List creation

```
In [2]: list1 = []
```

```
In [3]: print(type(list1))
```

```
<class 'list'>
```

```
In [4]: list2 = [10, 20, 30]
```

```
In [5]: list3 = [10.77, 30.66, 60.89]
```

```
In [6]: list4 = ['one','two',"three"]
```

```
In [7]: list5 = ['nilu',25,[50,100],[150,90]]
```

```
In [8]: list6 = [100, 'nilu', 17.765]
```

```
In [9]: list7 = ['nilu', 25, [50,100],[150,90],{'san','sanku'}]
```

```
In [10]: len(list6)
```

```
Out[10]: 3
```

List indexing

```
In [11]: list2[0]
```

```
Out[11]: 10
```

```
In [12]: list4[0]
```

```
Out[12]: 'one'
```

```
In [13]: list4[0][0]
```

```
Out[13]: 'o'
```

```
In [14]: list4[-1]
```

```
Out[14]: 'three'
```

```
In [15]: list5[-1]
```

```
Out[15]: [150, 90]
```

List slicing

```
In [16]: mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

```
In [17]: mylist[0:3]
```

```
Out[17]: ['one', 'two', 'three']
```

```
In [18]: mylist[2:5]
```

```
Out[18]: ['three', 'four', 'five']
```

```
In [19]: mylist[:3]
```

```
Out[19]: ['one', 'two', 'three']
```

```
In [20]: mylist[:2]
```

```
Out[20]: ['one', 'two']
```

```
In [21]: mylist[-3:]
```

```
Out[21]: ['six', 'seven', 'eight']
```

```
In [22]: mylist[-2:]
```

```
Out[22]: ['seven', 'eight']
```

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

Out[23]:
```
'eight'
```

In [24]:
```
mylist[:]
```

Out[24]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

Add, Remove & change items

In [26]:
```
mylist
```

Out[26]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [27]:
```
mylist.append('nine')
mylist
```

Out[27]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [29]:
```
mylist.insert(9,'ten')
mylist
```

Out[29]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten',
 'ten']
```

In [31]:
```
mylist.insert(1,'ONE')
mylist
```

Out[31]:
```
['one',
 'ONE',
 'ONE',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten',
 'ten']
```

In [32]:
```
mylist.remove('ONE')
mylist
```

Out[32]:
```
['one',
 'ONE',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten',
 'ten']
```

In [33]:
```
mylist.pop()
mylist
```

Out[33]:
```
['one',
 'ONE',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten']
```

In [34]:
```
mylist.pop(8)
mylist
```

Out[34]: ['one', 'ONE', 'two', 'three', 'four', 'five', 'six', 'seven', 'nine', 'ten']

In [35]:
```
del mylist[7]
mylist
```

Out[35]: ['one', 'ONE', 'two', 'three', 'four', 'five', 'six', 'nine', 'ten']

In [36]:
```
mylist[0]=1
mylist[1]=2
mylist[2]=3
mylist
```

Out[36]: [1, 2, 3, 'three', 'four', 'five', 'six', 'nine', 'ten']

In [37]:
```
mylist.clear()
mylist
```

Out[37]: []

In [38]:
```
del mylist
mylist
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[38], line 2
      1 del mylist
----> 2 mylist

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

Copy List

In [39]:
```
mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [40]:
```
mylist1 = mylist
```

In [41]:
```
id(mylist) , id(mylist1)
```

Out[41]: (2522933237184, 2522933237184)

In [42]:
```
mylist2 = mylist.copy()
```

In [43]:
```
id(mylist2)
```

Out[43]: 2522933401536

In [44]:
```
mylist[0] = 1
```

In [45]:
```
mylist
```

Out[45]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

In [46]:
```
mylist1
```

Out[46]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

In [47]:
```
mylist2
```

Out[47]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

Join Lists

In [48]:
```
list1 = ['one', 'two', 'three', 'four']
list2 = ['five', 'six', 'seven', 'eight']
```

In [49]:
```
list3 = list1 + list2
list3
```

Out[49]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']

In [51]:
```
list1.extend(list2)
list1
```

Out[51]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

List Membership

In [52]:
```
list1
```

Out[52]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [53]:
```
'one' in list1
```

Out[53]: True

In [54]:
```
'ten' in list1
```

Out[54]: False

In [55]:
```
if 'three' in list1:
    print('three is present in the list')
else:
    print('three is not in list')
```

```
three is present in the list
```

In [56]:
```
if 'eleven' in list1:
    print('eleven is present in list1')
else:
    print('eleven is not present in list')
```

```
eleven is not present in list
```

Reverse & Sort List

In [57]:
```
list1
```

Out[57]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [58]:
```
list1.reverse()
list1
```

Out[58]:
```
['eight',
 'seven',
 'six',
 'five',
 'eight',
 'seven',
 'six',
 'five',
 'four',
 'three',
 'two',
 'one']
```

In [59]:
```
list1 = list1[::-1]
list1
```

Out[59]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [61]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort()
mylist3
```

Out[61]:
```
[2, 5, 9, 12, 34, 88, 99]
```

In [63]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort(reverse=True)
mylist3
```

Out[63]:
```
[99, 88, 34, 12, 9, 5, 2]
```

In [64]:
```
mylist4 = [88, 65, 21, 11, 22, 98]
sorted(mylist4)
```

Out[64]:
```
[11, 21, 22, 65, 88, 98]
```

In [65]:
```
mylist4
```

Out[65]:
```
[88, 65, 21, 11, 22, 98]
```

Loop Through a list

In [66]:
```
list1
```

Out[66]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [68]:
```
for i in list1:
    print(i)
```

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

In [69]:
```
for i in enumerate(list1):
    print(i)
```

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

count

In [70]:
```
list10 = ['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
```

In [71]:
```
list10.count('one')
```

Out[71]: 3

In [72]:
```
list10.count('two')
```

Out[72]: 2

In [73]:
```
list10.count('four')
```

Out[73]: 1

All/Any

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

In [2]:
```
all(L1)
```

Out[2]: False

In [3]:
```
any(L1)
```

Out[3]: True

In [4]:
```
L3 = [1,2,4,True]
```

In [5]:
```
all(L3)
```

Out[5]: True

In [ ]:
```

```