

In []: *# Tuple Vs List:*

```
List using square bracket []
tuple parentheses ()

list is mutable
tuple is the immutable

list is slower than tuple
```

In [4]:

```
my_tuple = ()
print(my_tuple)

my_tuple = (1,2,3,4)
print(my_tuple)

my_tuple = (1,2,3,4,"john",20.5,[23,45,67],(2,3,4,5))
print(my_tuple)

()
(1, 2, 3, 4)
(1, 2, 3, 4, 'john', 20.5, [23, 45, 67], (2, 3, 4, 5))
```

In [10]:

```
my_tuple2 = "a","b","c","d"
print(my_tuple2)

my_tuple2 = ("a",)
print(type(my_tuple2))

('a', 'b', 'c', 'd')
<class 'tuple'>
```

Access the tuple elements

In []:

```
# Forward indexing or positive indexing (right to left)

0,1,2,3,4,5,6,7,8,.....

# Backward indexing or Negative indexing (left to right)
-1,-2,-3,-4,-5.....
```

```
In [16]: my_tuple_val = ("P","y","t","h","o","n")

print(my_tuple_val[0])

print(my_tuple_val[5])

print(my_tuple_val[-1])

print(my_tuple_val[-6])
```

P
n
n
P

```
In [ ]: ## Slicing

tuple[start:stop:step]
#-----
tuple[start:]
tuple[start:stop]
tuple[:stop]
tuple[:]
```

```
In [17]: my_tuple_val
```

```
Out[17]: ('P', 'y', 't', 'h', 'o', 'n')
```

```
In [18]: my_tuple_val[0:6]
```

```
Out[18]: ('P', 'y', 't', 'h', 'o', 'n')
```

```
In [19]: my_tuple_val[:6]
```

```
Out[19]: ('P', 'y', 't', 'h', 'o', 'n')
```

```
In [20]: my_tuple_val[0:]
```

```
Out[20]: ('P', 'y', 't', 'h', 'o', 'n')
```

```
In [21]: my_tuple_val[:]
```

```
Out[21]: ('P', 'y', 't', 'h', 'o', 'n')
```

```
In [23]: my_tuple_val[::-1]
```

```
Out[23]: ('n', 'o', 'h', 't', 'y', 'P')
```

Tuple Operations

```
In [25]: mytup = (1,2,3,4,5)
         #mytup[0]=1 # can not pass this operation
```

```
In [29]: mytup1 = (1,2,3,4,5)

         print(mytup + mytup1)

         print( mytup1 * 3)

(1, 2, 3, 4, 5, 1, 2, 3, 4, 5)
(1, 2, 3, 4, 5, 1, 2, 3, 4, 5, 1, 2, 3, 4, 5)
```

```
In [30]: del mytup1[0]
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[30], line 1
----> 1 del mytup1[0]

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

```
In [31]: del mytup1
```

```
In [32]: print(mytup1)
```

```
-----
NameError                                Traceback (most recent call last)
Cell In[32], line 1
----> 1 print(mytup1)

NameError: name 'mytup1' is not defined
```

Tuple built in Function

```
In [36]: t1 = (13,2,43,4,61,33,22,67)

         print(len(t1))
         print(min(t1))
         print(max(t1))
         print(sorted(t1))

8
2
67
[2, 4, 13, 22, 33, 43, 61, 67]
```

```
In [37]: lst = [1,2,3,4]
         print(lst)
```

```
[1, 2, 3, 4]
```

```
In [38]: # convert list to tuple
         print(tuple(lst))
```

```
(1, 2, 3, 4)
```

```
In [46]: # Tuple Methods

         my_tuple_val = ("P","y","t","h","o","n","d","a","t","a")
         print(my_tuple_val.count("a"))
         print(my_tuple_val.index("y"))
```

```
2
```

```
1
```

```
In [50]: print("a" in my_tuple_val)
```

```
True
```

```
In [51]: print("a" not in my_tuple_val)
```

```
False
```

```
In [52]: for tup in my_tuple_val:
         print(tup)
```

```
P
```

```
y
```

```
t
```

```
h
```

```
o
```

```
n
```

```
d
```

```
a
```

```
t
```

```
a
```

```
In [ ]:
```