Python Strings

## Strings

Strings in python are surrounded by either single quotation marks, or double quotation marks.

'hello' is the same as "hello".

You can display a string literal with the print() function:

## Quotes Inside Quotes

You can use quotes inside a string, as long as they don't match the quotes surrounding the string:

## Assign String to a Variable

Assigning a string to a variable is done with the variable name followed by an equal sign and the string

## Multiline Strings

You can assign a multiline string to a variable by using three quotes:

## Strings are Arrays

Like many other popular programming languages, strings in Python are arrays of bytes representing unicode characters.

However, Python does not have a character data type, a single character is simply a string with a length of 1.

Square brackets can be used to access elements of the string.

## Looping Through a String

Since strings are arrays, we can loop through the characters in a string, with a for loop.

## String Length

To get the length of a string, use the len() function.

## Check String

To check if a certain phrase or character is present in a string, we can use the keyword in.

## Check if NOT

To check if a certain phrase or character is NOT present in a string, we can use the keyword not in.

# Python - Slicing Strings

## Slicing

You can return a range of characters by using the slice syntax.

Specify the start index and the end index, separated by a colon, to return a part of the string.

## Slice From the Start

By leaving out the start index, the range will start at the first character:

## Slice To the End

By leaving out the end index, the range will go to the end:

## Negative Indexing

Use negative indexes to start the slice from the end of the string:

# Python - Modify Strings

Python has a set of built-in methods that you can use on strings.

## Upper Case

### Example[Get your own Python Server](https://www.w3schools.com/python/python_server.asp)

The upper() method returns the string in upper case:

## Lower Case

### Example

The lower() method returns the string in lower case:

## Remove Whitespace

Whitespace is the space before and/or after the actual text, and very often you want to remove this space.

## Replace String

### Example

The replace() method replaces a string with another string:

## Split String

The split() method returns a list where the text between the specified separator becomes the list items.

### Example

The split() method splits the string into substrings if it finds instances of the separator:

# Python - String Concatenation

## String Concatenation

To concatenate, or combine, two strings you can use the + operator.

# Python - Format - Strings

## String Format

As we learned in the Python Variables chapter, we cannot combine strings and numbers like this:

### Example[Ge](https://www.w3schools.com/python/python_server.asp)

But we can combine strings and numbers by using f-strings or the format() method!

## F-Strings

F-String was introduced in Python 3.6, and is now the preferred way of formatting strings.

To specify a string as an f-string, simply put an f in front of the string literal, and add curly brackets {} as placeholders for variables and other operations.

## Placeholders and Modifiers

A placeholder can contain variables, operations, functions, and modifiers to format the value.

A placeholder can include a modifier to format the value.

A modifier is included by adding a colon : followed by a legal formatting type, like .2f which means fixed point number with 2 decimals:

A placeholder can contain Python code, like math operations:

# Python - Escape Characters

## Escape Character

To insert characters that are illegal in a string, use an escape character.

An escape character is a backslash \ followed by the character you want to insert.

An example of an illegal character is a double quote inside a string that is surrounded by double quotes:

To fix this problem, use the escape character \":

## Escape Characters

Other escape characters used in Python:

|  |  |
| --- | --- |
| Code | Result |
| \' | Single Quote |
| \\ | Backslash |
| \n | New Line |
| \r | Carriage Return |
| \t | Tab |
| \b | Backspace |
| \f | Form Feed |
| \ooo | Octal value |
| \xhh | Hex value |

# Python - String Methods

## String Methods

Python has a set of built-in methods that you can use on strings.

**Note:** All string methods return new values. They do not change the original string.

|  |  |
| --- | --- |
| **Method** | **Description** |
| [capitalize()](https://www.w3schools.com/python/ref_string_capitalize.asp) | Converts the first character to upper case |
| [casefold()](https://www.w3schools.com/python/ref_string_casefold.asp) | Converts string into lower case |
| [center()](https://www.w3schools.com/python/ref_string_center.asp) | Returns a centered string |
| [count()](https://www.w3schools.com/python/ref_string_count.asp) | Returns the number of times a specified value occurs in a string |
| [encode()](https://www.w3schools.com/python/ref_string_encode.asp) | Returns an encoded version of the string |
| [endswith()](https://www.w3schools.com/python/ref_string_endswith.asp) | Returns true if the string ends with the specified value |
| [expandtabs()](https://www.w3schools.com/python/ref_string_expandtabs.asp) | Sets the tab size of the string |
| [find()](https://www.w3schools.com/python/ref_string_find.asp) | Searches the string for a specified value and returns the position of where it was found |
| [format()](https://www.w3schools.com/python/ref_string_format.asp) | Formats specified values in a string |
| format\_map() | Formats specified values in a string |
| [index()](https://www.w3schools.com/python/ref_string_index.asp) | Searches the string for a specified value and returns the position of where it was found |
| [isalnum()](https://www.w3schools.com/python/ref_string_isalnum.asp) | Returns True if all characters in the string are alphanumeric |
| [isalpha()](https://www.w3schools.com/python/ref_string_isalpha.asp) | Returns True if all characters in the string are in the alphabet |
| [isascii()](https://www.w3schools.com/python/ref_string_isascii.asp) | Returns True if all characters in the string are ascii characters |
| [isdecimal()](https://www.w3schools.com/python/ref_string_isdecimal.asp) | Returns True if all characters in the string are decimals |
| [isdigit()](https://www.w3schools.com/python/ref_string_isdigit.asp) | Returns True if all characters in the string are digits |
| [isidentifier()](https://www.w3schools.com/python/ref_string_isidentifier.asp) | Returns True if the string is an identifier |
| [islower()](https://www.w3schools.com/python/ref_string_islower.asp) | Returns True if all characters in the string are lower case |
| [isnumeric()](https://www.w3schools.com/python/ref_string_isnumeric.asp) | Returns True if all characters in the string are numeric |
| [isprintable()](https://www.w3schools.com/python/ref_string_isprintable.asp) | Returns True if all characters in the string are printable |
| [isspace()](https://www.w3schools.com/python/ref_string_isspace.asp) | Returns True if all characters in the string are whitespaces |
| [istitle()](https://www.w3schools.com/python/ref_string_istitle.asp) | Returns True if the string follows the rules of a title |
| [isupper()](https://www.w3schools.com/python/ref_string_isupper.asp) | Returns True if all characters in the string are upper case |
| [join()](https://www.w3schools.com/python/ref_string_join.asp) | Joins the elements of an iterable to the end of the string |
| [ljust()](https://www.w3schools.com/python/ref_string_ljust.asp) | Returns a left justified version of the string |
| [lower()](https://www.w3schools.com/python/ref_string_lower.asp) | Converts a string into lower case |
| [lstrip()](https://www.w3schools.com/python/ref_string_lstrip.asp) | Returns a left trim version of the string |
| [maketrans()](https://www.w3schools.com/python/ref_string_maketrans.asp) | Returns a translation table to be used in translations |
| [partition()](https://www.w3schools.com/python/ref_string_partition.asp) | Returns a tuple where the string is parted into three parts |
| [replace()](https://www.w3schools.com/python/ref_string_replace.asp) | Returns a string where a specified value is replaced with a specified value |
| [rfind()](https://www.w3schools.com/python/ref_string_rfind.asp) | Searches the string for a specified value and returns the last position of where it was found |
| [rindex()](https://www.w3schools.com/python/ref_string_rindex.asp) | Searches the string for a specified value and returns the last position of where it was found |
| [rjust()](https://www.w3schools.com/python/ref_string_rjust.asp) | Returns a right justified version of the string |
| [rpartition()](https://www.w3schools.com/python/ref_string_rpartition.asp) | Returns a tuple where the string is parted into three parts |
| [rsplit()](https://www.w3schools.com/python/ref_string_rsplit.asp) | Splits the string at the specified separator, and returns a list |
| [rstrip()](https://www.w3schools.com/python/ref_string_rstrip.asp) | Returns a right trim version of the string |
| [split()](https://www.w3schools.com/python/ref_string_split.asp) | Splits the string at the specified separator, and returns a list |
| [splitlines()](https://www.w3schools.com/python/ref_string_splitlines.asp) | Splits the string at line breaks and returns a list |
| [startswith()](https://www.w3schools.com/python/ref_string_startswith.asp) | Returns true if the string starts with the specified value |
| [strip()](https://www.w3schools.com/python/ref_string_strip.asp) | Returns a trimmed version of the string |
| [swapcase()](https://www.w3schools.com/python/ref_string_swapcase.asp) | Swaps cases, lower case becomes upper case and vice versa |
| [title()](https://www.w3schools.com/python/ref_string_title.asp) | Converts the first character of each word to upper case |
| [translate()](https://www.w3schools.com/python/ref_string_translate.asp) | Returns a translated string |
| [upper()](https://www.w3schools.com/python/ref_string_upper.asp) | Converts a string into upper case |
| [zfill()](https://www.w3schools.com/python/ref_string_zfill.asp) | Fills the string with a specified number of 0 values at the beginning |

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