Python Tuples

Tuple

Tuples are used to store multiple items in a single variable.

A tuple is a collection which is ordered and **unchangeable**.

Tuples are written with round brackets.

Example

Create a Tuple:

thistuple = ("apple", "banana", "cherry")  
print(thistuple)

Tuple Items

Tuple items are ordered, unchangeable, and allow duplicate values.

Tuple items are indexed, the first item has index [0], the second item has index [1] etc.

Ordered

When we say that tuples are ordered, it means that the items have a defined order, and that order will not change.

Unchangeable

Tuples are unchangeable, meaning that we cannot change, add or remove items after the tuple has been created.

Allow Duplicates

Since tuples are indexed, they can have items with the same value:

Example

Tuples allow duplicate values:

thistuple = ("apple", "banana", "cherry", "apple", "cherry")  
print(thistuple)

Tuple Length

To determine how many items a tuple has, use the len() function:

Example

Print the number of items in the tuple:

thistuple = ("apple", "banana", "cherry")  
print(len(thistuple))

Create Tuple With One Item

To create a tuple with only one item, you have to add a comma after the item, otherwise Python will not recognize it as a tuple.

Example

One item tuple, remember the comma:

thistuple = ("apple",)  
print(type(thistuple))  
  
#NOT a tuple  
thistuple = ("apple")  
print(type(thistuple))

Tuple Items - Data Types

Tuple items can be of any data type:

Example

String, int and boolean data types:

tuple1 = ("apple", "banana", "cherry")  
tuple2 = (1, 5, 7, 9, 3)  
tuple3 = (True, False, False)

A tuple can contain different data types:

Example

A tuple with strings, integers and boolean values:

tuple1 = ("abc", 34, True, 40, "male")

type()

From Python's perspective, tuples are defined as objects with the data type 'tuple':

<class 'tuple'>

Example

What is the data type of a tuple?

mytuple = ("apple", "banana", "cherry")  
print(type(mytuple))

The tuple() Constructor

It is also possible to use the tuple() constructor to make a tuple.

Example

Using the tuple() method to make a tuple:

thistuple = tuple(("apple", "banana", "cherry")) # note the double round-brackets  
print(thistuple)

Python - Tuple Methods

Tuple Methods

Python has two built-in methods that you can use on tuples.

|  |  |
| --- | --- |
| **Method** | **Description** |
| [count()](https://www.w3schools.com/python/ref_tuple_count.asp) | Returns the number of times a specified value occurs in a tuple |
| [index()](https://www.w3schools.com/python/ref_tuple_index.asp) | Searches the tuple for a specified value and returns the position of where it was found |