

string list slicing (data type)

```
In [9]: s1='nit'  
s1
```

```
Out[9]: 'nit'
```

```
In [11]: s1[0]
```

```
Out[11]: 'n'
```

```
In [13]: s1
```

```
Out[13]: 'nit'
```

```
In [15]: s1[1]
```

```
Out[15]: 'i'
```

```
In [17]: s1[2]
```

```
Out[17]: 't'
```

```
In [110... s1[3]
```

```
Out[110... 'i'
```

```
In [113... s1[4]
```

```
-----  
IndexError                                Traceback (most recent call last)  
Cell In[113], line 1  
----> 1 s1[4]  
  
IndexError: string index out of range
```

```
In [115... s1
```

```
Out[115... 'mahi'
```

```
In [114... for i in s1:  
          print(i)
```

```
m  
a  
h  
i
```

list slicing

```
In [117... print(l)  
          print(l2)  
          print(l3)  
          print(l4)
```

```
[10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
[10, 15, 20, 30, 40, 2.3, 1]
[100, 50, 10, 0, 0]
[10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10, 100]
```

```
In [4]: l=[10,20,30,35,40,3,10,15,20,30,40,2.3,1]
        l
```

```
Out[4]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [5]: l[0:8] #elements upto 0 to 8th
```

```
Out[5]: [10, 20, 30, 35, 40, 3, 10, 15]
```

```
In [6]: l
```

```
Out[6]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [7]: l[:7]
```

```
Out[7]: [10, 20, 30, 35, 40, 3, 10]
```

```
In [8]: l
```

```
Out[8]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [11]: l[0:20:5]
```

```
Out[11]: [10, 3, 40]
```

```
In [12]: l
```

```
Out[12]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [13]: l[3:10:3]
```

```
Out[13]: [35, 10, 30]
```

```
In [17]: l
```

```
Out[17]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [20]: l[::-1] #n-1 from backward
```

```
Out[20]: [1, 2.3, 40, 30, 20, 15, 10, 3, 40, 35, 30, 20, 10]
```

```
In [21]: l
```

```
Out[21]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]
```

```
In [22]: l[::-2] #n-2 from backward
```

```
Out[22]: [1, 40, 20, 10, 40, 30, 10]
```

```
In [23]: l
```

Out[23]: [10, 20, 30, 35, 40, 3, 10, 15, 20, 30, 40, 2.3, 1]

In [24]: `l[::-3] #n-3 from backward`

Out[24]: [1, 30, 10, 35, 10]

In [36]: `l1=[40,30,20,15,10,2.3,1]`
l1

Out[36]: [40, 30, 20, 15, 10, 2.3, 1]

In [37]: `l1[0]=7 # list is mutable or hashable or changable or replace`

In [41]: `s1='mahi' #string`

In [42]: s1

Out[42]: 'mahi'

In [50]: `l1=[40,30,20,15,10,2.3,1]`
l1

Out[50]: [40, 30, 20, 15, 10, 2.3, 1]

In [51]: `l1[0]=7 # list is mutable or hashable or changable or replace`

In [52]: l1

Out[52]: [7, 30, 20, 15, 10, 2.3, 1]

In [53]: `l1[0]`

Out[53]: 7

In [55]: `l1[0]=45 #replace index element`

In [56]: l1

Out[56]: [45, 30, 20, 15, 10, 2.3, 1]

In [58]: `l1[-1]='mahi' #replace index element`

In [59]: l1

Out[59]: [45, 30, 20, 15, 10, 2.3, 'mahi']

In [60]: `l1[-1][0] #nested slicing`

Out[60]: 'm'

In [118... `l1[-1][1] #nested slicing`

Out[118... 'a'

In [119... `l1[-1][2] #nested slicing`

Out[119... 'h'

In [120... `l1[-1][3]` *#nested slicing*

Out[120... 'i'

```
In [61]: print(l1[-1][0])
         print(l1[-1][1])
         print(l1[-1][2])
         print(l1[-1][3])
```

m
a
h
i

In [62]: `l1`

Out[62]: `[45, 30, 20, 15, 10, 2.3, 'mahi']`

In [63]: `l2=[10,15,20,30,40,2.3,1]`

In [64]: `l2`

Out[64]: `[10, 15, 20, 30, 40, 2.3, 1]`

In [65]: `len(l2)`

Out[65]: `7`

In [66]: `l3=[100,50,10]`

In [67]: `l3`

Out[67]: `[100, 50, 10]`

In [68]: `l4=l2+l3`

In [69]: `l4`

Out[69]: `[10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10]`

In [70]: `100 in l4`

Out[70]: `True`

In [71]: `2.3 in l4`

Out[71]: `True`

In [72]: `99 in l4`

Out[72]: `False`

ENumerate

```
In [77]: l1
```

```
Out[77]: [45, 30, 20, 15, 10, 2.3, 'mahi']
```

```
In [82]: for i in l1:  
         print(i)
```

```
45  
30  
20  
15  
10  
2.3  
mahi
```

```
In [83]: for i in enumerate(l1):  
         print(i)
```

```
(0, 45)  
(1, 30)  
(2, 20)  
(3, 15)  
(4, 10)  
(5, 2.3)  
(6, 'mahi')
```

```
In [84]: l1
```

```
Out[84]: [45, 30, 20, 15, 10, 2.3, 'mahi']
```

```
In [85]: l2
```

```
Out[85]: [10, 15, 20, 30, 40, 2.3, 1]
```

```
In [86]: l3
```

```
Out[86]: [100, 50, 10]
```

```
In [87]: l4
```

```
Out[87]: [10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10]
```

```
In [88]: all(l1)
```

```
Out[88]: True
```

```
In [89]: all(l2)
```

```
Out[89]: True
```

```
In [90]: all(l3)
```

```
Out[90]: True
```

```
In [91]: any(l3)
```

```
Out[91]: True
```

```
In [93]: 13.append(0)
13
```

```
Out[93]: [100, 50, 10, 0, 0]
```

```
In [94]: 14.append(100) #adding element at last
14
```

```
Out[94]: [10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10, 100]
```

```
In [95]: all(13)
```

```
Out[95]: False
```

```
In [96]: any(13)
```

```
Out[96]: True
```

list membership

```
In [97]: 14
```

```
Out[97]: [10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10, 100]
```

```
In [106... 10 in (14) #recognising the element by true or false
```

```
Out[106... True
```

```
In [107... 14
```

```
Out[107... [10, 15, 20, 30, 40, 2.3, 1, 100, 50, 10, 100]
```

```
In [108... 15 in (14)
```

```
Out[108... True
```

```
In [109... 99 in (14)
```

```
Out[109... False
```

```
In [ ]:
```