

# TUPLE CREATION

```
In [119... tup1=() #empty tuple  
tup1
```

```
Out[119... ()
```

```
In [121... tup2 = (10,30,60) #tuple of integer numbers  
tup2
```

```
Out[121... (10, 30, 60)
```

```
In [123... tup3 =(10.77,30.66,60.89)#tuple of float numbers  
tup3
```

```
Out[123... (10.77, 30.66, 60.89)
```

```
In [125... tup4=('one','two',"three")#tuple of strings  
tup4
```

```
Out[125... ('one', 'two', 'three')
```

```
In [127... tup5=('nani',35,(50,100),(150,90))#nested tuples  
tup5
```

```
Out[127... ('nani', 35, (50, 100), (150, 90))
```

```
In [129... tup6 =(100,'nani',17.765)#tuple of mixed data types  
tup6
```

```
Out[129... (100, 'nani', 17.765)
```

```
In [131... tup7=('nani',25,[50,100],[150,90],{'arjun','krishna'},(99,22,33))  
tup7
```

```
Out[131... ('nani', 25, [50, 100], [150, 90], {'arjun', 'krishna'}, (99, 22, 33))
```

```
In [133... len(tup7)#length of list
```

```
Out[133... 6
```

## Tuple indexing

```
In [136... tup2
```

```
Out[136... (10, 30, 60)
```

```
In [138... tup2[0]#retreive first element of the tuple
```

```
Out[138... 10
```

```
In [140...] tup4[0]#retrieive first element of the tuple
```

```
Out[140...] 'one'
```

```
In [142...] tup4
```

```
Out[142...] ('one', 'two', 'three')
```

```
In [144...] tup4[0][0]#nested indexing -access the first character of the first tuple eleme
```

```
Out[144...] 'o'
```

```
In [146...] tup4[0][1]
```

```
Out[146...] 'n'
```

```
In [148...] tup4[1][2]
```

```
Out[148...] 'o'
```

```
In [150...] tup4[-1]# last item of the tuple
```

```
Out[150...] 'three'
```

```
In [152...] tup5[-1] # last item of tuple
```

```
Out[152...] (150, 90)
```

## tuple slicing

```
In [209...] mytuple =('one','two','three','four','five','six','seven','eighgt')
```

```
In [211...] mytuple
```

```
Out[211...] ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eighgt')
```

```
In [159...] mytuple[0:3]#return all items from 0th to 3rd index location excluding the item
```

```
Out[159...] ('one', 'two', 'three')
```

```
In [161...] mytuple[2:5]
```

```
Out[161...] ('three', 'four', 'five')
```

```
In [163...] mytuple[:3]
```

```
Out[163...] ('one', 'two', 'three')
```

```
In [165...] mytuple[:2]
```

```
Out[165...] ('one', 'two')
```

```
In [167...] mytuple[-3:]# return last three items
```

```
Out[167... ('six', 'seven', 'eight')
```

```
In [169... mytuple[-2:]
```

```
Out[169... ('seven', 'eight')
```

```
In [171... mytuple[-1:]
```

```
Out[171... ('eight',)
```

```
In [173... mytuple[:] #return whole tuple
```

```
Out[173... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

## Remove & change items

```
In [213... mytuple
```

```
Out[213... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [215... del mytuple[0] # tuples are immutable which we cant delete
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[215], line 1  
----> 1 del mytuple[0]  
  
TypeError: 'tuple' object doesn't support item deletion
```

```
In [180... mytuple[0]=1 # we cant change tuple items
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[180], line 1  
----> 1 mytuple[0]=1  
  
TypeError: 'tuple' object does not support item assignment
```

```
In [182... del mytuple # deleting entire tuple object is possible
```

## loop through a tuple

```
In [217... mytuple
```

```
Out[217... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [219... for i in mytuple:  
    print(i)
```

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

```
In [221... 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 [224... mytuple
```

```
Out[224... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [226... 'one' in mytuple
```

```
Out[226... True
```

```
In [228... 'ten' in mytuple
```

```
Out[228... False
```

```
In [230... if 'three' in mytuple:  
            print('three is present in the tuple')  
        else:  
            print('three is not present in the tuple')
```

```
three is present in the tuple
```

```
In [232... if 'eleven' in mytuple:  
            print('eleven is present in the tuple')  
        else:  
            print('eleven is not present in the tuple')
```

```
eleven is not present in the tuple
```

## index position

```
In [235... mytuple
```

```
Out[235... ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [237... mytuple.index('four')# index of first equal to 'one'
```

Out[237... 3

In [239... `mytuple.index('one')`

Out[239... 0

In [103... `mytuple.index('five')`

Out[103... 4

## sorting

In [111... `mytuple2 =(43,67,99,12,6,90,67)`

In [115... `sorted(mytuple2)`

Out[115... [6, 12, 43, 67, 67, 90, 99]

In [117... `sorted(mytuple2, reverse=True)`

Out[117... [99, 90, 67, 67, 43, 12, 6]

In [ ]: