Tuple

August 16, 2024

Tuple Creation

```
[3]: tup1 = () #Empty Tuple
```

```
[7]: tup2 = (10,30,60) #tuple of integers numbers
```

```
[11]: tup3 = (10.77,30.66,60.89) #Tuple of float number
```

```
[13]: tup4 = ('one','two',"three") #Tuple of strings
```

```
[17]: tup5 = ('Mandeep', 25,(50,100),(150,90)) #Nested tuples
```

```
[19]: tup6 = (100, 'Mandeep', 17.765) #Tuple of mixed data type
```

```
[21]: tup7 = ('Mandeep', 25,[50,100],[150, 90], {'John' , 'David'} , (99,22,33))
```

```
[24]: len(tup7) #Length of List
```

```
[24]: 6
```

Tuple Indexing

```
[27]: tup2[0] #Retreive first element of the tuple
```

```
[27]: 10
```

```
[29]: tup4[0]
```

```
[29]: 'one'
```

```
[33]: tup4[0][0] #Nested indexing- Access the first tuple element
```

```
[33]: 'o'
```

```
[41]: tup4[-1] #Last item of the tuple
```

```
[41]: 'three'
```

```
[43]: tup5[-1] #Last item of the tuple
```

```
[43]: (150, 90)
```

TUPLE Slicing

```
[46]: mytuple = ('one' , 'two' , 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
[48]: mytuple[0:3] #Return all items from 0th to 3rd index location excluding the item
```

```
[48]: ('one', 'two', 'three')
```

```
[50]: mytuple[2:5]
```

```
[50]: ('three', 'four', 'five')
```

```
[54]: mytuple[:3] # Return first three items
```

```
[54]: ('one', 'two', 'three')
```

```
[56]: mytuple[:2]
```

```
[56]: ('one', 'two')
```

```
[60]: mytuple[-3:] #Return Last three items
```

```
[60]: ('six', 'seven', 'eight')
```

```
[64]: mytuple[-2:] #Return last two items
```

```
[64]: ('seven', 'eight')
```

```
[66]: mytuple[-1] #Return Last item of the tuple
```

```
[66]: 'eight'
```

```
[68]: mytuple[:] #Return whole tuple
```

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

Remove & Change Items

```
[71]: mytuple
```

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

```
[73]: del mytuple[0] #Tuple are immutable which means we can't Delete tuple items
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[73], line 1
----> 1 del mytuple[0]

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

```
[77]: mytuple[0] = 1 #Tuple are immutable which means we can't CHANGE tuple items
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[77], line 1
----> 1 mytuple[0] = 1

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

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

Loop Through a Tuple

```
[92]: mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
      mytuple
```

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

```
[94]: for i in mytuple:
          print(i)
```

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

```
[96]: 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

```
[99]: mytuple
```

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

```
[103]: 'one' in mytuple #check if one exist in the list
```

[103]: True

[107]: `'ten' in mytuple #check if ten exist in the list`

[107]: False

[109]:
```python
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

[111]:
```python
if 'eleven' in mytuple:   #check if 'eleven' exist in the list
    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

[114]: `mytuple`

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

[116]: `mytuple.index('one')`

[116]: 0

[118]: `mytuple.index('five')`

[118]: 4

[122]:
```python
mytuple1 = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
mytuple1
```

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

[124]: `mytuple1.index('one')`

[124]: 0

Sorting

[127]: `mytuple2 = (43,67,99,12,6,90,67)`

[131]: `sorted(mytuple2) #Return a new sorted list and doesn't change original tuple`

[131]: `[6, 12, 43, 67, 67, 90, 99]`

```
[133]: sorted(mytuple2, reverse=True) #Sort in descending order
```

```
[133]: [99, 90, 67, 67, 43, 12, 6]
```