LIST DATASTRUCTURES

In [2]:
```
L1=[]
```

```
L1
```

In [3]:
```
L1
```

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

In [4]:
```
print(type(L1))
```

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

In [6]:
```
l2=[10,20,30,50]
l3=[10.87,11.34,87.89]
l4=['one','two','three']
l5=['manasa',35,[50,100],[150,90]]
l6=[100,'manasa',17.78]
print(len(L1))
print(len(l2))
print(len(l3))
print(len(l4))
print(len(l5))
print(len(l6))
```

```
0
4
3
3
4
3
```

In [7]:
```
l2[0]
```

Out[7]:
```
10
```

In [8]:
```
l5[2]
```

Out[8]:
```
[50, 100]
```

In [9]:
```
l6[1]
```

Out[9]:
```
'manasa'
```

In [10]:
```
l4[0]
```

Out[10]:
```
'one'
```

In [11]:
```
l4[0][0]
```

Out[11]: 'o'

In [12]:
```
l4[-1]
```

Out[12]: 'three'

In [13]:
```
l5[-1]
```

Out[13]: [150, 90]

In [14]:
```
l2
```

Out[14]: [10, 20, 30, 50]

In [15]:
```
l3
```

Out[15]: [10.87, 11.34, 87.89]

In [16]:
```
l4
```

Out[16]: ['one', 'two', 'three']

In [17]:
```
l5
```

Out[17]: ['manasa', 35, [50, 100], [150, 90]]

In [18]:
```
l6
```

Out[18]: [100, 'manasa', 17.78]

In [19]:
```
mylist=['one','two','three','four','five','six','seven','eight']
mylist
```

Out[19]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']

In [20]:
```
mylist[0:4]
```

Out[20]: ['one', 'two', 'three', 'four']

In [21]:
```
mylist[2:5]
```

Out[21]: ['three', 'four', 'five']

In [22]:
```
mylist[:3]
```

Out[22]: ['one', 'two', 'three']

In [23]:
```
mylist[3:]
```

Out[23]: ['four', 'five', 'six', 'seven', 'eight']

In [24]:
```
mylist[:2]
```

Out[24]:
```
['one', 'two']
```

In [25]:
```
mylist[-1:-5]
```

Out[25]:
```
[]
```

In [26]:
```
mylist[-1:0]
```

Out[26]:
```
[]
```

In [27]:
```
mylist[-1:3]
```

Out[27]:
```
[]
```

In [28]:
```
mylist[-2:]
```

Out[28]:
```
['seven', 'eight']
```

In [29]:
```
mylist[-8:]
```

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

In [30]:
```
mylist[-1:]
```

Out[30]:
```
['eight']
```

In [31]:
```
mylist[-1]
```

Out[31]:
```
'eight'
```

In [33]:
```
mylist.append('nine')
mylist
```

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

In [34]:
```
print(mylist)
```

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

In [35]:
```
mylist(9,'ten')
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[35], line 1
----> 1 mylist(9,'ten')

TypeError: 'list' object is not callable
```

In [36]:
```
mylist.append(9,'ten')
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[36], line 1
----> 1 mylist.append(9,'ten')

TypeError: list.append() takes exactly one argument (2 given)
```

In [38]:
```
mylist.insert(1,'ONE')
```

In [40]:
```
print(mylist)
```

```
['one', 'ONE', 'ONE', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nin
e', 'nine']
```

In [41]:
```
mylist.remove('ONE')
```

In [42]:
```
print(mylist)
```

```
['one', 'ONE', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'nin
e']
```

In [43]:
```
mylist.pop()
```

Out[43]: 'nine'

In [44]:
```
mylist.pop(7)
```

Out[44]: 'seven'

In [48]:
```
del mylist[1]
print(mylist)
```

```
['one', 'five', 'six', 'eight', 'nine']
```

In [50]:
```
mylist.insert(1,'two')
print(mylist)
```

```
['one', 'two', 'two', 'five', 'six', 'eight', 'nine']
```

In [51]:
```
mylist.pop(2)
```

Out[51]: 'two'

In [52]:
```
mylist
```

Out[52]: ['one', 'two', 'five', 'six', 'eight', 'nine']

In [53]:
```
mylist.insert(2,'three')
mylist
```

Out[53]:
```
['one', 'two', 'three', 'five', 'six', 'eight', 'nine']
```

In [55]:
```
mylist.insert(3,'four')
mylist
```

Out[55]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'eight', 'nine']
```

In [56]:
```
mylist.insert(6,'seven')
mylist
```

Out[56]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [57]:
```
mylist1=mylist
mylist1
```

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

In [58]:
```
id(mylist1)==id(mylist)
```

Out[58]:
```
True
```

In [59]:
```
id(mylist1)
```

Out[59]:
```
2123086822144
```

In [60]:
```
mylist2=mylist.copy()
mylist2
```

Out[60]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [61]:
```
id(mylist2)
```

Out[61]:
```
2123088820480
```

In [62]:
```
id(mylist1)
```

Out[62]:
```
2123086822144
```

In [63]:
```
id(mylist1)==id(mylist2)
```

Out[63]:
```
False
```

In [64]:
```
mylist
```

Out[64]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [65]:
```
mylist[0]
```

Out[65]: 'one'

In [66]:
```
mylist1
```

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

In [67]:
```
mylist2
```

Out[67]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

JOIN LISTS

In [68]:
```
l1=['one','two','three','four']
l2=['five','six','seven','eight']
l3=l1+l2
print(l3)
```

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

In [70]:
```
l1.extend(l2)
```

In [71]:
```
l1
```

Out[71]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [72]:
```
print(l1)
```

['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'five', 'six', 'sev
en', 'eight']

LIST MEMBERSHIP

In [73]:
```
'five' in l1
```

Out[73]: True

In [74]:
```
'ten' in l1
```

Out[74]: False

REVERSE AND SORT

In [75]:
```
l1
```

Out[75]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [76]:
```
print(l1)
```

```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'five', 'six', 'sev
en', 'eight']
```

In [77]:
```
l1.remove('five')
l1
```

Out[77]:
```
['one',
 'two',
 'three',
 'four',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [78]:
```
l1.insert(4,'five')
l1
```

Out[78]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [79]:
```
l1.pop(6)
```

Out[79]: 'seven'

In [80]:
```
l1
```

Out[80]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'eight',
 'five',
 'six',
 'seven',
 'eight']
```

In [81]:
```
print(l1)
```

```
['one', 'two', 'three', 'four', 'five', 'six', 'eight', 'five', 'six', 'seven', 'eig
ht']
```

In [82]:
```
l1.reverse()
```

In [83]:
```
l1
```

Out[83]:
```
['eight',
 'seven',
 'six',
 'five',
 'eight',
 'six',
 'five',
 'four',
 'three',
 'two',
 'one']
```

In [84]:
```
l2=[3,5,78,98,76,87,34,90]
l1.sort()
```

In [85]:
```
l2.sort()
l2
```

Out[85]: [3, 5, 34, 76, 78, 87, 90, 98]

In [86]:
```
l2.sort(reverse=True)
l2
```

Out[86]: [98, 90, 87, 78, 76, 34, 5, 3]

In [87]:
```
print(l1)
```

```
['eight', 'eight', 'five', 'five', 'four', 'one', 'seven', 'six', 'six', 'three', 't
wo']
```

In [88]:
```
for i in l1:
    print(i)
```

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

In [95]:
```
 for i in enumerate(l1) :
 print(i)
```

```
  Cell In[95], line 2
    print(i)
    ^
IndentationError: expected an indented block after 'for' statement on line 1
```

In [96]:
```
l1.count('six')
l1
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[96], line 1
----> 1 l1.count(six)

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

In [97]:
```
l1
```

Out[97]:
```
['eight',
 'eight',
 'five',
 'five',
 'four',
 'one',
 'seven',
 'six',
 'six',
 'three',
 'two']
```

In [98]:
```
l1.count('six')
```

Out[98]:
```
2
```

In [99]:
```
l1=[1,2,3,4,0]
all(l1)
```

Out[99]:
```
False
```

In [100…
```
any(l1)
```

Out[100…
```
True
```

In [ ]:
```

```