

```
In [2]: txt = " abc def ghi"
        txt.lstrip()
```

```
Out[2]: 'abc def ghi'
```

```
In [4]: txt = " jkl mno pqr"
        txt.strip()
```

```
Out[4]: 'jkl mno pqr'
```

## Using escape character

```
In [7]: mystr = "My favourite movie i"HarryPotter""
```

Cell In[7], line 1

```
    mystr = "My favourite movie i"HarryPotter""
                                   ^
```

**SyntaxError:** invalid syntax

```
In [9]: mystr = "My favourite movie is \"Harry potter\""
        print(mystr)
```

My favourite movie is "Harry potter"

## List

### List creation

```
In [20]: list1 = []
```

```
In [22]: print(type(list1))
```

<class 'list'>

```
In [24]: list2 = [10,20,30]
```

```
In [26]: list3 = [10.10,10.50,15.66]
```

```
In [28]: list4 = ['one','two','three']
```

```
In [32]: list5 = ['Rohit', 20,[7, 20],[25, 55]]
```

```
In [34]: list6 = [100, 'Rohit',15.48]
```

```
In [36]: list7 = ['Rohit', 25,[50, 25],[100, 90], {'Peter', 'Parker'}]
```

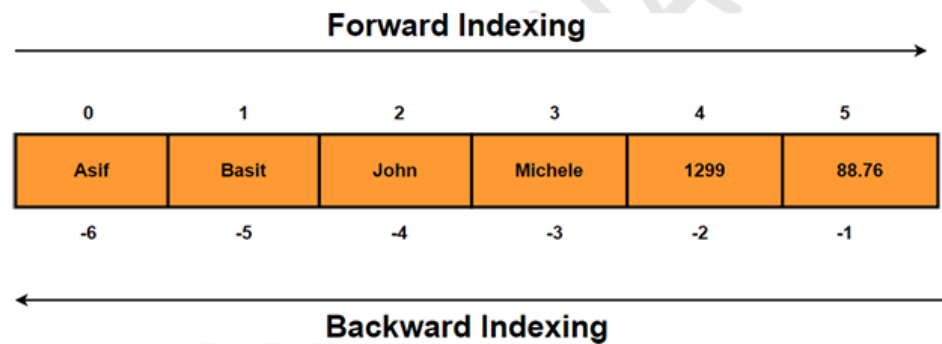
```
In [38]: len(list6)
```

```
Out[38]: 3
```

```
In [40]: len(list7)
```

```
Out[40]: 5
```

## List Indexing



```
In [44]: list2[0]
```

```
Out[44]: 10
```

```
In [46]: list4[0]
```

```
Out[46]: 'one'
```

```
In [48]: list4[0][0]
```

```
Out[48]: 'o'
```

```
In [50]: list4[-1]
```

```
Out[50]: 'three'
```

```
In [52]: list5[-1]
```

```
Out[52]: [25, 55]
```

## list slicing

```
In [148... mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [57]: mylist[0:3]
```

```
Out[57]: ['one', 'two', 'three']
```

```
In [59]: mylist[2:5]
```

```
Out[59]: ['three', 'four', 'five']
```

```
In [61]: mylist[:3]
```

```
Out[61]: ['one', 'two', 'three']
```

```
In [63]: mylist[:2]
```

```
Out[63]: ['one', 'two']
```

```
In [114... mylist[-3:]
```

```
Out[114... ['six', 'seven', 'eight']
```

```
In [67]: mylist[-2:]
```

```
Out[67]: ['seven', 'eight']
```

```
In [150... mylist[:]
```

```
Out[150... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

## Add Remove & Change Items

```
In [152... mylist
```

```
Out[152... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [154... mylist.append('nine')  
mylist
```

```
Out[154... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

```
In [156... mylist.insert(9, 'ten')  
mylist
```

```
Out[156... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [158... mylist.insert(1, 'ONE')  
mylist
```

```
Out[158... ['one',  
            'ONE',  
            'two',  
            'three',  
            'four',  
            'five',  
            'six',  
            'seven',  
            'eight',  
            'nine',  
            'ten']
```

```
In [160... mylist.remove('ONE')  
mylist
```

```
Out[160... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [164... mylist.pop()  
mylist
```

```
Out[164... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [166... mylist.append('nine')
```

```
In [168... mylist
```

```
Out[168... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

```
In [170... mylist.pop(8)  
mylist
```

```
Out[170... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [172... del mylist[7]  
mylist
```

```
Out[172... ['one', 'two', 'three', 'four', 'five', 'six', 'seven']
```

```
In [174... mylist[0] = 1  
mylist[1] = 2  
mylist[2] = 3  
mylist
```

```
Out[174... [1, 2, 3, 'four', 'five', 'six', 'seven']
```

```
In [176... mylist.clear()  
mylist
```

```
Out[176... []
```

```
In [178... del mylist  
mylist
```

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[178], line 2  
      1 del mylist  
----> 2 mylist  
  
NameError: name 'mylist' is not defined
```

## Copy list

```
In [28]: mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']  
mylist
```

```
Out[28]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [30]: mylist1 = mylist
```

```
In [32]: id(mylist), id(mylist1)
```

```
Out[32]: (2078345601280, 2078345601280)
```

```
In [34]: mylist2= mylist.copy()
```

```
In [36]: mylist2
```

```
Out[36]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [38]: id(mylist2)
```

```
Out[38]: 2078345729344
```

```
In [40]: mylist[0]=1  
mylist
```

```
Out[40]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [42]: mylist
```

```
Out[42]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [44]: mylist1
```

```
Out[44]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [46]: mylist2
```

```
Out[46]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```
In [50]: id(mylist1)==id(mylist)
```

```
Out[50]: True
```

```
In [52]: id(mylist)==id(mylist2)
```

```
Out[52]: False
```

## join Lists

```
In [80]: list1 = ['one', 'two', 'three', 'four']  
list2 = ['five', 'six', 'seven', 'eight']
```

```
In [82]: list3 = list1 + list2  # Join two lists by + operator  
list3
```

```
Out[82]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [84]: list1.extend(list2) # Append list2 with list1  
list1
```

```
Out[84]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

# List Membership

```
In [86]: list1
```

```
Out[86]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [65]: 'one' in list1
```

```
Out[65]: True
```

```
In [67]: 'four' in list1
```

```
Out[67]: True
```

```
In [69]: 'ten' in list1
```

```
Out[69]: False
```

```
In [71]: if 'three' in list1:
          print('Three is present in the list')
        else:
          print('Three is not present in the list')
```

Three is present in the list

```
In [73]: if 'nine' in list1:
          print('Nine is present in the list')
        else:
          print('Nine is not present in the list')
```

Nine is not present in the list

# Reverse and Sort List

```
In [88]: list1
```

```
Out[88]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [90]: list1.reverse() # Reverse the list
list1
```

```
Out[90]: ['eight', 'seven', 'six', 'five', 'four', 'three', 'two', 'one']
```

```
In [92]: list1 = list1[::-1] # Reverse the list
list1
```

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

```
In [94]: list3 = [20,10,2,5,1,50,99]
list3.sort() # Sort list in ascending order
list3
```

```
Out[94]: [1, 2, 5, 10, 20, 50, 99]
```

```
In [98]: list4 = [2,15,5,4,88,57,7,66]
list4.sort(reverse=True)    # Sort list in descending order
list4
```

```
Out[98]: [88, 66, 57, 15, 7, 5, 4, 2]
```

```
In [100... list5 = [88,55,10,15,25,11,5]
sorted(list5)
```

```
Out[100... [5, 10, 11, 15, 25, 55, 88]
```

```
In [102... list3
```

```
Out[102... [1, 2, 5, 10, 20, 50, 99]
```

## Loop through a list

```
In [105... list1
```

```
Out[105... ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [107... for i in list1:
            print(i)
```

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

```
In [109... for i in enumerate(list1):
            print(i)
```

```
(0, 'one')
(1, 'two')
(2, 'three')
(3, 'four')
(4, 'five')
(5, 'six')
(6, 'seven')
(7, 'eight')
```

## Count

```
In [112... list10 = ['one', 'two', 'three', 'four', 'one', 'two', 'two', 'three']
```

```
In [114... list10.count('one')
```

```
Out[114... 2
```

```
In [116... list10.count('two')
```

Out[116... 3

In [118... `list10.count('four')`

Out[118... 1

In [120... `list11 = [1,2,3,4,5,1,1,2,4,]`

In [122... `list11.count(1)`

Out[122... 3

## All/Any

The `all()` method returns:

- True - If all elements in list are true
- False - If any element in a list is false

The `any()` function returns True if any element in the list is True. If not `any()` returns False.

In [132... `L1 = [1,2,3,4,0]`

In [134... `all(L1)` *# Will return false as one value is false (value 0)*

Out[134... False

In [136... `any(L1)` *# Will return True as we have items in the list with True value*

Out[136... True

In [138... `L2 = [1,2,3,4,True,False]`

In [140... `all(L2)` *# Will return false as one value is false*

Out[140... False

In [142... `any(L2)`

Out[142... True

In [144... `L3 = [1,2,3,True]`

In [146... `all(L3)`

Out[146... True

In [ ]: