List

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] , {'John' , 'David'}]
```

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

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

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

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

In [11]:
```
list4[0]
```

Out[11]:
```
'one'
```

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

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

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

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

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

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

```
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[:3]
```

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

```
In [19]: mylist[:2]
```

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

```
In [20]: mylist[-3:]
```

```
Out[20]: ['six', 'seven', 'eight']
```

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

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

```
In [22]: mylist[-1]
```

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

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

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

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

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

In [25]:
```
mylist.append('nine') # Add an item to the end of the list
mylist
```

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

In [26]:
```
mylist.insert(9,'ten') # Add item at index location 9
mylist
```

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

In [27]:
```
mylist.insert(1,'ONE') # Add item at index location 1
mylist
```

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

In [28]:
```
mylist.remove('ONE') # Remove item "ONE"
mylist
```

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

In [29]:
```
mylist.pop() # Remove last item of the list
mylist
```

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

In [30]:
```
mylist.pop(8) # Remove item at index location 8
mylist
```

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

In [31]:
```
del mylist[7] # Remove item at index location 7
mylist
```

Out[31]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven']
```

In [32]:
```
mylist[0] = 1
mylist[1] = 2
mylist[2] = 3
mylist
```

Out[32]:
```
[1, 2, 3, 'four', 'five', 'six', 'seven']
```

In [33]:
```
mylist.clear() # Empty List / Delete all items in the list
mylist
```

Out[33]:
```
[]
```

In [34]:
```
del mylist # Delete the whole list
mylist
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[34], line 2
      1 del mylist # Delete the whole list
----> 2 mylist

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

In [36]:
```
mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [37]:
```
mylist1 = mylist # Create a new reference "mylist1"
```

In [38]:
```
id(mylist) , id(mylist1) # The address of both mylist & mylist1 will be the same"
```

Out[38]:
```
(2095983757632, 2095983757632)
```

In [39]:
```
mylist2 = mylist.copy() # Create a copy of the list
```

In [40]:
```
id(mylist2)
```

Out[40]:
```
2095978802368
```

In [41]:
```
mylist[0] = 1
```

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

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

In [43]:
```
mylist1
```

Out[43]:
```
[1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
```

In [44]:
```
mylist2
```

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

In [45]:
```
list1 = ['one', 'two', 'three', 'four']
list2 = ['five', 'six', 'seven', 'eight']
```

In [46]:
```
list3 = list1 + list2 # Join two lists by '+' operator
list3
```

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

In [47]:
```
list1.extend(list2) #Append list2 with list1
list1
```

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

In [48]:
```
list1
```

Out[48]:
```
['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']
```

In [49]:
```
'one' in list1 # Check if 'one' exist in the list
```

Out[49]:
```
True
```

In [50]:
```
'ten' in list1 # Check if 'ten' exist in the list
```

Out[50]:
```
False
```

In [51]:
```
list1.reverse() # Reverse the list
list1
```

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

In [52]:
```
list1 = list1[::-1] # Reverse the list
list1
```

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

In [53]:
```
mylist3 = [9,5,2,99,12,88,34]
mylist3.sort() # Sort list in ascending order
mylist3
```

Out[53]:
```
[2, 5, 9, 12, 34, 88, 99]
```

In [54]:
```
mylist3.sort(reverse=True) # Sort list in descending order
mylist3
```

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

In [55]:
```
mylist4 = [88,65,33,21,11,98]
sorted(mylist4)
```

Out[55]:
```
[11, 21, 33, 65, 88, 98]
```

In [56]:
```
mylist4
```

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

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

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

In [59]:
```
for i in list1:
    print(i)
```

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

In [60]:
```
list10 =['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
```

In [61]:
```
list10.count('one')
```

Out[61]: 3

In [62]:
```
list10.count('two')
```

Out[62]: 2

In [63]:
```
list10.count('four')
```

Out[63]: 1