

Tuple creation

```
In [84]: tup1 = ()
```

```
In [86]: tup2 = (10,30,60)
```

```
In [88]: tup3 =(10.77,30.66,60.89)
```

```
In [90]: tup4 = ('one','two',"three")
```

```
In [92]: tup5 = ('Asif',25,(50,100),(150,90)) #nested tuples
```

```
In [94]: tup6 = (100,'Asif',17.765)
```

```
In [96]: tup7 = ('Asif',25,[50,100],[150,90],{'john','David'},(99,22,33))
```

```
In [98]: len(tup7)
```

```
Out[98]: 6
```

Tuple Indexing

```
In [101... tup2[0] #retrive first element of tuple
```

```
Out[101... 10
```

```
In [103... tup4[0]
```

```
Out[103... 'one'
```

```
In [105... tup4[0][0]
```

```
Out[105... 'o'
```

```
In [107... tup4[-1]
```

```
Out[107... 'three'
```

```
In [109... tup5[-1]
```

```
Out[109... (150, 90)
```

Tuple Slicing

```
In [112... mytuple = ('one','two','three','four','five','six','seven','eight')
```

```
In [114... mytuple[0:3] # Return all items from 0th to 3rd index location excluding item
```

Out[114...] ('one', 'two', 'three')

```
In [116...] mytuple[2:5]
```

Out[116...] ('three', 'four', 'five')

```
In [118...] mytuple[:3] #return first three items
```

Out[118...] ('one', 'two', 'three')

```
In [120...] mytuple[:2] #return first two items
```

Out[120...] ('one', 'two')

```
In [122...] mytuple[-3:] #return last three items
```

Out[122...] ('six', 'seven', 'eight')

```
In [124...] mytuple[-2:] #return last two items
```

Out[124...] ('seven', 'eight')

```
In [126...] mytuple[-1] #return last item of tuple
```

Out[126...] 'eight'

```
In [128...] mytuple[:] # return whole tuple
```

Out[128...] ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

Remove & chnge items

```
In [131...] mytuple
```

Out[131...] ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

```
In [133...] del mytuple[0] # Tuples are immutable which means we cannot delete tuple items
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[133], line 1  
----> 1 del mytuple[0] # Tuples are immutable which means we cannot delete tuple items
```

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

```
In [135...] mytuple[0] = 1 # Tuples are immutable which means we cannot change tuple items
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[135], line 1  
----> 1 mytuple[0] = 1 # Tuples are immutable which means we cannot change tuple items
```

TypeError: 'tuple' object does not support item assignment

```
In [ ]: del mytuple #Deleting entire tuple object is possible
```

loop through a tuple

```
In [139... mytuple
```

```
Out[139... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [141... for i in mytuple:  
    print(i)
```

```
one  
two  
three  
four  
five  
six  
seven  
eight
```

```
In [143... for i in enumerate (mytuple):  
    print(i)
```

```
(0, 'one')  
(1, 'two')  
(2, 'three')  
(3, 'four')  
(4, 'five')  
(5, 'six')  
(6, 'seven')  
(7, 'eight')
```

Tuple Membership

```
In [147... mytuple
```

```
Out[147... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [149... 'one' in mytuple #check if 'one' exist list
```

```
Out[149... True
```

```
In [151... 'ten' in mytuple
```

```
Out[151... False
```

```
In [153... if 'three' in mytuple:  
    print("eleven is present in tuple")  
else:  
    print("eleven is not present")
```

```
eleven is present in tuple
```

index position

```
In [156... mytuple
```

```
Out[156... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [158... mytuple.index('one')
```

```
Out[158... 0
```

```
In [160... mytuple.index('five')
```

```
Out[160... 4
```

```
In [164... mytuple
```

```
Out[164... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [170... mytuple1 = ('one','two','three','four','one','one','two','three')
```

```
In [172... mytuple1.index('one')
```

```
Out[172... 0
```

Sorting

```
In [174... mytuple2 = (43,67,99,12,6,90,67)
```

```
In [177... sorted(mytuple2)#return a new sorted list and doesnot change origional tuple
```

```
Out[177... [6, 12, 43, 67, 67, 90, 99]
```

```
In [ ]: sorted.
```