

TUPLE

A tuple in python is an ordered,immutable collection of items. It is similar to list but cannot change the element after creation.

```
In [47]: t1=()
         t2=(1,3,5,8) #Integer value
         t3=(1.3,3.5,5.8,8.1) #Float value
         t4=("abc","xyz","def") #String value
         t5=(1,2.8,"one",2+9j) #Different data types in one variable
```

```
In [19]: type(t1)
         type(t4)
```

Out[19]: tuple

```
In [21]: len(t5)
```

Out[21]: 4

```
In [28]: t6=(1,2.3,6,0,40,(10,20),(1.9,2.0),5,90) #Tuple inside tuple is called nested tuple
```

```
In [29]: len(t6)
```

Out[29]: 9

```
In [7]: t=(100,400,300,200,500,600,200,400,500,500,500)
         t
```

Out[7]: (100, 400, 300, 200, 500, 600, 200, 400, 500, 500, 500)

```
In [5]: t.count(400)
```

Out[5]: 2

```
In [8]: t.count(500)
```

Out[8]: 4

```
In [9]: t.index(500)
```

Out[9]: 4

```
In [10]: t.index(400)
```

Out[10]: 1

Tuple slicing

```
In [30]: T1=(20,40,60,80,100,120,140,160)
         T1
```

```
Out[30]: (20, 40, 60, 80, 100, 120, 140, 160)
```

```
In [31]: T1[0:5]
```

```
Out[31]: (20, 40, 60, 80, 100)
```

```
In [32]: T1[2:8]
```

```
Out[32]: (60, 80, 100, 120, 140, 160)
```

```
In [33]: T1[:3]
```

```
Out[33]: (20, 40, 60)
```

```
In [34]: T1[-3:]
```

```
Out[34]: (120, 140, 160)
```

```
In [35]: T1[:]
```

```
Out[35]: (20, 40, 60, 80, 100, 120, 140, 160)
```

Tuple is immutable

```
In [36]: T1
```

```
Out[36]: (20, 40, 60, 80, 100, 120, 140, 160)
```

```
In [37]: del T1[5] # it can't delete
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[37], line 1
----> 1 del T1[5]

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

```
In [40]: for i in T1:
         print(i)
```

```
20
40
60
80
100
120
140
160
```

```
In [41]: for i in enumerate(T1):  
         print(i)
```

```
(0, 20)  
(1, 40)  
(2, 60)  
(3, 80)  
(4, 100)  
(5, 120)  
(6, 140)  
(7, 160)
```

```
In [43]: if 200 in T1:  
         print("200 is present")  
         else:  
             print("200 is not present")
```

200 is not present

```
In [44]: T2=(90,99,60,55,45,87,92,23,34)  
         T2
```

Out[44]: (90, 99, 60, 55, 45, 87, 92, 23, 34)

```
In [46]: sorted(T2)
```

Out[46]: [23, 34, 45, 55, 60, 87, 90, 92, 99]

```
In [ ]:
```