

# Package ‘strex’

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**Title** Extra String Manipulation Functions

**Version** 1.6.1

**Description** There are some things that I wish were easier with the 'stringr' or 'stringi' packages. The foremost of these is the extraction of numbers from strings. 'stringr' and 'stringi' make you figure out the regular expression for yourself; 'strex' takes care of this for you. There are many other handy functionalities in 'strex'. Contributions to this package are encouraged: it is intended as a miscellany of string manipulation functions that cannot be found in 'stringi' or 'stringr'.

**License** GPL-3

**URL** <https://rorynolan.github.io/strex/>,  
<https://github.com/rorynolan/strex>

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---

before-and-after	<i>Extract text before or after nth occurrence of pattern.</i>
------------------	--

---

**Description**

Extract the part of a string which is before or after the nth occurrence of a specified pattern, vectorized over the string.

**Usage**

```
str_after_nth(string, pattern, n)
```

```
str_after_first(string, pattern)
```

```
str_after_last(string, pattern)
```

```
str_before_nth(string, pattern, n)
```

```
str_before_first(string, pattern)
```

```
str_before_last(string, pattern)
```

### Arguments

string	A character vector.
pattern	The pattern to look for. The default interpretation is a regular expression, as described in <a href="#">stringi::about_search_regex</a> . To match a without regular expression (i.e. as a human would), use <code>coll()</code> . For details see <a href="#">stringr::regex()</a> .
n	A vector of integerish values. Must be either length 1 or have length equal to the length of <code>string</code> . Negative indices count from the back: while <code>n = 1</code> and <code>n = 2</code> correspond to first and second, <code>n = -1</code> and <code>n = -2</code> correspond to last and second-last. <code>n = 0</code> will return NA.

### Details

- `str_after_first(...)` is just `str_after_nth(..., n = 1)`.
- `str_after_last(...)` is just `str_after_nth(..., n = -1)`.
- `str_before_first(...)` is just `str_before_nth(..., n = 1)`.
- `str_before_last(...)` is just `str_before_nth(..., n = -1)`.

### Value

A character vector.

### See Also

Other bisectors: [str\\_before\\_last\\_dot\(\)](#)

### Examples

```
string <- "abxxcdxxdxxfgxxh"
str_after_nth(string, "xx", 3)
str_before_nth(string, "e", 1:2)
str_before_nth(string, "xx", -3)
str_before_nth(string, ".", -3)
str_before_nth(rep(string, 2), "..x", -3)
str_before_first(string, "d")
str_before_last(string, "x")
string <- c("abc", "xyz.zyx")
str_after_first(string, ".") # using regex
str_after_first(string, coll(".")) # using human matching
str_after_last(c("xy", "xz"), "x")
```

---

`currency`*Extract currency amounts from a string.*

---

## Description

The currency of a number is defined as the character coming before the number in the string. If nothing comes before (i.e. if the number is the first thing in the string), the currency is the empty string, similarly the currency can be a space, comma or any manner of thing.

## Usage

```
str_extract_currencies(string)
```

```
str_nth_currency(string, n)
```

```
str_first_currency(string)
```

```
str_last_currency(string)
```

## Arguments

`string` A character vector.

`n` A vector of integerish values. Must be either length 1 or have length equal to the length of `string`. Negative indices count from the back: while `n = 1` and `n = 2` correspond to first and second, `n = -1` and `n = -2` correspond to last and second-last. `n = 0` will return NA.

## Details

These functions are vectorized over `string` and `n`.

`str_extract_currencies()` extracts all currency amounts.

`str_nth_currency()` just gets the `n`th currency amount from each string. `str_first_currency(string)` and `str_last_currency(string)` are just wrappers for `str_nth_currency(string, n = 1)` and `str_nth_currency(string, n = -1)`.

"-\$2.00" and "\$-2.00" are interpreted as negative two dollars.

If you request e.g. the 5th currency amount but there are only 3 currency amounts, you get an amount and currency symbol of NA.

## Value

A data frame with 4 columns: `string_num`, `string`, `curr_sym` and `amount`. Every extracted currency amount gets its own row in the data frame detailing the string number and string that it was extracted from, the currency symbol and the amount.

**Examples**

```
string <- c("ab3 13", "$1", "35.00 $1.14", "abc5 $3.8", "stuff")
str_extract_currencies(string)
str_nth_currency(string, n = 2)
str_nth_currency(string, n = -2)
str_nth_currency(string, c(1, -2, 1, 2, -1))
str_first_currency(string)
str_last_currency(string)
```

---

strex

strex: *extra string manipulation functions*


---

**Description**

There are some things that I wish were easier with the `stringr` or `stringi` packages. The foremost of these is the extraction of numbers from strings. `stringr` makes you figure out the regex for yourself; `strex` takes care of this for you. There are many more useful functionalities in `strex`. In particular, there's a `match_arg()` function which is more flexible than the base `match.arg()`. Contributions to this package are encouraged: it is intended as a miscellany of string manipulation functions which cannot be found in `stringi` or `stringr`.

**References**

Rory Nolan and Sergi Padilla-Parra (2017). `filesstrings`: An R package for file and string manipulation. *The Journal of Open Source Software*, 2(14). doi:[10.21105/joss.00260](https://doi.org/10.21105/joss.00260).

---

str\_alphord\_nums

*Make string numbers comply with alphabetical order.*


---

**Description**

If strings are numbered, their numbers may not *comply* with alphabetical order, e.g. "abc2" comes after "abc10" in alphabetical order. We might (for whatever reason) wish to change them such that they come in the order *that we would like*. This function alters the strings such that they comply with alphabetical order, so here "abc2" would be renamed to "abc02". It works on file names with more than one number in them e.g. "abc01def3" (a string with 2 numbers). All the strings in the character vector `string` must have the same number of numbers, and the non-number bits must be the same.

**Usage**

```
str_alphord_nums(string)
```

**Arguments**

`string`            A character vector.

**Value**

A character vector.

**Examples**

```
string <- paste0("abc", 1:12)
print(string)
str_alphord_nums(string)
str_alphord_nums(c("abc9def55", "abc10def7"))
str_alphord_nums(c("01abc9def55", "5abc10def777", "99abc4def4"))
str_alphord_nums(1:10)
## Not run:
str_alphord_nums(c("abc9def55", "abc10xyz7")) # error

## End(Not run)
```

---

str\_before\_last\_dot     *Extract the part of a string before the last period.*

---

**Description**

This is usually used to get the part of a file name that doesn't include the file extension. It is vectorized over string. If there is no period in string, the input is returned.

**Usage**

```
str_before_last_dot(string)
```

**Arguments**

string            A character vector.

**Value**

A character vector.

**See Also**

Other bisectors: [before-and-after](#)

**Examples**

```
str_before_last_dot(c("spreadsheet1.csv", "doc2.doc", ".R"))
```

---

str\_can\_be\_numeric      *Check if a string could be considered as numeric.*

---

### Description

After padding is removed, could the input string be considered to be numeric, i.e. could it be coerced to numeric. This function is vectorized over its one argument.

### Usage

```
str_can_be_numeric(string)
```

### Arguments

string                  A character vector.

### Value

A logical vector.

### Examples

```
str_can_be_numeric("3")
str_can_be_numeric("5 ")
str_can_be_numeric(c("1a", "abc"))
```

---

str\_detect\_all              *Detect any or all patterns.*

---

### Description

Vectorized over string.

### Usage

```
str_detect_all(string, pattern, negate = FALSE)
```

```
str_detect_any(string, pattern, negate = FALSE)
```

### Arguments

string                  A character vector.

pattern                 A character vector. The patterns to look for. Default is stringi-style regular expression. [stringr::coll\(\)](#) and [stringr::fixed\(\)](#) are also permissible.

negate                 A flag. If TRUE, inverts the result.

**Value**

A character vector.

**Examples**

```
str_detect_all("quick brown fox", c("x", "y", "z"))
str_detect_all(c(".", "-"), ".")
str_detect_all(c(".", "-"), coll("."))
str_detect_all(c(".", "-"), coll("."), negate = TRUE)
str_detect_all(c(".", "-"), c(".", ":"))
str_detect_all(c(".", "-"), coll(c(".", ":")))
str_detect_all("xyzabc", c("a", "c", "z"))
str_detect_all(c("xyzabc", "abcxyz"), c(".b", "^x"))

str_detect_any("quick brown fox", c("x", "y", "z"))
str_detect_any(c(".", "-"), ".")
str_detect_any(c(".", "-"), coll("."))
str_detect_any(c(".", "-"), coll("."), negate = TRUE)
str_detect_any(c(".", "-"), c(".", ":"))
str_detect_any(c(".", "-"), coll(c(".", ":")))
str_detect_any(c("xyzabc", "abcxyz"), c(".b", "^x"))
```

---

str\_elem

---

*Extract a single character from a string, using its index.*


---

**Description**

If the element does not exist, this function returns the empty string. This is consistent with [stringr::str\\_sub\(\)](#). This function is vectorised over both arguments.

**Usage**

```
str_elem(string, index)
```

**Arguments**

**string**            A character vector.  
**index**             An integer. Negative indexing is allowed as in [stringr::str\\_sub\(\)](#).

**Value**

A one-character string.

**See Also**

Other single element extractors: [str\\_elems\(\)](#), [str\\_paste\\_elems\(\)](#)



## Examples

```
str_elem(c("abcd", "xyz"), 3)
str_elem("abcd", -2)
```

---

str\_elems

*Extract several single elements from a string.*

---

## Description

Efficiently extract several elements from a string. See [str\\_elem\(\)](#) for extracting single elements. This function is vectorized over the first argument.

## Usage

```
str_elems(string, indices, byrow = TRUE)
```

## Arguments

string	A character vector.
indices	A vector of integerish values. Negative indexing is allowed as in <a href="#">stringr::str_sub()</a> .
byrow	Should the elements be organised in the matrix with one row per string (byrow = TRUE, the default) or one column per string (byrow = FALSE). See examples if you don't understand.

## Value

A character matrix.

## See Also

Other single element extractors: [str\\_elem\(\)](#), [str\\_paste\\_elems\(\)](#)

## Examples

```
string <- c("abc", "def", "ghi", "vwxyz")
str_elems(string, 1:2)
str_elems(string, 1:2, byrow = FALSE)
str_elems(string, c(1, 2, 3, 4, -1))
```

---

`str_extract_non_numerics`*Extract non-numbers from a string.*

---

### Description

Extract the non-numeric bits of a string where numbers are optionally defined with decimals, scientific notation and commas (as separators, not as an alternative to the decimal point).

### Usage

```
str_extract_non_numerics(  
  string,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE  
)
```

### Arguments

<code>string</code>	A string.
<code>decimals</code>	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
<code>leading_decimals</code>	Do you want to allow a leading decimal point to be the start of a number?
<code>negs</code>	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
<code>sci</code>	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
<code>commas</code>	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).

### Details

- `str_first_non_numeric(...)` is just `str_nth_non_numeric(..., n = 1)`.
- `str_last_non_numeric(...)` is just `str_nth_non_numeric(..., n = -1)`.

### See Also

Other non-numeric extractors: [str\\_nth\\_non\\_numeric\(\)](#)

## Examples

```
strings <- c(
  "abc123def456", "abc-0.12def.345", "abc.12e4def34.5e9",
  "abc1,100def1,230.5", "abc1,100e3,215def4e1,000"
)
str_extract_non_numerics(strings)
str_extract_non_numerics(strings, decimals = TRUE, leading_decimals = FALSE)
str_extract_non_numerics(strings, decimals = TRUE)
str_extract_non_numerics(strings, commas = TRUE)
str_extract_non_numerics(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE
)
str_extract_non_numerics(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE, commas = TRUE, negs = TRUE
)
str_extract_non_numerics(c("22", "1.2.3"), decimals = TRUE)
```

---

str\_extract\_numbers    *Extract numbers from a string.*

---

## Description

Extract the numbers from a string, where decimals, scientific notation and commas (as separators, not as an alternative to the decimal point) are optionally allowed.

## Usage

```
str_extract_numbers(
  string,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)
```

## Arguments

string	A string.
decimals	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
leading_decimals	Do you want to allow a leading decimal point to be the start of a number?
negs	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).

sci	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
commas	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).
leave_as_string	Do you want to return the number as a string (TRUE) or as numeric (FALSE, the default)?

### Details

If any part of a string contains an ambiguous number (e.g. 1.2.3 would be ambiguous if decimals = TRUE (but not otherwise)), the value returned for that string will be NA and a warning will be issued.

With scientific notation, it is assumed that the exponent is not a decimal number e.g. 2e2.4 is unacceptable. Commas, however, are acceptable in the exponent, so 2e1,100 is fine and equal to 2e1100 if the option to allow commas in numbers has been turned on.

Numbers outside the double precision floating point range (i.e. with absolute value greater than 1.797693e+308) are read as Inf (or -Inf if they begin with a minus sign). This is what `base::as.numeric()` does.

### Value

For `str_extract_numbers` and `str_extract_non_numerics`, a list of numeric or character vectors, one list element for each element of `string`. For `str_nth_number` and `str_nth_non_numeric`, a numeric or character vector the same length as the vector `string`.

### See Also

Other numeric extractors: [str\\_nth\\_number\\_after\\_mth\(\)](#), [str\\_nth\\_number\\_before\\_mth\(\)](#), [str\\_nth\\_number\(\)](#)

### Examples

```
strings <- c(
  "abc123def456", "abc-0.12def.345", "abc.12e4def34.5e9",
  "abc1,100def1,230.5", "abc1,100e3,215def4e1,000"
)
str_extract_numbers(strings)
str_extract_numbers(strings, decimals = TRUE)
str_extract_numbers(strings, decimals = TRUE, leading_decimals = TRUE)
str_extract_numbers(strings, commas = TRUE)
str_extract_numbers(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE
)
str_extract_numbers(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE, commas = TRUE, negs = TRUE
)
str_extract_numbers(strings,
  decimals = TRUE, leading_decimals = FALSE,
  sci = FALSE, commas = TRUE, leave_as_string = TRUE
)
```

```
)
str_extract_numbers(c("22", "1.2.3"), decimals = TRUE)
```

---

str\_give\_ext      *Ensure a file name has the intended extension.*

---

### Description

Say you want to ensure a name is fit to be the name of a csv file. Then, if the input doesn't end with ".csv", this function will tack ".csv" onto the end of it. This is vectorized over the first argument.

### Usage

```
str_give_ext(string, ext, replace = FALSE)
```

### Arguments

string	The intended file name.
ext	The intended file extension (with or without the ".").
replace	If the file has an extension already, replace it (or append the new extension name)?

### Value

A string: the file name in your intended form.

### Examples

```
str_give_ext(c("abc", "abc.csv"), "csv")
str_give_ext("abc.csv", "pdf")
str_give_ext("abc.csv", "pdf", replace = TRUE)
```

---

str\_locate\_braces      *Locate the braces in a string.*

---

### Description

Give the positions of (, ), [, ], \{, \} within a string.

### Usage

```
str_locate_braces(string)
```

### Arguments

string	A character vector
--------	--------------------

**Value**

A data frame with 4 columns: `string_num`, `string`, `position` and `brace`. Every extracted brace amount gets its own row in the tibble detailing the string number and string that it was extracted from, the position in its string and the brace.

**See Also**

Other locators: [str\\_locate\\_nth\(\)](#)

**Examples**

```
str_locate_braces(c("a{](kkj)}"), "ab[}c{")
```

---

<code>str_locate_nth</code>	<i>Locate the indices of the nth instance of a pattern.</i>
-----------------------------	---

---

**Description**

The nth instance of an pattern will cover a series of character indices. These functions tell you which indices those are. These functions are vectorised over all arguments.

**Usage**

```
str_locate_nth(string, pattern, n)
```

```
str_locate_first(string, pattern)
```

```
str_locate_last(string, pattern)
```

**Arguments**

<code>string</code>	A character vector.
<code>pattern</code>	The pattern to look for. The default interpretation is a regular expression, as described in <a href="#">stringi::about_search_regex</a> . To match a without regular expression (i.e. as a human would), use <a href="#">coll()</a> . For details see <a href="#">stringr::regex()</a> .
<code>n</code>	A vector of integerish values. Must be either length 1 or have length equal to the length of <code>string</code> . Negative indices count from the back: while <code>n = 1</code> and <code>n = 2</code> correspond to first and second, <code>n = -1</code> and <code>n = -2</code> correspond to last and second-last. <code>n = 0</code> will return NA.

**Details**

- `str_locate_first(...)` is just `str_locate_nth(..., n = 1)`.
- `str_locate_last(...)` is just `str_locate_nth(..., n = -1)`.

**Value**

A two-column matrix. The *i*th row of this matrix gives the start and end indices of the *n*th instance of pattern in the *i*th element of string.

**See Also**

Other locators: [str\\_locate\\_braces\(\)](#)

**Examples**

```
str_locate_nth(c("abcdabcxyz", "abcabc"), "abc", 2)
str_locate_nth(
  c("This old thing.", "That beautiful thing there."),
  "\\w+", c(2, -2)
)
str_locate_nth("abc", "b", c(0, 1, 1, 2))
str_locate_first("abcxyzabc", "abc")
str_locate_last("abcxyzabc", "abc")
```

---

str\_match\_arg

*Argument Matching.*


---

**Description**

Match *arg* against a series of candidate choices. *arg* *matches* an element of choices if *arg* is a prefix of that element.

**Usage**

```
str_match_arg(
  arg,
  choices = NULL,
  index = FALSE,
  several_ok = FALSE,
  ignore_case = FALSE
)

match_arg(
  arg,
  choices = NULL,
  index = FALSE,
  several_ok = FALSE,
  ignore_case = FALSE
)
```

## Arguments

arg	A character vector (of length one unless several_ok = TRUE).
choices	A character vector of candidate values.
index	Return the index of the match rather than the match itself?
several_ok	Allow arg to have length greater than one to match several arguments at once?
ignore_case	Ignore case while matching. If this is TRUE, the returned value is the matched element of choices (with its original casing).

## Details

ERRORs are thrown when a match is not made and where the match is ambiguous. However, sometimes ambiguities are inevitable. Consider the case where `choices = c("ab", "abc")`, then there's no way to choose "ab" because "ab" is a prefix for "ab" and "abc". If this is the case, you need to provide a full match, i.e. using `arg = "ab"` will get you "ab" without an error, however `arg = "a"` will throw an ambiguity error.

When `choices` is NULL, the choices are obtained from a default setting for the formal argument `arg` of the function from which `str_match_arg` was called. This is consistent with `base::match.arg()`. See the examples for details.

When `arg` and `choices` are identical and `several_ok = FALSE`, the first element of `choices` is returned. This is consistent with `base::match.arg()`.

This function inspired by `RSAGA::match.arg.ext()`. Its behaviour is almost identical (the difference is that `RSAGA::match.arg.ext(..., ignore_case = TRUE)` always returns in all lower case; `strex::match_arg(..., ignore_case = TRUE)` ignores case while matching but returns the element of `choices` in its original case). `RSAGA` is a heavy package to depend upon so `strex::match_arg()` is handy for package developers.

This function is designed to be used inside of other functions. It's fine to use it for other purposes, but the error messages might be a bit weird.

## Examples

```
choices <- c("Apples", "Pears", "Bananas", "Oranges")
match_arg("A", choices)
match_arg("B", choices, index = TRUE)
match_arg(c("a", "b"), choices, several_ok = TRUE, ignore_case = TRUE)
match_arg(c("b", "a"), choices,
  ignore_case = TRUE, index = TRUE,
  several_ok = TRUE
)
myword <- function(w = c("abacus", "baseball", "candy")) {
  w <- match_arg(w)
  w
}
myword("b")
myword()
myword <- function(w = c("abacus", "baseball", "candy")) {
  w <- match_arg(w, several_ok = TRUE)
  w
}
```



```
}  
myword("c")  
myword()
```

---

str\_nth\_non\_numeric     *Extract the nth non-numeric substring from a string.*

---

### Description

Extract the nth non-numeric bit of a string where numbers are optionally defined with decimals, scientific notation and commas (as separators, not as an alternative to the decimal point).

- str\_first\_non\_numeric(...) is just str\_nth\_non\_numeric(..., n = 1).
- str\_last\_non\_numeric(...) is just str\_nth\_non\_numeric(..., n = -1).

### Usage

```
str_nth_non_numeric(  
  string,  
  n,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE  
)
```

```
str_first_non_numeric(  
  string,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE  
)
```

```
str_last_non_numeric(  
  string,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE  
)
```

**Arguments**

string	A string.
n	A vector of integerish values. Must be either length 1 or have length equal to the length of string. Negative indices count from the back: while n = 1 and n = 2 correspond to first and second, n = -1 and n = -2 correspond to last and second-last. n = 0 will return NA.
decimals	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
leading_decimals	Do you want to allow a leading decimal point to be the start of a number?
negs	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
sci	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
commas	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).

**See Also**

Other non-numeric extractors: [str\\_extract\\_non\\_numerics\(\)](#)

**Examples**

```
strings <- c(
  "abc123def456", "abc-0.12def.345", "abc.12e4def34.5e9",
  "abc1,100def1,230.5", "abc1,100e3,215def4e1,000"
)
str_nth_non_numeric(strings, n = 2)
str_nth_non_numeric(strings, n = -2, decimals = TRUE)
str_first_non_numeric(strings, decimals = TRUE, leading_decimals = FALSE)
str_last_non_numeric(strings, commas = TRUE)
str_nth_non_numeric(strings,
  n = 1, decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE
)
str_first_non_numeric(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE, commas = TRUE, negs = TRUE
)
str_first_non_numeric(c("22", "1.2.3"), decimals = TRUE)
```

---

str\_nth\_number

*Extract the nth number from a string.*


---

**Description**

Extract the nth number from a string, where decimals, scientific notation and commas (as separators, not as an alternative to the decimal point) are optionally allowed.

**Usage**

```

str_nth_number(
  string,
  n,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

str_first_number(
  string,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

str_last_number(
  string,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

```

**Arguments**

string	A string.
n	A vector of integerish values. Must be either length 1 or have length equal to the length of string. Negative indices count from the back: while n = 1 and n = 2 correspond to first and second, n = -1 and n = -2 correspond to last and second-last. n = 0 will return NA.
decimals	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
leading_decimals	Do you want to allow a leading decimal point to be the start of a number?
negs	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
sci	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.

commas	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).
leave_as_string	Do you want to return the number as a string (TRUE) or as numeric (FALSE, the default)?

### Details

- `str_first_number(...)` is just `str_nth_number(..., n = 1)`.
- `str_last_number(...)` is just `str_nth_number(..., n = -1)`.

For a detailed explanation of the number extraction, see [str\\_extract\\_numbers\(\)](#).

### Value

A numeric vector (or a character vector if `leave_as_string = TRUE`).

### See Also

Other numeric extractors: [str\\_extract\\_numbers\(\)](#), [str\\_nth\\_number\\_after\\_mth\(\)](#), [str\\_nth\\_number\\_before\\_mth\(\)](#)

### Examples

```
strings <- c(
  "abc123def456", "abc-0.12def.345", "abc.12e4def34.5e9",
  "abc1,100def1,230.5", "abc1,100e3,215def4e1,000"
)
str_nth_number(strings, n = 2)
str_nth_number(strings, n = -2, decimals = TRUE)
str_first_number(strings, decimals = TRUE, leading_decimals = TRUE)
str_last_number(strings, commas = TRUE)
str_nth_number(strings,
  n = 1, decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE
)
str_first_number(strings,
  decimals = TRUE, leading_decimals = TRUE,
  sci = TRUE, commas = TRUE, negs = TRUE
)
str_last_number(strings,
  decimals = TRUE, leading_decimals = FALSE,
  sci = FALSE, commas = TRUE, negs = TRUE, leave_as_string = TRUE
)
str_first_number(c("22", "1.2.3"), decimals = TRUE)
```

---

`str_nth_number_after_mth`*Find the nth number after the mth occurrence of a pattern.*

---

**Description**

Given a string, a pattern and natural numbers `n` and `m`, find the `n`th number after the `m`th occurrence of the pattern.

**Usage**

```
str_nth_number_after_mth(  
    string,  
    pattern,  
    n,  
    m,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_nth_number_after_first(  
    string,  
    pattern,  
    n,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_nth_number_after_last(  
    string,  
    pattern,  
    n,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_first_number_after_mth(  
    string,  
    pattern,  
    m,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_last_number_after_mth(  
    string,  
    pattern,  
    m,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_first_number_after_first(  
    string,  
    pattern,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_first_number_after_last(  
    string,  
    pattern,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```
str_last_number_after_first(  
    string,  
    pattern,  
    m,  
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
)
```

```

    string,
    pattern,
    decimals = FALSE,
    leading_decimals = decimals,
    negs = FALSE,
    sci = FALSE,
    commas = FALSE,
    leave_as_string = FALSE
  )

str_last_number_after_last(
  string,
  pattern,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

```

### Arguments

string	A character vector.
pattern	The pattern to look for. The default interpretation is a regular expression, as described in <a href="#">stringi::about_search_regex</a> . To match a without regular expression (i.e. as a human would), use <a href="#">coll()</a> . For details see <a href="#">stringr::regex()</a> .
n, m	Vectors of integerish values. Must be either length 1 or have length equal to the length of string. Negative indices count from the back: while 1 and 2 correspond to first and second, -1 and -2 correspond to last and second-last. 0 will return NA.
decimals	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
leading_decimals	Do you want to allow a leading decimal point to be the start of a number?
negs	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
sci	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
commas	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).
leave_as_string	Do you want to return the number as a string (TRUE) or as numeric (FALSE, the default)?

### Value

A numeric or character vector.

**See Also**

Other numeric extractors: [str\\_extract\\_numbers\(\)](#), [str\\_nth\\_number\\_before\\_mth\(\)](#), [str\\_nth\\_number\(\)](#)

**Examples**

```
string <- c(
  "abc1abc2abc3abc4abc5abc6abc7abc8abc9",
  "abc1def2ghi3abc4def5ghi6abc7def8ghi9"
)
str_nth_number_after_mth(string, "abc", 1, 3)
str_nth_number_after_mth(string, "abc", 2, 3)
str_nth_number_after_first(string, "abc", 2)
str_nth_number_after_last(string, "abc", -1)
str_first_number_after_mth(string, "abc", 2)
str_last_number_after_mth(string, "abc", 1)
str_first_number_after_first(string, "abc")
str_first_number_after_last(string, "abc")
str_last_number_after_first(string, "abc")
str_last_number_after_last(string, "abc")
```

---

str\_nth\_number\_before\_mth

*Find the nth number before the mth occurrence of a pattern.*

---

**Description**

Given a string, a pattern and natural numbers n and m, find the nth number that comes before the mth occurrence of the pattern.

**Usage**

```
str_nth_number_before_mth(
  string,
  pattern,
  n,
  m,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

str_nth_number_before_first(
  string,
  pattern,
  n,
```



```
    decimals = FALSE,  
    leading_decimals = decimals,  
    negs = FALSE,  
    sci = FALSE,  
    commas = FALSE,  
    leave_as_string = FALSE  
  )
```

```
str_nth_number_before_last(  
  string,  
  pattern,  
  n,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE,  
  leave_as_string = FALSE  
)
```

```
str_first_number_before_mth(  
  string,  
  pattern,  
  m,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE,  
  leave_as_string = FALSE  
)
```

```
str_last_number_before_mth(  
  string,  
  pattern,  
  m,  
  decimals = FALSE,  
  leading_decimals = decimals,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE,  
  leave_as_string = FALSE  
)
```

```
str_first_number_before_first(  
  string,  
  pattern,  
  decimals = FALSE,  
)
```

```

    leading_decimals = decimals,
    negs = FALSE,
    sci = FALSE,
    commas = FALSE,
    leave_as_string = FALSE
  )

str_first_number_before_last(
  string,
  pattern,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

str_last_number_before_first(
  string,
  pattern,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

str_last_number_before_last(
  string,
  pattern,
  decimals = FALSE,
  leading_decimals = decimals,
  negs = FALSE,
  sci = FALSE,
  commas = FALSE,
  leave_as_string = FALSE
)

```

### Arguments

string	A character vector.
pattern	The pattern to look for. The default interpretation is a regular expression, as described in <a href="#">stringi::about_search_regex</a> . To match a without regular expression (i.e. as a human would), use <code>coll()</code> . For details see <a href="#">stringr::regex()</a> .
n, m	Vectors of integerish values. Must be either length 1 or have length equal to

	the length of <code>string</code> . Negative indices count from the back: while 1 and 2 correspond to first and second, -1 and -2 correspond to last and second-last. 0 will return NA.
<code>decimals</code>	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
<code>leading_decimals</code>	Do you want to allow a leading decimal point to be the start of a number?
<code>negs</code>	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
<code>sci</code>	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
<code>commas</code>	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).
<code>leave_as_string</code>	Do you want to return the number as a string (TRUE) or as numeric (FALSE, the default)?

**Value**

A numeric or character vector.

**See Also**

Other numeric extractors: [str\\_extract\\_numbers\(\)](#), [str\\_nth\\_number\\_after\\_mth\(\)](#), [str\\_nth\\_number\(\)](#)

**Examples**

```
string <- c(
  "abc1abc2abc3abc4def5abc6abc7abc8abc9",
  "abc1def2ghi3abc4def5ghi6abc7def8ghi9"
)
str_nth_number_before_mth(string, "def", 1, 1)
str_nth_number_before_mth(string, "abc", 2, 3)
str_nth_number_before_first(string, "def", 2)
str_nth_number_before_last(string, "def", -1)
str_first_number_before_mth(string, "abc", 2)
str_last_number_before_mth(string, "def", 1)
str_first_number_before_first(string, "def")
str_first_number_before_last(string, "def")
str_last_number_before_first(string, "def")
str_last_number_before_last(string, "def")
```

---

str\_paste\_elems

*Extract single elements of a string and paste them together.*

---

**Description**

This is a quick way around doing a call to [str\\_elems\(\)](#) followed by a call of `apply(..., paste)`.

**Usage**

```
str_paste_elems(string, indices, sep = "")
```

**Arguments**

`string` A character vector.  
`indices` A vector of integerish values. Negative indexing is allowed as in [stringr::str\\_sub\(\)](#).  
`sep` A string. The separator for pasting string elements together.

**Details**

Elements that don't exist e.g. element 5 of "abc" are ignored.

**Value**

A character vector.

**See Also**

Other single element extractors: [str\\_elems\(\)](#), [str\\_elem\(\)](#)

**Examples**

```
string <- c("abc", "def", "ghi", "vwxyz")
str_paste_elems(string, 1:2)
str_paste_elems(string, c(1, 2, 3, 4, -1))
str_paste_elems("abc", c(1, 5, 55, 43, 3))
```

---

`str_remove_quoted`      *Remove the quoted parts of a string.*

---

**Description**

If any parts of a string are quoted (between quotation marks), remove those parts of the string, including the quotes. Run the examples and you'll know exactly how this function works.

**Usage**

```
str_remove_quoted(string)
```

**Arguments**

`string` A character vector.

**Value**

A character vector.

**See Also**

Other removers: [str\\_singleize\(\)](#), [str\\_trim\\_anything\(\)](#)

**Examples**

```
string <- "\"abc\"67a'dk'f"
cat(string)
str_remove_quoted(string)
```

---

str_singleize	<i>Remove back-to-back duplicates of a pattern in a string.</i>
---------------	---

---

**Description**

If a string contains a given pattern duplicated back-to-back a number of times, remove that duplication, leaving the pattern appearing once in that position (works if the pattern is duplicated in different parts of a string, removing all instances of duplication). This is vectorized over string and pattern.

**Usage**

```
str_singleize(string, pattern)
```

**Arguments**

string	A character vector.
pattern	The pattern to look for. The default interpretation is a regular expression, as described in <a href="#">stringi::about_search_regex</a> . To match a without regular expression (i.e. as a human would), use <a href="#">coll()</a> . For details see <a href="#">stringr::regex()</a> .

**Value**

A character vector.

**See Also**

Other removers: [str\\_remove\\_quoted\(\)](#), [str\\_trim\\_anything\(\)](#)

**Examples**

```
str_singleize("abc//def", "//")
str_singleize("abababcabab", "ab")
str_singleize(c("abab", "cdcd"), "cd")
str_singleize(c("abab", "cdcd"), c("ab", "cd"))
```

---

str\_split\_by\_numbers *Split a string by its numeric characters.*

---

### Description

Break a string wherever you go from a numeric character to a non-numeric or vice-versa. Keep the whole string, just split it up. Vectorised over string.

### Usage

```
str_split_by_numbers(  
  string,  
  decimals = FALSE,  
  leading_decimals = FALSE,  
  negs = FALSE,  
  sci = FALSE,  
  commas = FALSE  
)
```

### Arguments

string	A string.
decimals	Do you want to include the possibility of decimal numbers (TRUE) or not (FALSE, the default).
leading_decimals	Do you want to allow a leading decimal point to be the start of a number?
negs	Do you want to allow negative numbers? Note that double negatives are not handled here (see the examples).
sci	Make the search aware of scientific notation e.g. 2e3 is the same as 2000.
commas	Allow comma separators in numbers (i.e. interpret 1,100 as a single number (one thousand one hundred) rather than two numbers (one and one hundred)).

### Value

A list of character vectors.

### See Also

Other splitters: [str\\_split\\_camel\\_case\(\)](#)

### Examples

```
str_split_by_numbers(c("abc123def456.789gh", "a1b2c344"))  
str_split_by_numbers("abc123def456.789gh", decimals = TRUE)  
str_split_by_numbers(c("22", "1.2.3"), decimals = TRUE)
```

---

str\_split\_camel\_case *Split a string based on CamelCase.*

---

**Description**

Vectorized over string.

**Usage**

```
str_split_camel_case(string, lower = FALSE)
```

**Arguments**

string	A character vector.
lower	Do you want the output to be all lower case (or as is)?

**Value**

A list of character vectors, one list element for each element of string.

**References**

Adapted from Ramnath Vaidyanathan's answer at <http://stackoverflow.com/questions/8406974/splitting-camelcase-in-r>.

**See Also**

Other splitters: [str\\_split\\_by\\_numbers\(\)](#)

**Examples**

```
str_split_camel_case(c("RoryNolan", "NaomiFlagg", "DepartmentOfSillyHats"))
str_split_camel_case(c("RoryNolan", "NaomiFlagg", "DepartmentOfSillyHats",
  lower = TRUE
))
```

---

str\_to\_vec *Convert a string to a vector of characters*

---

**Description**

Go from a string to a vector whose *i*th element is the *i*th character in the string.

**Usage**

```
str_to_vec(string)
```

**Arguments**

string            A character vector.

**Value**

A character vector.

**Examples**

```
str_to_vec("abcdef")
```

---

str\_trim\_anything        *Trim something other than whitespace*

---

**Description**

The `stringi` and `stringr` packages let you trim whitespace, but what if you want to trim something else from either (or both) side(s) of a string? This function lets you select which pattern to trim and from which side(s).

**Usage**

```
str_trim_anything(string, pattern, side = "both")
```

**Arguments**

string            A character vector.

pattern           The pattern to look for.

The default interpretation is a regular expression, as described in [stringi::about\\_search\\_regex](#). To match a without regular expression (i.e. as a human would), use `coll()`. For details see [stringr::regex\(\)](#).

side              Which side do you want to trim from? "both" is the default, but you can also have just either "left" or "right" (or optionally the shortened "b", "l" and "r").

**Value**

A string.

**See Also**

Other removers: [str\\_remove\\_quoted\(\)](#), [str\\_singleize\(\)](#)



**Examples**

```
str_trim_anything("..abcd.", ".", "left")
str_trim_anything("..abcd.", coll("."), "left")
str_trim_anything("-ghi--", "-", "both")
str_trim_anything("-ghi--", "-")
str_trim_anything("-ghi--", "-", "right")
str_trim_anything("-ghi--", "--")
str_trim_anything("-ghi--", "i+")
```

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