

Tuple creation

```
In [2]: tup1=()  
tup1
```

```
Out[2]: ()
```

```
In [3]: tup2 = (10,20,30)  
tup2
```

```
Out[3]: (10, 20, 30)
```

```
In [4]: tup3=(10.4,3.4,67.8)  
tup3
```

```
Out[4]: (10.4, 3.4, 67.8)
```

```
In [5]: tup4=('hello','python')  
tup4
```

```
Out[5]: ('hello', 'python')
```

```
In [6]: tup5=('data',56,(9,8.9),('op',9))  
tup5
```

```
Out[6]: ('data', 56, (9, 8.9), ('op', 9))
```

```
In [7]: tup6=(4,5.6,'qwerty')  
tup6
```

```
Out[7]: (4, 5.6, 'qwerty')
```

```
In [9]: tup7=('hai',24,6.7,[1,2,3],{8,9})  
tup7
```

```
Out[9]: ('hai', 24, 6.7, [1, 2, 3], {8, 9})
```

```
In [10]: len(tup7)
```

```
Out[10]: 5
```

Tuple Indexing

```
In [11]: tup2[0]
```

```
Out[11]: 10
```

```
In [12]: tup4[0]
```

```
Out[12]: 'hello'
```

```
In [13]: tup4[0][0]
```

```
Out[13]: 'h'
```

```
In [14]: tup4[-1]
```

```
Out[14]: 'python'
```

```
In [15]: tup5[-1]
```

```
Out[15]: ('op', 9)
```

Tuple slicing

```
In [1]: tup=('one','two','three','four','five','six','seven','eight')
```

```
In [2]: tup[0:3]
```

```
Out[2]: ('one', 'two', 'three')
```

```
In [3]: tup[3:]
```

```
Out[3]: ('four', 'five', 'six', 'seven', 'eight')
```

```
In [4]: tup[:2]
```

```
Out[4]: ('one', 'two')
```

```
In [5]: tup[-3:]
```

```
Out[5]: ('six', 'seven', 'eight')
```

```
In [6]: tup[-1]
```

```
Out[6]: 'eight'
```

```
In [7]: tup[:]
```

```
Out[7]: ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

Remove & change Items

```
In [8]: del tup[0]
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[8], line 1
----> 1 del tup[0]

TypeError: 'tuple' object doesn't support item deletion
```

```
In [9]: tup[0]=9
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[9], line 1
----> 1 tup[0]=9

TypeError: 'tuple' object does not support item assignment
```

```
In [11]: del tup
```

```
-----
NameError                                Traceback (most recent call last)
Cell In[11], line 1
----> 1 del tup

NameError: name 'tup' is not defined
```

loop through tuple

```
In [15]: mytup=('one','two','three','four')
mytup
```

```
Out[15]: ('one', 'two', 'three', 'four')
```

```
In [17]: for i in mytup:
         print(i)
```

```
one
two
three
four
```

```
In [18]: for i in enumerate(mytup):
         print(i)
```

```
(0, 'one')
(1, 'two')
(2, 'three')
(3, 'four')
```

Tuple Membership

```
In [19]: mytup
```

Out[19]: ('one', 'two', 'three', 'four')

```
In [20]: 'one' in mytup
```

Out[20]: True

```
In [21]: 'ten' in mytup
```

Out[21]: False

```
In [22]: if 'three' in mytup:
          print('three is present in tuple')
        else:
          print('Three is not present in tuple')
```

three is present in tuple

Index Position

```
In [23]: mytup
```

Out[23]: ('one', 'two', 'three', 'four')

```
In [24]: mytup.index('one')
```

Out[24]: 0

```
In [27]: mytup.index('two')
```

Out[27]: 1

```
In [29]: mytup
```

Out[29]: ('one', 'two', 'three', 'four')

```
In [31]: mytup.index('one')
```

Out[31]: 0

Sorting

```
In [33]: mytup2=(43,67,99,12,6,90,67)
          mytup2
```

Out[33]: (43, 67, 99, 12, 6, 90, 67)

```
In [34]: sorted(mytup2)
```

Out[34]: [6, 12, 43, 67, 67, 90, 99]

```
In [35]: sorted(mytup2, reverse=True)
```

```
Out[35]: [99, 90, 67, 67, 43, 12, 6]
```