

T1

```
In [6]: tup1=()
```

```
In [8]: tup1
```

```
Out[8]: ()
```

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

```
In [12]: tup3=(10,77,30,66,60.89)
```

```
In [14]: tup5=('asif',25,(50,100),(150,90))
```

```
In [16]: tup4=('one','two',"three")
```

```
In [20]: tup6=(100,'asif',17.765)
```

```
In [63]: tup7=('asif',25,[50,100],[150,90],{'john','david'},(99,22,33))
```

```
In [65]: len(tup1)#gives the length of the tuple
```

```
Out[65]: 0
```

```
In [67]: len(tup7)
```

```
Out[67]: 6
```

TUPLE INDEXING

```
In [70]: tup2[0]
```

```
Out[70]: 10
```

```
In [72]: tup4[0:3]
```

```
Out[72]: ('one', 'two', 'three')
```

```
In [74]: tup4[::-1]
```

```
Out[74]: ('three', 'two', 'one')
```

```
In [76]: tup7[::-1]
```

```
Out[76]: ((99, 22, 33), {'david', 'john'}, [150, 90], [50, 100], 25, 'asif')
```

```
In [98]: tup7[1::]
```

```
Out[98]: (25, [50, 100], [150, 90], {'david', 'john'}, (99, 22, 33))
```

```
In [104...] tup4[0][1]
```

```
Out[104...] 'n'
```

```
In [106...] tup4[-3]
```

```
Out[106...] 'one'
```

tuple slicing

```
In [109...] mytuple=('one','two','three','four','five','six','seven','eight')
```

```
In [111...] mytuple
```

```
Out[111...] ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [113...] mytuple[0:3]
```

```
Out[113...] ('one', 'two', 'three')
```

```
In [127...] mytuple[::-1]
```

```
Out[127...] ('eight', 'seven', 'six', 'five', 'four', 'three', 'two', 'one')
```

```
In [129...] mytuple[:-3]
```

```
Out[129...] ('one', 'two', 'three', 'four', 'five')
```

```
In [131...] mytuple[-3::]
```

```
Out[131...] ('six', 'seven', 'eight')
```

```
In [133...] mytuple[:]
```

```
Out[133...] ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

DELETION IN TUPLE IS NOT POSSIBLE SINCE THEY ARE IMMUTABLE

```
In [137...] del mytuple[0]
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[137], line 1  
----> 1 del mytuple[0]  
  
TypeError: 'tuple' object doesn't support item deletion
```

```
In [143...] #we cannot change values in tuple since they are immutable  
mytuple[0]=1
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[143], line 2
      1 #we cannot change values in tuple since they are immutable
----> 2 mytuple[0]=1

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

```
In [145... # but deletion of the entire tuple is possible
del mytuple
```

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

```
-----
NameError                                Traceback (most recent call last)
Cell In[147], line 1
----> 1 mytuple

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

LOOP THROUGH A TOUPLE

```
In [150... mytuple=('one','two','three','four','five','six','seven','eight')
```

```
In [152... for i in mytuple:
           print(i)
```

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

```
In [154... 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 [157... mytuple
```

```
Out[157... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [159... 'one' in mytuple
```

Out[159... True

```
In [161... 'one' not in mytuple
```

Out[161... False

```
In [165... 'ten' not in mytuple
```

Out[165... True

```
In [167... if 'three' in mytuple:
    print('three is present in my tuple')
else:
    print('three is not in mytuple')
```

three is present in my tuple

```
In [169... if 'one' not in mytuple:
    print(True)
else:
    print(False)
```

False

INDEX POSITION

```
In [174... mytuple
```

Out[174... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

```
In [176... mytuple.index('one')
```

Out[176... 0

```
In [178... mytuple.count('one')
```

Out[178... 1

```
In [184... mytuple.index('three')
```

Out[184... 2

```
In [186... mytuple.count('hello')
```

Out[186... 0

SORTING

```
In [191... sorted(mytuple)
```

Out[191... ['eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two']

```
In [193... mytuple2=(3,44,5566,87,999,0)
```

In [195... `sorted(mytuple2)`

Out[195... `[0, 3, 44, 87, 999, 5566]`

In []: