
style_neg(x)
```

Arguments

`x` The character vector to style.

`negative, significant`

Logical vector the same length as `x` that indicate if the values are negative and significant, respectively

Details

`style_subtle()` is affected by the `subtle` [option](#).

`style_subtle_num()` is affected by the `subtle_num` [option](#), which is FALSE by default.

`style_bold()` is affected by the `bold` [option](#), which is FALSE by default.

`style_neg()` is affected by the `pillar.neg` [option](#).

See Also

[pillar_options](#) for a list of options

Examples

```
style_num(  
  c("123", "456"),  
  negative = c(TRUE, FALSE)  
)  
style_num(  
  c("123", "456"),  
  negative = c(TRUE, FALSE),  
  significant = c(TRUE, FALSE)  
)
```



```

  c("123", "456"),
  negative = c(TRUE, FALSE),
  significant = c(FALSE, FALSE)
)
style_subtle("text")
style_subtle_num(0.01 * 1:3, c(TRUE, FALSE, TRUE))
style_bold("Petal.Width")
style_na("NA")
style_neg("123")

```

tbl_format_body	<i>Format the body of a tibble</i>
-----------------	------------------------------------

Description

[Experimental]

For easier customization, the formatting of a tibble is split into three components: header, body, and footer. The `tbl_format_body()` method is responsible for formatting the body of a tibble.

Override this method if you need to change the appearance of all parts of the body. If you only need to change the appearance of a single data type, override `vctrs::vec_ptype_abbrev()` and `pillar_shaft()` for this data type.

Usage

```
tbl_format_body(x, setup, ...)
```

Arguments

<code>x</code>	A tibble-like object.
<code>setup</code>	A setup object returned from <code>tbl_format_setup()</code> .
<code>...</code>	These dots are for future extensions and must be empty.

Value

A character vector.

Examples

```

setup <- tbl_format_setup(palmerpenguins::penguins)
tbl_format_body(palmerpenguins::penguins, setup)

# Shortcut for debugging
tbl_format_body(setup)

```

tbl_format_footer *Format the footer of a tibble*

Description

[Experimental]

For easier customization, the formatting of a tibble is split into three components: header, body, and footer. The `tbl_format_footer()` method is responsible for formatting the footer of a tibble.

Override or extend this method if you need to change the appearance of the footer. The default implementation adds information about rows and columns that are not shown in the body.

Usage

```
tbl_format_footer(x, setup, ...)
```

Arguments

x	A tibble-like object.
setup	A setup object returned from <code>tbl_format_setup()</code> .
...	These dots are for future extensions and must be empty.

Value

A character vector.

Examples

```
setup <- tbl_format_setup(palmerpenguins::penguins)
tbl_format_footer(palmerpenguins::penguins, setup)

# Shortcut for debugging
tbl_format_footer(setup)
```

tbl_format_header *Format the header of a tibble*

Description

[Experimental]

For easier customization, the formatting of a tibble is split into three components: header, body, and footer. The `tbl_format_header()` method is responsible for formatting the header of a tibble.

Override this method if you need to change the appearance of the entire header. If you only need to change or extend the components shown in the header, override or extend `tbl_sum()` for your class which is called by the default method.

Usage

```
tbl_format_header(x, setup, ...)
```

Arguments

`x` A tibble-like object.

`setup` A setup object returned from `tbl_format_setup()`.

`...` These dots are for future extensions and must be empty.

Value

A character vector.

Examples

```
setup <- tbl_format_setup(palmerpenguins::penguins)
tbl_format_header(palmerpenguins::penguins, setup)

# Shortcut for debugging
tbl_format_header(setup)
```

tbl_format_setup	<i>Set up formatting</i>
------------------	--------------------------

Description

`tbl_format_setup()` is called by `format.tbl()`. This method collects information that is common to the header, body, and footer parts of a tibble. Examples:

- the dimensions sometimes are reported both in the header and (implicitly) in the footer of a tibble;
- the columns shown in the body decide which columns are shown in the footer.

This information is computed once in `tbl_format_setup()`. The result is passed on to the `tbl_format_header()`, `tbl_format_body()`, and `tbl_format_footer()` methods. If you need to customize parts of the printed output independently, override these methods instead.

Usage

```
tbl_format_setup(
  x,
  width = NULL,
  ...,
  n = NULL,
  max_extra_cols = NULL,
```

```

    max_footer_lines = NULL
  )

  ## S3 method for class 'tbl'
  tbl_format_setup(x, width, ..., n, max_extra_cols, max_footer_lines)

```

Arguments

x	An object.
width	Actual width for printing, a numeric greater than zero. This argument is mandatory for all implementations of this method.
...	Extra arguments to print.tbl() or format.tbl() .
n	Actual number of rows to print. No options should be considered by implementations of this method.
max_extra_cols	Number of columns to print abbreviated information for, if the width is too small for the entire tibble. No options should be considered by implementations of this method.
max_footer_lines	Maximum number of lines for the footer. No options should be considered by implementations of this method.

Details

Extend this method to prepare information that is used in several parts of the printed output of a tibble-like object, or to collect additional arguments passed via ... to [print.tbl\(\)](#) or [format.tbl\(\)](#).

We expect that `tbl_format_setup()` is extended only rarely, and overridden only in exceptional circumstances, if at all. If you override this method, you must also implement [tbl_format_header\(\)](#), [tbl_format_body\(\)](#), and [tbl_format_footer\(\)](#) for your class.

Implementing a method allows to override printing and formatting of the entire object without overriding the [print\(\)](#) and [format\(\)](#) methods directly. This allows to keep the logic of the width and n arguments.

The default method for the "tbl" class collects information for standard printing for tibbles. See [new_tbl_format_setup\(\)](#) for details on the returned object.

Value

An object that can be passed as setup argument to [tbl_format_header\(\)](#), [tbl_format_body\(\)](#), and [tbl_format_footer\(\)](#).

Examples

```
tbl_format_setup(palmerpenguins::penguins)
```

tbl_sum	<i>Provide a succinct summary of an object</i>
---------	--

Description

tbl_sum() gives a brief textual description of a table-like object, which should include the dimensions and the data source in the first element, and additional information in the other elements (such as grouping for **dplyr**). The default implementation forwards to [obj_sum\(\)](#).

Usage

```
tbl_sum(x)
```

Arguments

x Object to summarise.

Details

This generic will be moved to **pillar**, and reexported from there as soon as it becomes available.

Value

A named character vector, describing the dimensions in the first element and the data source in the name of the first element.

See Also

[type_sum\(\)](#)

Index

- * **datasets**
 - pillar_options, 20
- * **vector classes**
 - char, 4
 - num, 16

- abbreviate(), 4, 15, 23
- align, 3

- char, 4, 18
- char(), 23
- character, 15
- crayon, 11, 15
- ctl_new_compound_pillar
 - (ctl_new_pillar), 5
- ctl_new_compound_pillar(), 12
- ctl_new_pillar, 5
- ctl_new_pillar(), 12

- dim_desc, 7

- format(), 11, 15, 16, 20, 22, 23, 28
- format.pillar_shaft (pillar_shaft), 22
- format.tbl(), 27, 28
- format_glimpse, 8
- format_glimpse(), 10
- format_type_sum, 9

- get_extent, 10
- get_max_extent (get_extent), 10
- get_max_extent(), 3
- getOption(), 20
- glimpse, 10
- glimpse(), 8

- new_ornament, 11
- new_pillar, 12
- new_pillar_component, 13
- new_pillar_shaft, 14
- new_pillar_shaft(), 14

- new_pillar_shaft_simple
 - (new_pillar_shaft), 14
- new_pillar_title, 15
- new_pillar_title(), 19
- new_pillar_type, 16
- new_pillar_type(), 20
- new_tbl_format_setup(), 28
- num, 4, 16
- num(), 23

- obj_sum(), 29
- option, 10, 24
- options, 28
- options(), 20

- pillar, 19
- pillar(), 3, 6, 12
- pillar-package, 2
- pillar_component
 - (new_pillar_component), 13
- pillar_component(), 12
- pillar_options, 3, 20, 24
- pillar_shaft, 22
- pillar_shaft(), 11, 19, 20, 25
- print(), 22, 28
- print.pillar_shaft (pillar_shaft), 22
- print.tbl(), 3, 28

- sd(), 16
- set_char_opts (char), 4
- set_char_opts(), 23
- set_num_opts (num), 16
- set_num_opts(), 23
- str(), 10, 11
- style_bold (style_num), 24
- style_na (style_num), 24
- style_na(), 15
- style_neg (style_num), 24
- style_num, 24
- style_subtle (style_num), 24

`style_subtle_num(style_num)`, 24

`tbl_format_body`, 25

`tbl_format_body()`, 27, 28

`tbl_format_footer`, 26

`tbl_format_footer()`, 27, 28

`tbl_format_header`, 26

`tbl_format_header()`, 27, 28

`tbl_format_setup`, 27

`tbl_format_setup()`, 25–27

`tbl_sum`, 29

`tbl_sum()`, 26

`type_sum()`, 9, 16, 20, 29

`var()`, 16

`vctrs::vec_ptype_abbr()`, 25