

4th -- TUPLE () & RANGE()

```
In [1]: t=()  
t
```

Out[1]: ()

```
In [2]: type(t)
```

Out[2]: tuple

```
In [3]: t=(10,20,30)  
t
```

Out[3]: (10, 20, 30)

```
In [4]: len(t)
```

Out[4]: 3

```
In [5]: t1 = (10,2.3,'nit',1+2j,True,10,20)  
t1
```

Out[5]: (10, 2.3, 'nit', (1+2j), True, 10, 20)

```
In [6]: print(t)  
print(t1)
```

(10, 20, 30)  
(10, 2.3, 'nit', (1+2j), True, 10, 20)

```
In [7]: t.count(10)
```

Out[7]: 1

```
In [9]: t1.count(2.3)
```

Out[9]: 1

```
In [10]: t1.index(2.3)
```

Out[10]: 1

```
In [11]: t
```

Out[11]: (10, 20, 30)

```
In [12]: t[0]
```

Out[12]: 10

```
In [13]: t[0]=100
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[13], line 1  
----> 1 t[0]=100  
  
TypeError: 'tuple' object does not support item assignment
```

```
In [15]: icici = (123466, 'cizps6789y', 'dob-3rd mar 1987', 'mob:1234')  
icici
```

```
Out[15]: (123466, 'cizps6789y', 'dob-3rd mar 1987', 'mob:1234')
```

```
In [16]: icici[0] = 987645
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[16], line 1  
----> 1 icici[0] = 987645  
  
TypeError: 'tuple' object does not support item assignment
```

```
In [17]: t
```

```
Out[17]: (10, 20, 30)
```

```
In [18]: t2 = t*3  
t2
```

```
Out[18]: (10, 20, 30, 10, 20, 30, 10, 20, 30)
```

```
In [19]: t2
```

```
Out[19]: (10, 20, 30, 10, 20, 30, 10, 20, 30)
```

```
In [20]: t1
```

```
Out[20]: (10, 2.3, 'nit', (1+2j), True, 10, 20)
```

```
In [21]: t1[1:6]
```

```
Out[21]: (2.3, 'nit', (1+2j), True, 10)
```

```
In [22]: t2
```

```
Out[22]: (10, 20, 30, 10, 20, 30, 10, 20, 30)
```

```
In [23]: t2[1:6:3]
```

```
Out[23]: (20, 20)
```

```
In [24]: t2
```

Out[24]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

In [25]: t2

Out[25]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

In [26]: t1

Out[26]: (10, 2.3, 'nit', (1+2j), True, 10, 20)

In [27]: t1[:]

Out[27]: (10, 2.3, 'nit', (1+2j), True, 10, 20)

In [28]: t1

Out[28]: (10, 2.3, 'nit', (1+2j), True, 10, 20)

In [29]: t1[::-1]

Out[29]: (20, 10, True, (1+2j), 'nit', 2.3, 10)

In [30]: t2

Out[30]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

In [31]: t2[::-2]

Out[31]: (30, 10, 20, 30, 10)

In [32]: t2

Out[32]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

In [33]: t2[::-3]

Out[33]: (30, 30, 30)

In [34]: t2

Out[34]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

In [35]: t2[::2]

Out[35]: (10, 30, 20, 10, 30)

In [36]: t=(1,2,3,4,5,6,7,8)  
t

Out[36]: (1, 2, 3, 4, 5, 6, 7, 8)

```
In [37]: t[3:-1]
```

```
Out[37]: (4, 5, 6, 7)
```

```
In [38]: t
```

```
Out[38]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [39]: t[1:4]
```

```
Out[39]: (2, 3, 4)
```

```
In [40]: t
```

```
Out[40]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [41]: t[1:]
```

```
Out[41]: (2, 3, 4, 5, 6, 7, 8)
```

```
In [42]: t
```

```
Out[42]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [43]: t[:5]
```

```
Out[43]: (1, 2, 3, 4, 5)
```

```
In [44]: t
```

```
Out[44]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [45]: t[1:7:3]
```

```
Out[45]: (2, 5)
```

```
In [46]: t
```

```
Out[46]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [47]: t[::-1]
```

```
Out[47]: (8, 7, 6, 5, 4, 3, 2, 1)
```

```
In [48]: t[::1]
```

```
Out[48]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [49]: t
```

```
Out[49]: (1, 2, 3, 4, 5, 6, 7, 8)
```

```
In [50]: t[::-3]
```

```
Out[50]: (8, 5, 2)
```

```
In [51]: for i in t:  
         print(i)
```

```
1  
2  
3  
4  
5  
6  
7  
8
```

```
In [52]: for i in enumerate(t1):  
         print(i)
```

```
(0, 10)  
(1, 2.3)  
(2, 'nit')  
(3, (1+2j))  
(4, True)  
(5, 10)  
(6, 20)
```

tupel we are completed

```
In [53]: range()
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[53], line 1  
----> 1 range()  
  
TypeError: range expected at least 1 argument, got 0
```

```
In [54]: range(5)
```

```
Out[54]: range(0, 5)
```

```
In [55]: list(range(5))
```

```
Out[55]: [0, 1, 2, 3, 4]
```

```
In [56]: range(10,20)
```

```
Out[56]: range(10, 20)
```

```
In [57]: list(range(10,20))
```

```
Out[57]: [10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

```
In [58]: range(10,50,5)
```

```
Out[58]: range(10, 50, 5)
```

```
In [59]: list(range(10,50,5))
```

```
Out[59]: [10, 15, 20, 25, 30, 35, 40, 45]
```

```
In [60]: range(10,50,5,1)
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[60], line 1  
----> 1 range(10,50,5,1)  
  
TypeError: range expected at most 3 arguments, got 4
```

```
In [ ]:
```