pandas.Series.str.title

Series.str.**title**(*self*)

Convert strings in the Series/Index to titlecase.

Equivalent to `str.title()`.

Returns

Series or Index of object

See also:

Series.str.lower Converts all characters to lowercase.
Series.str.upper Converts all characters to uppercase.
Series.str.title Converts first character of each word to uppercase and remaining to lowercase.
Series.str.capitalize Converts first character to uppercase and remaining to lowercase.
Series.str.swapcase Converts uppercase to lowercase and lowercase to uppercase.
Series.str.casefold Removes all case distinctions in the string.

Examples

```
>>> s = pd.Series(['lower', 'CAPITALS', 'this is a sentence', 'SwApCaSe'])
>>> s
0                 lower
1              CAPITALS
2    this is a sentence
3              SwApCaSe
dtype: object
```

```
>>> s.str.lower()
0                 lower
1              capitals
2    this is a sentence
3              swapcase
dtype: object
```

```
>>> s.str.upper()
0                 LOWER
1              CAPITALS
2    THIS IS A SENTENCE
3              SWAPCASE
dtype: object
```

```
>>> s.str.title()
0                 Lower
1              Capitals
2    This Is A Sentence
3              Swapcase
dtype: object
```

```
>>> s.str.capitalize()
0                 Lower
1              Capitals
2    This is a sentence
3              Swapcase
dtype: object
```

```
>>> s.str.swapcase()
0                 LOWER
1              capitals
2    THIS IS A SENTENCE
3              sWaPcAsE
dtype: object
```

pandas.Series.str.translate

Series.str.**translate**(*self*, *table*)

Map all characters in the string through the given mapping table. Equivalent to standard `str.translate()`.

Parameters

table [dict] Table is a mapping of Unicode ordinals to Unicode ordinals, strings, or None. Unmapped characters are left untouched. Characters mapped to None are deleted. `str.maketrans()` is a helper function for making translation tables.

Returns

Series or Index

pandas.Series.str.upper

Series.str.**upper**(*self*)

Convert strings in the Series/Index to uppercase.

Equivalent to `str.upper()`.

Returns

Series or Index of object

See also:

Series.str.lower Converts all characters to lowercase.
Series.str.upper Converts all characters to uppercase.
Series.str.title Converts first character of each word to uppercase and remaining to lowercase.
Series.str.capitalize Converts first character to uppercase and remaining to lowercase.
Series.str.swapcase Converts uppercase to lowercase and lowercase to uppercase.
Series.str.casefold Removes all case distinctions in the string.

Examples

```
>>> s = pd.Series(['lower', 'CAPITALS', 'this is a sentence', 'SwApCaSe'])
>>> s
0                 lower
1              CAPITALS
2    this is a sentence
3              SwApCaSe
dtype: object
```

```
>>> s.str.lower()
0                 lower
1              capitals
2    this is a sentence
```

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```
3              swapcase
dtype: object
```

```
>>> s.str.upper()
0                 LOWER
1              CAPITALS
2    THIS IS A SENTENCE
3              SWAPCASE
dtype: object
```

```
>>> s.str.title()
0                 Lower
1              Capitals
2    This Is A Sentence
3              Swapcase
dtype: object
```

```
>>> s.str.capitalize()
0                 Lower
1              Capitals
2    This is a sentence
3              Swapcase
dtype: object
```

```
>>> s.str.swapcase()
0                 LOWER
1              capitals
2    THIS IS A SENTENCE
3              sWaPcAsE
dtype: object
```

pandas.Series.str.wrap

Series.str.**wrap**(*self*, *width*, ***kwargs*)

Wrap long strings in the Series/Index to be formatted in paragraphs with length less than a given width.

This method has the same keyword parameters and defaults as `textwrap.TextWrapper`.

Parameters

width [int] Maximum line width.

expand_tabs [bool, optional] If True, tab characters will be expanded to spaces (default: True).

replace_whitespace [bool, optional] If True, each whitespace character (as defined by string.whitespace) remaining after tab expansion will be replaced by a single space (default: True).

drop_whitespace [bool, optional] If True, whitespace that, after wrapping, happens to end up at the beginning or end of a line is dropped (default: True).

break_long_words [bool, optional] If True, then words longer than width will be broken in order to ensure that no lines are longer than width. If it is false, long words will not be broken, and some lines may be longer than width (default: True).

break_on_hyphens [bool, optional] If True, wrapping will occur preferably on whitespace and right after hyphens in compound words, as it is customary in English. If false, only whitespaces will be considered as potentially good places for line breaks, but you need to set break_long_words to false if you want truly insecable words (default: True).

Returns

Series or Index

Notes

Internally, this method uses a `textwrap.TextWrapper` instance with default settings. To achieve behavior matching R's stringr library str_wrap function, use the arguments:

- expand_tabs = False
- replace_whitespace = True
- drop_whitespace = True
- break_long_words = False
- break_on_hyphens = False

Examples

```
>>> s = pd.Series(['line to be wrapped', 'another line to be wrapped'])
>>> s.str.wrap(12)
0             line to be\nwrapped
1    another line\nto be\nwrapped
dtype: object
```

pandas.Series.str.zfill

`Series.str.`**`zfill`**(*self*, *width*)

Pad strings in the Series/Index by prepending '0' characters.

Strings in the Series/Index are padded with '0' characters on the left of the string to reach a total string length *width*. Strings in the Series/Index with length greater or equal to *width* are unchanged.

Parameters

width [int] Minimum length of resulting string; strings with length less than *width* be prepended with '0' characters.

Returns

Series/Index of objects.

See also:

Series.str.rjust Fills the left side of strings with an arbitrary character.
Series.str.ljust Fills the right side of strings with an arbitrary character.
Series.str.pad Fills the specified sides of strings with an arbitrary character.
Series.str.center Fills boths sides of strings with an arbitrary character.

Notes

Differs from `str.zfill()` which has special handling for '+'/'-' in the string.

Examples

```
>>> s = pd.Series(['-1', '1', '1000', 10, np.nan])
>>> s
0      -1
1       1
2    1000
3      10
4     NaN
dtype: object
```

Note that `10` and `NaN` are not strings, therefore they are converted to `NaN`. The minus sign in `'-1'` is treated as a regular character and the zero is added to the left of it (`str.zfill()` would have moved it to the left). `1000` remains unchanged as it is longer than *width*.

```
>>> s.str.zfill(3)
0     0-1
1     001
2    1000
3     NaN
4     NaN
dtype: object
```

pandas.Series.str.isalnum

Series.str.**isalnum**(*self*)

Check whether all characters in each string are alphanumeric.

This is equivalent to running the Python string method `str.isalnum()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
```

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```
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isalpha

Series.str.**isalpha**(*self*)

Check whether all characters in each string are alphabetic.

This is equivalent to running the Python string method `str.isalpha()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
```

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```
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
```

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```
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isdigit

`Series.str.`**`isdigit`**(*self*)

Check whether all characters in each string are digits.

This is equivalent to running the Python string method `str.isdigit()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
```

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```
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isspace

Series.str.**isspace**(*self*)

Check whether all characters in each string are whitespace.

This is equivalent to running the Python string method `str.isspace()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
```

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```
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
```

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```
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.islower

`Series.str.`**`islower`**(*self*)

Check whether all characters in each string are lowercase.

This is equivalent to running the Python string method `str.islower()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
```

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```
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isupper

Series.str.**isupper**(*self*)

Check whether all characters in each string are uppercase.

This is equivalent to running the Python string method `str.isupper()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
```

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```
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
```

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```
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.istitle

Series.str.**istitle**(*self*)

Check whether all characters in each string are titlecase.

This is equivalent to running the Python string method `str.istitle()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
>>> s3 = pd.Series(['23', '³', '', ''])
```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

```
>>> s3.str.isdecimal()
0     True
1    False
2    False
3    False
dtype: bool
```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
```

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```
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isnumeric

Series.str.**isnumeric**(*self*)

Check whether all characters in each string are numeric.

This is equivalent to running the Python string method `str.isnumeric()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.

Examples

Checks for Alphabetic and Numeric Characters

```
>>> s1 = pd.Series(['one', 'one1', '1', ''])
```

```
>>> s1.str.isalpha()
0     True
1    False
2    False
3    False
dtype: bool
```

```
>>> s1.str.isnumeric()
0    False
1    False
2     True
3    False
dtype: bool
```

```
>>> s1.str.isalnum()
0     True
1     True
2     True
3    False
dtype: bool
```

Note that checks against characters mixed with any additional punctuation or whitespace will evaluate to false for an alphanumeric check.

```
>>> s2 = pd.Series(['A B', '1.5', '3,000'])
>>> s2.str.isalnum()
```

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```
0    False
1    False
2    False
dtype: bool
```

More Detailed Checks for Numeric Characters

There are several different but overlapping sets of numeric characters that can be checked for.

```
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```

The `s3.str.isdecimal` method checks for characters used to form numbers in base 10.

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2    False
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```

The `s.str.isdigit` method is the same as `s3.str.isdecimal` but also includes special digits, like superscripted and subscripted digits in unicode.

```
>>> s3.str.isdigit()
0     True
1     True
2    False
3    False
dtype: bool
```

The `s.str.isnumeric` method is the same as `s3.str.isdigit` but also includes other characters that can represent quantities such as unicode fractions.

```
>>> s3.str.isnumeric()
0     True
1     True
2     True
3    False
dtype: bool
```

Checks for Whitespace

```
>>> s4 = pd.Series([' ', '\t\r\n ', ''])
>>> s4.str.isspace()
0     True
1     True
2    False
dtype: bool
```

Checks for Character Case

```
>>> s5 = pd.Series(['leopard', 'Golden Eagle', 'SNAKE', ''])
```

```
>>> s5.str.islower()
0     True
1    False
```

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```
2    False
3    False
dtype: bool
```

```
>>> s5.str.isupper()
0    False
1    False
2     True
3    False
dtype: bool
```

The `s5.str.istitle` method checks for whether all words are in title case (whether only the first letter of each word is capitalized). Words are assumed to be as any sequence of non-numeric characters separated by whitespace characters.

```
>>> s5.str.istitle()
0    False
1     True
2    False
3    False
dtype: bool
```

pandas.Series.str.isdecimal

`Series.str.`**`isdecimal`**(*self*)

Check whether all characters in each string are decimal.

This is equivalent to running the Python string method `str.isdecimal()` for each element of the Series/Index. If a string has zero characters, `False` is returned for that check.

Returns

Series or Index of bool Series or Index of boolean values with the same length as the original Series/Index.

See also:

Series.str.isalpha Check whether all characters are alphabetic.
Series.str.isnumeric Check whether all characters are numeric.
Series.str.isalnum Check whether all characters are alphanumeric.
Series.str.isdigit Check whether all characters are digits.
Series.str.isdecimal Check whether all characters are decimal.
Series.str.isspace Check whether all characters are whitespace.
Series.str.islower Check whether all characters are lowercase.
Series.str.isupper Check whether all characters are uppercase.
Series.str.istitle Check whether all characters are titlecase.