

Package ‘stringr’

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Title Simple, Consistent Wrappers for Common String Operations

Version 1.3.0

Description A consistent, simple and easy to use set of wrappers around the fantastic 'stringi' package. All function and argument names (and positions) are consistent, all functions deal with ``NA``s and zero length vectors in the same way, and the output from one function is easy to feed into the input of another.

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URL <http://stringr.tidyverse.org>, <https://github.com/tidyverse/stringr>

BugReports <https://github.com/tidyverse/stringr/issues>

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case	<i>Convert case of a string.</i>
------	----------------------------------

Description

Convert case of a string.

Usage

```
str_to_upper(string, locale = "en")
```

```
str_to_lower(string, locale = "en")
```

```
str_to_title(string, locale = "en")
```

Arguments

string String to modify

locale Locale to use for translations. Defaults to "en" (English) to ensure consistent default ordering across platforms.

Examples

```
dog <- "The quick brown dog"
str_to_upper(dog)
str_to_lower(dog)
str_to_title(dog)

# Locale matters!
str_to_upper("i") # English
str_to_upper("i", "tr") # Turkish
```

invert_match	<i>Switch location of matches to location of non-matches.</i>
--------------	---

Description

Invert a matrix of match locations to match the opposite of what was previously matched.

Usage

```
invert_match(loc)
```

Arguments

loc matrix of match locations, as from [str_locate_all\(\)](#)

Value

numeric match giving locations of non-matches

Examples

```
numbers <- "1 and 2 and 4 and 456"
num_loc <- str_locate_all(numbers, "[0-9]+")[[1]]
str_sub(numbers, num_loc[, "start"], num_loc[, "end"])

text_loc <- invert_match(num_loc)
str_sub(numbers, text_loc[, "start"], text_loc[, "end"])
```

 modifiers

Control matching behaviour with modifier functions.

Description

fixed Compare literal bytes in the string. This is very fast, but not usually what you want for non-ASCII character sets.

coll Compare strings respecting standard collation rules.

regex The default. Uses ICU regular expressions.

boundary Match boundaries between things.

Usage

```
fixed(pattern, ignore_case = FALSE)
```

```
coll(pattern, ignore_case = FALSE, locale = "en", ...)
```

```
regex(pattern, ignore_case = FALSE, multiline = FALSE, comments = FALSE,
       dotall = FALSE, ...)
```

```
boundary(type = c("character", "line_break", "sentence", "word"),
         skip_word_none = NA, ...)
```

Arguments

pattern	Pattern to modify behaviour.
ignore_case	Should case differences be ignored in the match?
locale	Locale to use for comparisons. See stringi::stri_locale_list() for all possible options. Defaults to "en" (English) to ensure that the default collation is consistent across platforms.
...	Other less frequently used arguments passed on to stringi::stri_opts_collator() , stringi::stri_opts_regex() , or stringi::stri_opts_brkiter()
multiline	If TRUE, \$ and ^ match the beginning and end of each line. If FALSE, the default, only match the start and end of the input.
comments	If TRUE, white space and comments beginning with # are ignored. Escape literal spaces with \.
dotall	If TRUE, . will also match line terminators.
type	Boundary type to detect.
skip_word_none	Ignore "words" that don't contain any characters or numbers - i.e. punctuation. Default NA will skip such "words" only when splitting on word boundaries.

Examples

```

pattern <- "a.b"
strings <- c("abb", "a.b")
str_detect(strings, pattern)
str_detect(strings, fixed(pattern))
str_detect(strings, coll(pattern))

# coll() is useful for locale-aware case-insensitive matching
i <- c("I", "\u0130", "i")
i
str_detect(i, fixed("i", TRUE))
str_detect(i, coll("i", TRUE))
str_detect(i, coll("i", TRUE, locale = "tr"))

# Word boundaries
words <- c("These are some words.")
str_count(words, boundary("word"))
str_split(words, " ")[[1]]
str_split(words, boundary("word"))[[1]]

# Regular expression variations
str_extract_all("The Cat in the Hat", "[a-z]+")
str_extract_all("The Cat in the Hat", regex("[a-z]+", TRUE))

str_extract_all("a\nb\nc", "^.")
str_extract_all("a\nb\nc", regex("^.", multiline = TRUE))

str_extract_all("a\nb\nc", "a.")
str_extract_all("a\nb\nc", regex("a.", dotall = TRUE))

```

stringr-data

Sample character vectors for practicing string manipulations.

Description

fruit and word come from the rcorpora package written by Gabor Csardi; the data was collected by Darius Kazemi and made available at <https://github.com/dariusk/corpora>. sentences is a collection of "Harvard sentences" used for standardised testing of voice.

Usage

sentences

fruit

words

Format

A character vector.

Examples

```
length(sentences)
sentences[1:5]
```

```
length(fruit)
fruit[1:5]
```

```
length(words)
words[1:5]
```

str_c

Join multiple strings into a single string.

Description

To understand how `str_c` works, you need to imagine that you are building up a matrix of strings. Each input argument forms a column, and is expanded to the length of the longest argument, using the usual recycling rules. The `sep` string is inserted between each column. If `collapse` is `NULL` each row is collapsed into a single string. If non-`NULL` that string is inserted at the end of each row, and the entire matrix collapsed to a single string.

Usage

```
str_c(..., sep = "", collapse = NULL)
```

Arguments

...	One or more character vectors. Zero length arguments are removed. Short arguments are recycled to the length of the longest. Like most other R functions, missing values are "infectious": whenever a missing value is combined with another string the result will always be missing. Use str_replace_na() to convert NA to "NA"
sep	String to insert between input vectors.
collapse	Optional string used to combine input vectors into single string.

Value

If `collapse = NULL` (the default) a character vector with length equal to the longest input string. If `collapse` is non-`NULL`, a character vector of length 1.

See Also

[paste\(\)](#) for equivalent base R functionality, and [stringi::stri_join\(\)](#) which this function wraps

Examples

```

str_c("Letter: ", letters)
str_c("Letter", letters, sep = ": ")
str_c(letters, " is for", "...")
str_c(letters[-26], " comes before ", letters[-1])

str_c(letters, collapse = "")
str_c(letters, collapse = ", ")

# Missing inputs give missing outputs
str_c(c("a", NA, "b"), "-d")
# Use str_replace_NA to display literal NAs:
str_c(str_replace_na(c("a", NA, "b")), "-d")

```

str_conv

Specify the encoding of a string.

Description

This is a convenient way to override the current encoding of a string.

Usage

```
str_conv(string, encoding)
```

Arguments

`string` String to re-encode.

`encoding` Name of encoding. See [stringi::stri_enc_list\(\)](#) for a complete list.

Examples

```

# Example from encoding?stringi::stringi
x <- rawToChar(as.raw(177))
x
str_conv(x, "ISO-8859-2") # Polish "a with ogonek"
str_conv(x, "ISO-8859-1") # Plus-minus

```

str_count

Count the number of matches in a string.

Description

Vectorised over string and pattern.

Usage

```
str_count(string, pattern = "")
```

Arguments

string Input vector. Either a character vector, or something coercible to one.

pattern Pattern to look for.

The default interpretation is a regular expression, as described in [stringi::stringi-search-regex](#). Control options with [regex\(\)](#).

Match a fixed string (i.e. by comparing only bytes), using [fixed\(\)](#). This is fast, but approximate. Generally, for matching human text, you'll want [coll\(\)](#) which respects character matching rules for the specified locale.

Match character, word, line and sentence boundaries with [boundary\(\)](#). An empty pattern, "", is equivalent to [boundary\("character"\)](#).

Value

An integer vector.

See Also

[stringi::stri_count\(\)](#) which this function wraps.

[str_locate\(\)/str_locate_all\(\)](#) to locate position of matches

Examples

```
fruit <- c("apple", "banana", "pear", "pineapple")
str_count(fruit, "a")
str_count(fruit, "p")
str_count(fruit, "e")
str_count(fruit, c("a", "b", "p", "p"))

str_count(c("a.", "...", ".a.a"), ".")
str_count(c("a.", "...", ".a.a"), fixed("."))
```

`str_detect`*Detect the presence or absence of a pattern in a string.*

Description

Vectorised over string and pattern.

Usage

```
str_detect(string, pattern)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	Pattern to look for. The default interpretation is a regular expression, as described in stringi::stringi-search-regex . Control options with regex() . Match a fixed string (i.e. by comparing only bytes), using fixed() . This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale. Match character, word, line and sentence boundaries with boundary() . An empty pattern, "", is equivalent to <code>boundary("character")</code> .

Value

A logical vector.

See Also

[stringi::stri_detect\(\)](#) which this function wraps, [str_subset\(\)](#) for a convenient wrapper around `x[str_detect(x, pattern)]`

Examples

```
fruit <- c("apple", "banana", "pear", "pinapple")
str_detect(fruit, "a")
str_detect(fruit, "^a")
str_detect(fruit, "a$")
str_detect(fruit, "b")
str_detect(fruit, "[aeiou]")

# Also vectorised over pattern
str_detect("aecfg", letters)
```

str_dup	<i>Duplicate and concatenate strings within a character vector.</i>
---------	---

Description

Vectorised over string and times.

Usage

```
str_dup(string, times)
```

Arguments

string	Input character vector.
times	Number of times to duplicate each string.

Value

A character vector.

Examples

```
fruit <- c("apple", "pear", "banana")
str_dup(fruit, 2)
str_dup(fruit, 1:3)
str_c("ba", str_dup("na", 0:5))
```

str_extract	<i>Extract matching patterns from a string.</i>
-------------	---

Description

Vectorised over string and pattern.

Usage

```
str_extract(string, pattern)

str_extract_all(string, pattern, simplify = FALSE)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	<p>Pattern to look for.</p> <p>The default interpretation is a regular expression, as described in stringi::stringi-search-regex. Control options with regex().</p> <p>Match a fixed string (i.e. by comparing only bytes), using fixed(). This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale.</p> <p>Match character, word, line and sentence boundaries with boundary(). An empty pattern, "", is equivalent to boundary("character").</p>
simplify	If FALSE, the default, returns a list of character vectors. If TRUE returns a character matrix.

Value

A character vector.

See Also

[str_match\(\)](#) to extract matched groups; [stringi::stri_extract\(\)](#) for the underlying implementation.

Examples

```
shopping_list <- c("apples x4", "bag of flour", "bag of sugar", "milk x2")
str_extract(shopping_list, "\\d")
str_extract(shopping_list, "[a-z]+")
str_extract(shopping_list, "[a-z]{1,4}")
str_extract(shopping_list, "\\b[a-z]{1,4}\\b")

# Extract all matches
str_extract_all(shopping_list, "[a-z]+")
str_extract_all(shopping_list, "\\b[a-z]+\\b")
str_extract_all(shopping_list, "\\d")

# Simplify results into character matrix
str_extract_all(shopping_list, "\\b[a-z]+\\b", simplify = TRUE)
str_extract_all(shopping_list, "\\d", simplify = TRUE)

# Extract all words
str_extract_all("This is, suprisingly, a sentence.", boundary("word"))
```

str_flatten	<i>Flatten a string</i>
-------------	-------------------------

Description

Flatten a string

Usage

```
str_flatten(string, collapse = "")
```

Arguments

string	Character to flatten
collapse	String to insert between each piece

Value

A character vector of length 1

Examples

```
str_flatten(letters)
str_flatten(letters, "-")
```

str_glue	<i>Format and interpolate a string with glue</i>
----------	--

Description

These functions are wrappers around `glue::glue()` and `glue::glue_data()`, which provide a powerful and elegant syntax for interpolating strings. These wrappers provide a small set of the full options. Use the functions directly from `glue` for more control.

Usage

```
str_glue(..., .sep = "", .envir = parent.frame())

str_glue_data(.x, ..., .sep = "", .envir = parent.frame(), .na = "NA")
```

Arguments

...	[expressions] Expressions string(s) to format, multiple inputs are concatenated together before formatting.
.sep	[character(1): ""] Separator used to separate elements.
.envir	[environment: parent.frame()] Environment to evaluate each expression in. Expressions are evaluated from left to right. If .x is an environment, the expressions are evaluated in that environment and .envir is ignored.
.x	[listish] An environment, list or data frame used to lookup values.
.na	[character(1): 'NA'] Value to replace NA values with. If NULL missing values are propagated, that is an NA result will cause NA output. Otherwise the value is replaced by the value of .na.

Examples

```

name <- "Fred"
age <- 50
anniversary <- as.Date("1991-10-12")
str_glue(
  "My name is {name}, ",
  "my age next year is {age + 1}, ",
  "and my anniversary is {format(anniversary, '%A, %B %d, %Y')}."
)

# single braces can be inserted by doubling them
str_glue("My name is {name}, not {{name}}.")

# You can also used named arguments
str_glue(
  "My name is {name}, ",
  "and my age next year is {age + 1}.",
  name = "Joe",
  age = 40
)

# `str_glue_data()` is useful in data pipelines
mtcars %>% str_glue_data("{rownames(.)} has {hp} hp")

```

Description

Technically this returns the number of "code points", in a string. One code point usually corresponds to one character, but not always. For example, an u with a umlaut might be represented as a single character or as the combination a u and an umlaut.

Usage

```
str_length(string)
```

Arguments

string Input vector. Either a character vector, or something coercible to one.

Value

A numeric vector giving number of characters (code points) in each element of the character vector. Missing string have missing length.

See Also

[stringi::stri_length\(\)](#) which this function wraps.

Examples

```
str_length(letters)
str_length(NA)
str_length(factor("abc"))
str_length(c("i", "like", "programming", NA))

# Two ways of representing a u with an umlaut
u1 <- "\u00fc"
u2 <- stringi::stri_trans_nfd(u1)
# The print the same:
u1
u2
# But have a different length
str_length(u1)
str_length(u2)
# Even though they have the same number of characters
str_count(u1)
str_count(u2)
```

str_locate

Locate the position of patterns in a string.

Description

Vectorised over string and pattern. If the match is of length 0, (e.g. from a special match like \$) end will be one character less than start.

Usage

```
str_locate(string, pattern)
str_locate_all(string, pattern)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	Pattern to look for. The default interpretation is a regular expression, as described in stringi::stringi-search-regex . Control options with regex() . Match a fixed string (i.e. by comparing only bytes), using fixed() . This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale. Match character, word, line and sentence boundaries with boundary() . An empty pattern, "", is equivalent to boundary("character") .

Value

For `str_locate`, an integer matrix. First column gives start position of match, and second column gives end position. For `str_locate_all` a list of integer matrices.

See Also

[str_extract\(\)](#) for a convenient way of extracting matches, [stringi::stri_locate\(\)](#) for the underlying implementation.

Examples

```
fruit <- c("apple", "banana", "pear", "pineapple")
str_locate(fruit, "$")
str_locate(fruit, "a")
str_locate(fruit, "e")
str_locate(fruit, c("a", "b", "p", "p"))

str_locate_all(fruit, "a")
str_locate_all(fruit, "e")
str_locate_all(fruit, c("a", "b", "p", "p"))

# Find location of every character
str_locate_all(fruit, "")
```

str_match	<i>Extract matched groups from a string.</i>
-----------	--

Description

Vectorised over string and pattern.

Usage

```
str_match(string, pattern)
```

```
str_match_all(string, pattern)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	Pattern to look for, as defined by an ICU regular expression. See stringi::stringi-search-regex for more details.

Value

For `str_match`, a character matrix. First column is the complete match, followed by one column for each capture group. For `str_match_all`, a list of character matrices.

See Also

[str_extract\(\)](#) to extract the complete match, [stringi::stri_match\(\)](#) for the underlying implementation.

Examples

```
strings <- c(" 219 733 8965", "329-293-8753 ", "banana", "595 794 7569",
  "387 287 6718", "apple", "233.398.9187 ", "482 952 3315",
  "239 923 8115 and 842 566 4692", "Work: 579-499-7527", "$1000",
  "Home: 543.355.3679")
phone <- "([2-9][0-9]{2})[- .]([0-9]{3})[- .]([0-9]{4})"

str_extract(strings, phone)
str_match(strings, phone)

# Extract/match all
str_extract_all(strings, phone)
str_match_all(strings, phone)

x <- c("<a> <b>", "<a> <>", "<a>", "", NA)
str_match(x, "<(.*?)> <(.*?)>")
str_match_all(x, "<(.*?)>")

str_extract(x, "<.??>")
str_extract_all(x, "<.??>")
```

str_order *Order or sort a character vector.*

Description

Order or sort a character vector.

Usage

```
str_order(x, decreasing = FALSE, na_last = TRUE, locale = "en",
          numeric = FALSE, ...)
```

```
str_sort(x, decreasing = FALSE, na_last = TRUE, locale = "en",
         numeric = FALSE, ...)
```

Arguments

x	A character vector to sort.
decreasing	A boolean. If FALSE, the default, sorts from lowest to highest; if TRUE sorts from highest to lowest.
na_last	Where should NA go? TRUE at the end, FALSE at the beginning, NA dropped.
locale	In which locale should the sorting occur? Defaults to the English. This ensures that code behaves the same way across platforms.
numeric	If TRUE, will sort digits numerically, instead of as strings.
...	Other options used to control sorting order. Passed on to <code>stringi::stri_opts_collator()</code> .

See Also

[stringi::stri_order\(\)](#) for the underlying implementation.

Examples

```
str_order(letters)
str_sort(letters)

str_order(letters, locale = "haw")
str_sort(letters, locale = "haw")

x <- c("100a10", "100a5", "2b", "2a")
str_sort(x)
str_sort(x, numeric = TRUE)
```

str_pad	<i>Pad a string.</i>
---------	----------------------

Description

Vectorised over `string`, `width` and `pad`.

Usage

```
str_pad(string, width, side = c("left", "right", "both"), pad = " ")
```

Arguments

<code>string</code>	A character vector.
<code>width</code>	Minimum width of padded strings.
<code>side</code>	Side on which padding character is added (left, right or both).
<code>pad</code>	Single padding character (default is a space).

Value

A character vector.

See Also

[str_trim\(\)](#) to remove whitespace; [str_trunc\(\)](#) to decrease the maximum width of a string.

Examples

```
rbind(
  str_pad("hadley", 30, "left"),
  str_pad("hadley", 30, "right"),
  str_pad("hadley", 30, "both")
)

# All arguments are vectorised except side
str_pad(c("a", "abc", "abcdef"), 10)
str_pad("a", c(5, 10, 20))
str_pad("a", 10, pad = c("-", "_", " "))

# Longer strings are returned unchanged
str_pad("hadley", 3)
```

str_remove	<i>Remove matched patterns in a string.</i>
------------	---

Description

Alias for `str_replace(string, pattern, "")`.

Usage

```
str_remove(string, pattern)
```

```
str_remove_all(string, pattern)
```

Arguments

`string` Input vector. Either a character vector, or something coercible to one.

`pattern` Pattern to look for.

The default interpretation is a regular expression, as described in [stringi::stringi-search-regex](#). Control options with [regex\(\)](#).

Match a fixed string (i.e. by comparing only bytes), using [fixed\(\)](#). This is fast, but approximate. Generally, for matching human text, you'll want [coll\(\)](#) which respects character matching rules for the specified locale.

Match character, word, line and sentence boundaries with [boundary\(\)](#). An empty pattern, "", is equivalent to `boundary("character")`.

Value

A character vector.

See Also

[str_replace\(\)](#) for the underlying implementation.

Examples

```
fruits <- c("one apple", "two pears", "three bananas")
str_remove(fruits, "[aeiou]")
str_remove_all(fruits, "[aeiou]")
```

str_replace	<i>Replace matched patterns in a string.</i>
-------------	--

Description

Vectorised over `string`, `pattern` and `replacement`.

Usage

```
str_replace(string, pattern, replacement)
```

```
str_replace_all(string, pattern, replacement)
```

Arguments

<code>string</code>	Input vector. Either a character vector, or something coercible to one.
<code>pattern</code>	<p>Pattern to look for.</p> <p>The default interpretation is a regular expression, as described in stringi::stringi-search-regex. Control options with regex().</p> <p>Match a fixed string (i.e. by comparing only bytes), using fixed(). This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale.</p> <p>Match character, word, line and sentence boundaries with boundary(). An empty pattern, "", is equivalent to <code>boundary("character")</code>.</p>
<code>replacement</code>	<p>A character vector of replacements. Should be either length one, or the same length as <code>string</code> or <code>pattern</code>. References of the form <code>\1</code>, <code>\2</code>, etc will be replaced with the contents of the respective matched group (created by <code>()</code>).</p> <p>To perform multiple replacements in each element of <code>string</code>, pass a named vector (<code>c(pattern1 = replacement1)</code>) to <code>str_replace_all</code>. Alternatively, pass a function to <code>replacement</code>: it will be called once for each match and its return value will be used to replace the match.</p> <p>To replace the complete string with NA, use <code>replacement = NA_character_</code>.</p>

Value

A character vector.

See Also

[str_replace_na\(\)](#) to turn missing values into "NA"; [stri_replace\(\)](#) for the underlying implementation.

Examples

```

fruits <- c("one apple", "two pears", "three bananas")
str_replace(fruits, "[aeiou]", "-")
str_replace_all(fruits, "[aeiou]", "-")
str_replace_all(fruits, "[aeiou]", toupper)
str_replace_all(fruits, "b", NA_character_)

str_replace(fruits, "([aeiou])", "")
str_replace(fruits, "([aeiou])", "\\1\\1")
str_replace(fruits, "[aeiou]", c("1", "2", "3"))
str_replace(fruits, c("a", "e", "i"), "-")

# If you want to apply multiple patterns and replacements to the same
# string, pass a named vector to pattern.
fruits %>%
  str_c(collapse = "---") %>%
  str_replace_all(c("one" = "1", "two" = "2", "three" = "3"))

# Use a function for more sophisticated replacement. This example
# replaces colour names with their hex values.
colours <- str_c("\\b", colors(), "\\b", collapse="|")
col2hex <- function(col) {
  rgb <- col2rgb(col)
  rgb(rgb["red", ], rgb["green", ], rgb["blue", ], max = 255)
}

x <- c(
  "Roses are red, violets are blue",
  "My favourite colour is green"
)
str_replace_all(x, colours, col2hex)

```

str_replace_na	<i>Turn NA into "NA"</i>
----------------	--------------------------

Description

Turn NA into "NA"

Usage

```
str_replace_na(string, replacement = "NA")
```

Arguments

string Input vector. Either a character vector, or something coercible to one.

replacement A single string.

Examples

```
str_replace_na(c(NA, "abc", "def"))
```

str_split	<i>Split up a string into pieces.</i>
-----------	---------------------------------------

Description

Vectorised over string and pattern.

Usage

```
str_split(string, pattern, n = Inf, simplify = FALSE)
```

```
str_split_fixed(string, pattern, n)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	<p>Pattern to look for.</p> <p>The default interpretation is a regular expression, as described in stringi::stringi-search-regex. Control options with regex().</p> <p>Match a fixed string (i.e. by comparing only bytes), using fixed(). This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale.</p> <p>Match character, word, line and sentence boundaries with boundary(). An empty pattern, "", is equivalent to boundary("character").</p>
n	<p>number of pieces to return. Default (Inf) uses all possible split positions.</p> <p>For str_split_fixed, if n is greater than the number of pieces, the result will be padded with empty strings.</p>
simplify	If FALSE, the default, returns a list of character vectors. If TRUE returns a character matrix.

Value

For [str_split_fixed](#), a character matrix with n columns. For [str_split](#), a list of character vectors.

See Also

[stri_split\(\)](#) for the underlying implementation.

Examples

```

fruits <- c(
  "apples and oranges and pears and bananas",
  "pineapples and mangos and guavas"
)

str_split(fruits, " and ")
str_split(fruits, " and ", simplify = TRUE)

# Specify n to restrict the number of possible matches
str_split(fruits, " and ", n = 3)
str_split(fruits, " and ", n = 2)
# If n greater than number of pieces, no padding occurs
str_split(fruits, " and ", n = 5)

# Use fixed to return a character matrix
str_split_fixed(fruits, " and ", 3)
str_split_fixed(fruits, " and ", 4)

```

str_sub

*Extract and replace substrings from a character vector.***Description**

str_sub will recycle all arguments to be the same length as the longest argument. If any arguments are of length 0, the output will be a zero length character vector.

Usage

```

str_sub(string, start = 1L, end = -1L)

str_sub(string, start = 1L, end = -1L, omit_na = FALSE) <- value

```

Arguments

string	input character vector.
start, end	Two integer vectors. start gives the position of the first character (defaults to first), end gives the position of the last (defaults to last character). Alternatively, pass a two-column matrix to start. Negative values count backwards from the last character.
omit_na	Single logical value. If TRUE, missing values in any of the arguments provided will result in an unchanged input.
value	replacement string

Details

Substrings are inclusive - they include the characters at both start and end positions. str_sub(string, 1, -1) will return the complete substring, from the first character to the last.

Value

A character vector of substring from start to end (inclusive). Will be length of longest input argument.

See Also

The underlying implementation in `stringi::stri_sub()`

Examples

```
hw <- "Hadley Wickham"

str_sub(hw, 1, 6)
str_sub(hw, end = 6)
str_sub(hw, 8, 14)
str_sub(hw, 8)
str_sub(hw, c(1, 8), c(6, 14))

# Negative indices
str_sub(hw, -1)
str_sub(hw, -7)
str_sub(hw, end = -7)

# Alternatively, you can pass in a two colum matrix, as in the
# output from str_locate_all
pos <- str_locate_all(hw, "[aeio]")[[1]]
str_sub(hw, pos)
str_sub(hw, pos[, 1], pos[, 2])

# Vectorisation
str_sub(hw, seq_len(str_length(hw)))
str_sub(hw, end = seq_len(str_length(hw)))

# Replacement form
x <- "BBCDEF"
str_sub(x, 1, 1) <- "A"; x
str_sub(x, -1, -1) <- "K"; x
str_sub(x, -2, -2) <- "GHIJ"; x
str_sub(x, 2, -2) <- ""; x

# If you want to keep the original if some argument is NA,
# use omit_na = TRUE
x1 <- x2 <- x3 <- x4 <- "AAA"
str_sub(x1, 1, NA) <- "B"
str_sub(x2, 1, 2) <- NA
str_sub(x3, 1, NA, omit_na = TRUE) <- "B"
str_sub(x4, 1, 2, omit_na = TRUE) <- NA
x1; x2; x3; x4
```

str_subset	<i>Keep strings matching a pattern, or find positions.</i>
------------	--

Description

`str_subset()` is a wrapper around `x[str_detect(x, pattern)]`, and is equivalent to `grep(pattern, x, value = TRUE)`.
`str_which()` is a wrapper around `which(str_detect(x, pattern))`, and is equivalent to `grep(pattern, x)`.

Usage

```
str_subset(string, pattern)
```

```
str_which(string, pattern)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	Pattern to look for. The default interpretation is a regular expression, as described in stringi::stringi-search-regex . Control options with regex() . Match a fixed string (i.e. by comparing only bytes), using fixed() . This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale. Match character, word, line and sentence boundaries with boundary() . An empty pattern, "", is equivalent to <code>boundary("character")</code> .

Details

Vectorised over `string` and `pattern`

Value

A character vector.

See Also

[grep\(\)](#) with argument `value = TRUE`, [stringi::stri_subset\(\)](#) for the underlying implementation.

Examples

```
fruit <- c("apple", "banana", "pear", "pinapple")
str_subset(fruit, "a")
str_which(fruit, "a")

str_subset(fruit, "^a")
str_subset(fruit, "a$")
str_subset(fruit, "b")
```

```
str_subset(fruit, "[aeiou]")

# Missings never match
str_subset(c("a", NA, "b"), ".")
str_which(c("a", NA, "b"), ".")
```

str_trim	<i>Trim whitespace from a string</i>
----------	--------------------------------------

Description

str_trim() removes whitespace from start and end of string; str_squish() also reduces repeated whitespace inside a string.

Usage

```
str_trim(string, side = c("both", "left", "right"))

str_squish(string)
```

Arguments

string	A character vector.
side	Side on which to remove whitespace (left, right or both).

Value

A character vector.

See Also

[str_pad\(\)](#) to add whitespace

Examples

```
str_trim(" String with trailing and leading white space\t")
str_trim("\n\nString with trailing and leading white space\n\n")

str_squish(" String with trailing, middle, and leading white space\t")
str_squish("\n\nString with excess, trailing and leading white space\n\n")
```

str_trunc	<i>Truncate a character string.</i>
-----------	-------------------------------------

Description

Truncate a character string.

Usage

```
str_trunc(string, width, side = c("right", "left", "center"),
  ellipsis = "...")
```

Arguments

string A character vector.
width Maximum width of string.
side, ellipsis Location and content of ellipsis that indicates content has been removed.

See Also

[str_pad\(\)](#) to increase the minimum width of a string.

Examples

```
x <- "This string is moderately long"
rbind(
  str_trunc(x, 20, "right"),
  str_trunc(x, 20, "left"),
  str_trunc(x, 20, "center")
)
```

str_view	<i>View HTML rendering of regular expression match.</i>
----------	---

Description

str_view shows the first match; str_view_all shows all the matches.

Usage

```
str_view(string, pattern, match = NA)

str_view_all(string, pattern, match = NA)
```

Arguments

string	Input vector. Either a character vector, or something coercible to one.
pattern	Pattern to look for. The default interpretation is a regular expression, as described in stringi::stringi-search-regex . Control options with regex() . Match a fixed string (i.e. by comparing only bytes), using fixed() . This is fast, but approximate. Generally, for matching human text, you'll want coll() which respects character matching rules for the specified locale. Match character, word, line and sentence boundaries with boundary() . An empty pattern, "", is equivalent to boundary("character") .
match	If TRUE, shows only strings that match the pattern. If FALSE, shows only the strings that don't match the pattern. Otherwise (the default, NA) displays both matches and non-matches.

Examples

```
str_view(c("abc", "def", "fgh"), "[aeiou]")
str_view(c("abc", "def", "fgh"), "^")
str_view(c("abc", "def", "fgh"), "..")

# Show all matches with str_view_all
str_view_all(c("abc", "def", "fgh"), "d|e")

# Use match to control what is shown
str_view(c("abc", "def", "fgh"), "d|e")
str_view(c("abc", "def", "fgh"), "d|e", match = TRUE)
str_view(c("abc", "def", "fgh"), "d|e", match = FALSE)
```

str_wrap

Wrap strings into nicely formatted paragraphs.

Description

This is a wrapper around [stringi::stri_wrap\(\)](#) which implements the Knuth-Plass paragraph wrapping algorithm.

Usage

```
str_wrap(string, width = 80, indent = 0, exdent = 0)
```

Arguments

string	character vector of strings to reformat.
width	positive integer giving target line width in characters. A width less than or equal to 1 will put each word on its own line.
indent	non-negative integer giving indentation of first line in each paragraph
exdent	non-negative integer giving indentation of following lines in each paragraph

Value

A character vector of re-wrapped strings.

Examples

```
thanks_path <- file.path(R.home("doc"), "THANKS")
thanks <- str_c(readLines(thanks_path), collapse = "\n")
thanks <- word(thanks, 1, 3, fixed("\n\n"))
cat(str_wrap(thanks), "\n")
cat(str_wrap(thanks, width = 40), "\n")
cat(str_wrap(thanks, width = 60, indent = 2), "\n")
cat(str_wrap(thanks, width = 60, exdent = 2), "\n")
cat(str_wrap(thanks, width = 0, exdent = 2), "\n")
```

word

Extract words from a sentence.

Description

Extract words from a sentence.

Usage

```
word(string, start = 1L, end = start, sep = fixed(" "))
```

Arguments

string	input character vector.
start	integer vector giving position of first word to extract. Defaults to first word. If negative, counts backwards from last character.
end	integer vector giving position of last word to extract. Defaults to first word. If negative, counts backwards from last character.
sep	separator between words. Defaults to single space.

Value

character vector of words from start to end (inclusive). Will be length of longest input argument.

Examples

```
sentences <- c("Jane saw a cat", "Jane sat down")
word(sentences, 1)
word(sentences, 2)
word(sentences, -1)
word(sentences, 2, -1)

# Also vectorised over start and end
word(sentences[1], 1:3, -1)
```

```
word(sentences[1], 1, 1:4)

# Can define words by other separators
str <- 'abc.def..123.4568.999'
word(str, 1, sep = fixed('..'))
word(str, 2, sep = fixed('..'))
```

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