Python Tuples

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Tuple

A tuple is a collection which is ordered and **unchangeable**. In Python tuples are written with round brackets.

Example

Create a Tuple:

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

Try it Yourself »

Access Tuple Items

You can access tuple items by referring to the index number, inside square brackets:

Example

Print the second item in the tuple:

```
print(thistuple[1])
```

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Negative Indexing

Negative indexing means beginning from the end, `-1` refers to the last item, `-2` refers to the second last item etc.

Example

Print the last item of the tuple:

```
thistuple = ("apple", "banana", "cherry")
print(thistuple[-1])
```

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Range of Indexes

You can specify a range of indexes by specifying where to start and where to end the range.

When specifying a range, the return value will be a new tuple with the specified items.

Example

Return the third, fourth, and fifth item:

```
thistuple = ("apple", "banana", "cherry", "orange", "kiwi", "melon", "mango")
print(thistuple[2:5])
```

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Note: The search will start at index 2 (included) and end at index 5 (not included).

Remember that the first item has index 0.

Range of Negative Indexes

Specify negative indexes if you want to start the search from the end of the tuple:

Example

This example returns the items from index -4 (included) to index -1 (excluded)

```
thistuple = ("apple", "banana", "cherry", "orange", "kiwi", "melon", "mango")
print(thistuple[-4:-1])
```

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Change Tuple Values

Once a tuple is created, you cannot change its values. Tuples are **unchangeable**, or **immutable** as it also is called.

But there is a workaround. You can convert the tuple into a list, change the list, and convert the list back into a tuple.

Example

Convert the tuple into a list to be able to change it:

```
y = list(x)
y[1] = "kiwi"
x = tuple(y)

print(x)
```

Try it Yourself »

Loop Through a Tuple

You can loop through the tuple items by using a `for` loop.

Example

Iterate through the items and print the values:

```
thistuple = ("apple", "banana", "cherry")
for x in thistuple:
  print(x)
```

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You will learn more about `for` loops in our Python For Loops Chapter.

Check if Item Exists

To determine if a specified item is present in a tuple use the `in` keyword:

Example

Check if "apple" is present in the tuple:

```
  print("Yes, 'apple' is in the fruits tuple")
```

Try it Yourself »

Tuple Length

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

Example

Print the number of items in the tuple:

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

Try it Yourself »

Add Items

Once a tuple is created, you cannot add items to it. Tuples are **unchangeable**.

Example

You cannot add items to a tuple:

```
thistuple = ("apple", "banana", "cherry")
thistuple[3] = "orange" # This will raise an error
print(thistuple)
```

Try it Yourself »

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 commma:

```
thistuple = ("apple",)
print(type(thistuple))

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

Try it Yourself »

Remove Items

Note: You cannot remove items in a tuple.

Tuples are **unchangeable**, so you cannot remove items from it, but you can delete the tuple completely:

Example

The `del` keyword can delete the tuple completely:

```
thistuple = ("apple", "banana", "cherry")
del thistuple
```

Try it Yourself »

Join Two Tuples

To join two or more tuples you can use the `+` operator:

Example

Join two tuples:

```
tuple1 = ("a", "b" , "c")
tuple2 = (1, 2, 3)

tuple3 = tuple1 + tuple2
print(tuple3)
```

Try it Yourself »

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)
```

Tuple Methods

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

Method	Description
count()	Returns the number of times a specified value occurs in a tuple
index()	Searches the tuple for a specified value and returns the position of where it was found

Test Yourself With Exercises

Exercise:

Print the first item in the `fruits` tuple.

```
fruits = ("apple", "banana", "cherry")
print(          )
```

Submit Answer »

Start the Exercise