



Python!

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Tuple

What is a Tuple?

```
my_tuple = ()  
type (my_tuple)  
o/p : tuple
```

Creating a Tuple

```
my_tuple = (1, 2, 3)  
my_tuple  
o/p (1, 2, 3)
```

```
my_tuple_1 = (1, 'hello', 2.5)  
my_tuple_1  
o/p : (1, 'hello', 2.5)
```

Tuple

Creating a Tuple

```
my_tuple_2 = ('football', [1, 2, 3], ('hello', 'goodbye'))
```

```
my_tuple_2
```

```
o/p :('football', [1, 2, 3], ('hello', 'goodbye'))
```

```
my_tuple_3 = 1, 'spain', [1, 2, 3]
```

```
my_tuple_3
```

```
o/p : (1, 'spain', [1, 2, 3])
```

```
type(my_tuple_3)
```

```
o/p tuple
```

```
my_tuple_4= ('hello')
```

```
type(my_tuple_4)
```

```
o/p : str
```



Tuple

Creating a Tuple

```
my_tuple_4= ('hello',)  
type(my_tuple_4)  
o/p tuple
```

we simply add elements to our brackets and we separate them by a comma,
we can include any data type or structure.

So integers, floating point numbers and strings.

And we can even include other data structures such as lists or two
tuples.

Tuple

Accessing Tuple elements

```
my_tuple = (1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))
```

```
my_tuple[4]
```

```
o/p : 5
```

```
my_tuple[7]
```

```
o/p ; IndexError: tuple index out of range
```

```
my_tuple [2.5]
```

```
o/p : TypeError: tuple indices must be integers or slices, not float
```

```
my_tuple
```

```
(1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))
```

```
my_tuple [6]
```

```
o/p : (9, 10, 11)
```



Tuple

Accessing Tuple elements

my_tuple

(1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))

my_tuple [6][1]

o/p : 10

We can use negative indexing

my_tuple [-1][-1]

o/p : 11

Index 0 upto 3rd element.

my_tuple [0:3]

o/p : (1, 2, 3)

Tuple

Accessing Tuple elements

my_tuple [:3]

o/p : (1, 2, 3)

my_tuple [:]

o/p : (1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))

my_tuple [-3:]

o/p : (5, [6, 7, 8], (9, 10, 11))

 **Tuple**

Changing Tuple elements

```
my_tuple (1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))
```

```
my_tuple[0]
```

```
o/p : 1
```

```
my_tuple[0] = 'hello'
```

```
o/p s: TypeError: 'tuple' object does not support item assignment
```

```
my_tuple[5]
```

```
o/p : [6, 7, 8]
```

```
my_tuple[5][2]
```

```
o/p : 8
```

 **Tuple**

Changing Tuple elements

```
my_tuple[5][2] = 80
```

```
my_tuple
```

```
o/p : (1, 2, 3, 4, 5, [6, 7, 80], (9, 10, 11))
```

```
type (my_tuple[5])
```

```
o/p : list
```

```
my_tuple [5].append(100)
```

```
my_tuple
```

```
o/p : (1, 2, 3, 4, 5, [6, 7, 80, 100], (9, 10, 11))
```

 **Tuple**

Changing Tuple elements
by reassigning the values

my_tuple

o/p : (1, 2, 3, 4, 5, [6, 7, 80, 100], (9, 10, 11))

my_tuple ('one', 'two', 'three')

my_tuple

o/p : ('one', 'two', 'three')

my_tuple

o/p : ('one', 'two', 'three')

my_tuple + ('four', 'five', 'six')

o/p : ('one', 'two', 'three', 'four', 'five', 'six')

Tuple

Changing Tuple elements

my_tuple

o/p : ('one', 'two', 'three')

my_tuple_1 = my_tuple + ('four', 'five', 'six')

my_tuple_1

o/p : ('one', 'two', 'three', 'four', 'five', 'six')

my_tuple

o/p : ('one', 'two', 'three')

my_tuple * 2

o/p : ('one', 'two', 'three', 'one', 'two', 'three')



Deleting a Tuple

```
my_tuple (1, 2, 3, 4, 5, [6, 7, 8], (9, 10, 11))
```

```
my_tuple[0]
```

```
o/p : 1
```

```
del my_tuple[0]
```

```
o/p : TypeError: 'tuple' object doesn't support item deletion
```

```
del my_tuple
```

```
my_tuple
```

```
o/p : NameError: name 'my_tuple' is not defined
```

Tuple

Tuple Methods & Operations

my_tuple (1, 1, 1, 1, 2, 3, 4, 1, 1)

my_tuple.count(1)

o/p : 6

my_tuple.index(2)

o/p : 4

my_tuple.index(1)

o/p : 0

my_tuple.index(1, 5)

o/p : 7

This is because it's starting from element six and the first occurrence of one is at index seven.

Tuple

Tuple Methods & Operations

1 in my_tuple

o/p : True

5 in my_tuple

o/p : False

5 not in my_tuple

o/p : True

Tuple

Tuple Unpacking

```
my_tuple = (1, 2, 'hello', 2.5)
```

```
my_tuple
```

```
o/p : (1, 2, 'hello', 2.5)
```

```
type(my_tuple)
```

```
o/p : tuple
```

```
a, b, c, d = my_tuple
```

```
print(a)
```

```
o/p : 1
```

```
print(c)
```

```
o/p : 'hello'
```

```
d
```

```
o/p : 2.5
```



Tuple Unpacking

a, b, c = my_tuple

o/p : ValueError: too many values to unpack (expected 3)