List

List Creation

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

In [2]:
```
print(type(list1))
```

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

In [3]:
```
list2=[10,30,60]
```

In [4]:
```
list3=[10.77,30.66,60.89]
```

In [5]:
```
list4=['one','two','three']
```

In [6]:
```
list5= ['Asif', 25 ,[50, 100],[150, 90]]
```

In [7]:
```
list6 = [100, 'Asif', 17.765]
```

In [8]:
```
list7 = ['Asif', 25 ,[50, 100],[150, 90]]
```

In [9]:
```
len(list6)
```

Out[9]:
```
3
```

In [10]:
```
list2[0]
```

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

In [11]:
```
list5[0]
```

Out[11]:
```
'Asif'
```

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

Out[12]:
```
'o'
```

In [13]:
```
list4[-1]
```

Out[13]:
```
'three'
```

In [14]:
```
list5[-1]
```

Out[14]:
```
[150, 90]
```

List slicing

In [15]:
```
mylist= ['one' , 'two' , 'three' , 'four' , 'five' , 'six' , 'seven' , 'eight']
```

In [16]:
```
mylist[0:3]
```

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

In [17]:
```
mylist[2:5]
```

Out[17]:
```
['three', 'four', 'five']
```

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

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

In [19]:
```
mylist[5:]
```

Out[19]:
```
['six', 'seven', 'eight']
```

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

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

In [21]:
```
mylist[-4:]
```

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

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

Out[22]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

Add,Remove & Change Items

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

Out[23]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [24]:
```
mylist.append('nine')
mylist
```

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

In [25]:
```
mylist.insert(9,'ten')
mylist
```

Out[25]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

In [26]:
```
mylist.insert(1,'ONE')
mylist
```

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

In [27]:
```
mylist.remove('ONE')
mylist
```

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

In [28]:
```
mylist.pop()
mylist
```

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

In [29]:
```
mylist.pop(8)
mylist
```

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

In [30]:
```
del mylist[7]
mylist
```

Out[30]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven']
```

In [31]:
```
mylist[0] = 1
mylist[1] = 2
mylist[2] = 3
mylist
```

Out[31]:
```
[1, 2, 3, 'four', 'five', 'six', 'seven']
```

In [32]:
```
mylist.clear()
mylist
```

Out[32]:
```
[]
```

In [33]:
```
del mylist
mylist
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[33], line 2
      1 del mylist
----> 2 mylist

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

Copy List

In [34]:
```
mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [35]:
```
mylist1 = mylist
```

In [36]:
```
id(mylist),id(mylist)
```

Out[36]: (1666757299648, 1666757299648)

In [37]:
```
mylist2 = mylist.copy()
```

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

Out[38]: 1666757276992

In [39]:
```
mylist[0] = 1
```

In [40]:
```
mylist
```

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

In [41]:
```
mylist1
```

Out[41]: [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

In [42]:
```
mylist2
```

Out[42]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

Join List

In [43]:
```
list1 = ['one', 'two', 'three', 'four']
list2 = ['five', 'six', 'seven', 'eight']
```

In [44]:
```
list3 = list1 + list2
list3
```

Out[44]: ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']

In [45]:
```
list1.extend(list2)
list1
```

Out[45]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

List Membership

In [46]:
```
list1
```

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

In [47]:
```
'one' in list1
```

Out[47]:
```
True
```

In [48]:
```
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 [49]:
```
if 'eleven' in list1:
    print('eleven is present in the list')
else:
    print('eleven is not present in the list')
```

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

Reverse and Sort List

In [50]:
```
list1
```

Out[50]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [51]:
```
list1.reverse()
list1
```

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

In [52]:
```
list1 = list1[::-1]
list1
```

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

In [54]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort()
mylist3
```

Out[54]:
```
[2, 5, 9, 12, 34, 88, 99]
```

In [55]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort(reverse=True)
mylist3
```

Out[55]:
```
[99, 88, 34, 12, 9, 5, 2]
```

In [56]:
```
mylist4 = [88,65,33,21,11,98]
sorted(mylist4)
```

Out[56]:
```
[11, 21, 33, 65, 88, 98]
```

In [57]:
```
mylist4
```

Out[57]:
```
[88, 65, 33, 21, 11, 98]
```

Loop Through a List

In [59]:
```
list1
```

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

In [60]:
```
for i in list1:
    print(i)
```

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

In [61]:
```
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 [63]:
```
list10 =['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
```

In [64]:
```
list10.count('one')
```

Out[64]: 3

In [65]:
```
list10.count('three')
```

Out[65]: 2

All/Any

In [66]:
```
l1 = [1,2,3,4,0]
```

In [67]:
```
all(l1)
```

Out[67]: False

In [68]:
```
any(l1)
```

Out[68]: True

In [69]:
```
l2 = [1,2,3,4,True,False]
```

In [70]:
```
all(l2)
```

Out[70]: False

In [71]:
```
any(l2)
```

Out[71]: True

In [72]:
```
l3 = [1,2,3,True]
```

In [73]:
```
all(l3)
```

Out[73]: True

In [ ]:
```

```