List Creation

In [42]:
```
list = []
```

In [43]:
```
print(type(list))
```

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

In [44]:
```
list1 = [10,20,30]
```

In [45]:
```
list2 = [20.77,30.66,60.89]
```

In [46]:
```
list4 = ['one','two' , "three"]
```

In [47]:
```
list5 = ['Janhavi', 25 ,[50, 100],[150, 90]]
```

In [48]:
```
list6 = [100, 'Janhavi', 17.765]
```

In [49]:
```
list7 = ['Janhavi', 25 ,[50, 100],[150, 90] , {'Janhavi' , 'Ketkii'}]
```

In [50]:
```
len(list6)
```

Out[50]:
```
3
```

In [51]:
```
len(list7)
```

Out[51]:
```
5
```

In [52]:
```
list2[0]
```

Out[52]:
```
20.77
```

In [53]:
```
list4[0]
```

Out[53]:
```
'one'
```

In [54]:
```
list4[0][0]
```

Out[54]:
```
'o'
```

In [55]:
```
list4[-1]
```

Out[55]:
```
'three'
```

In [56]:
```
list5[-1]
```

Out[56]:
```
[150, 90]
```

List Slicing

In [57]:
```
mylist = ['one' , 'two' , 'three' , 'four' , 'five' , 'six' , 'seven' , 'eight
```

In [58]:
```
mylist[0:3]
```

Out[58]:
```
['one', 'two', 'three']
```

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

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

In [60]:
```
mylist[:3]
```

Out[60]:
```
['one', 'two', 'three']
```

In [61]:
```
mylist[:2]
```

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

In [62]:
```
mylist[-3:]
```

Out[62]:
```
['six', 'seven', 'eight']
```

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

Out[63]:
```
['seven', 'eight']
```

In [64]:
```
mylist[-1]
```

Out[64]:
```
'eight'
```

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

Out[65]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

Add , Remove & Change Item

In [66]:
```
mylist
```

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

In [67]:
```
mylist.append('nine')
mylist
```

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

In [68]:
```
mylist.insert(9,'ten')
mylist
```

Out[68]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'te
n']
```

In [69]:
```
mylist.insert(1,'ONE')
mylist
```

Out[69]:
```
['one',
 'ONE',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten']
```

In [70]:
```
mylist.remove('ONE')
mylist
```

Out[70]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'te
n']
```

In [71]:
```
mylist.pop()
mylist
```

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

In [75]:
```
mylist.pop(9)
mylist
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[75], line 1
----> 1 mylist.pop(9)
      2 mylist

IndexError: pop index out of range
```

In [76]:
```
del mylist[7]
mylist
```

Out[76]:
```
[1, 2, 3, 'four', 'five', 'six', 'seven']
```

In [77]:
```
mylist[0] = 1
mylist[1] = 2
mylist[2] = 3
mylist
```

Out[77]:
```
[1, 2, 3, 'four', 'five', 'six', 'seven']
```

In [78]:
```
mylist.clear()
mylist
```

Out[78]:
```
[]
```

Copy List

In [79]:
```
mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nir
```

In [80]:
```
mylist1 = mylist
```

In [81]:
```
id(mylist) , id(mylist1)
```

Out[81]:
```
(1828198278784, 1828198278784)
```

In [82]:
```
mylist2 = mylist.copy()
```

In [83]:
```
id(mylist2)
```

Out[83]:
```
1828198018112
```

In [84]:
```
mylist[0] = 1
```

In [85]:
```
mylist
```

Out[85]:
```
[1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [86]:
```
mylist1
```

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

In [87]:
```
mylist2
```

Out[87]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

Join List

In [88]:
```
list1 = ['one', 'two', 'three', 'four']
list2 = ['five', 'six', 'seven', 'eight']
```

In [89]:
```
list3 = list1 + list2 # Join two lists by '+' operator
list3
```

Out[89]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [90]:
```
list1.extend(list2)
list1
```

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

List Membership

In [91]:
```
list1
```

Out[91]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [92]:
```
'one' in list1
```

Out[92]:
```
True
```

In [93]:
```
'ten' in list1
```

Out[93]:
```
False
```

In [94]:
```
if 'three' in list1: # Check if 'three' exist in the list
      print('Three is present in the list')
else:
      print('Three is not present in the list')
```

```
Three is present in the list
```

In [95]:
```
if 'eleven' in list1: # Check if 'eleven' exist in the list
    print('eleven is present in the list')
else:
    print('eleven is not present in the list')
```

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

Reverse & Sort Lis

In [99]:
```
list1
```

Out[99]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [100]:
```
list1.reverse()
list1
```

Out[100]:
```
['eight', 'seven', 'six', 'five', 'four', 'three', 'two', 'one']
```

In [101]:
```
list1 = list1[::-1] # Reverse the list
list1
```

Out[101]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [102]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort() # Sort list in ascending order
mylist3
```

Out[102]:
```
[2, 5, 9, 12, 34, 88, 99]
```

In [103]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort(reverse=True) # Sort list in descending order
mylist
```

Out[103]:
```
[1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [104]:
```
mylist4 = [88,65,33,21,11,98]
sorted(mylist4)
```

Out[104]:
```
[11, 21, 33, 65, 88, 98]
```

In [105]:
```
mylist4
```

Out[105]:
```
[88, 65, 33, 21, 11, 98]
```

Loop through a list

In [106]:
```
list1
```

Out[106]:
```
['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 [110]:
```
list10 =['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
```

In [111]:
```
list10.count('one')
```

Out[111]: 3

In [112]:
```
list10.count('two')
```

Out[112]: 2

In [113]:
```
list10.count('four')
```

Out[113]: 1

In [114]:
```
list10.count('seven')
```

Out[114]: 0

All/Any

In [115]:
```
L1 = [1,2,3,4,0]
```

In [116]:
```
all(L1)
```

Out[116]: False

In [117]:
```
any(L1)
```

Out[117]: True

In [118]:
```
L2 = [1,2,3,4,True,False]
```

In [119]:
```
all(L2)
```

Out[119]: False

In [121]:
```
any(L2)
```

Out[121]: True

In [122]:
```
L3 = [1,2,3,True]
```

In [123]:
```
all(L3)
```

Out[123]: True

In [124]:
```
any(L3)
```

Out[124]: True

In [125]:
```
L4 = [1,2,3,4]
```

In [126]:
```
all(L4)
```

Out[126]: True

In [127]:
```
any(L4)
```

Out[127]: True

In [ ]:
```

```