In [ ]:

```
list----collections of anything
list is acollection of characters of same as well as different datatypes
list=[value1,value2,value3....]
int,float,string,range(),list,tuple,set,dictionary
list is mutable(changeable)----immutable
list is ordered [index no---0[starting] -1[ending]]
list is allow duplicates[index no different]
```

In [14]:

```
str1="ffjksjf"
list1=[58,94.2,True,"Python",[5,6,9,8],(5,4,5),{2,9},{"key":"value"}]
# 0-54
# 1-94.2
# 2-True
# 3-"Python"
# 4-[5,6,8,8]
# 5-(5,4,5)
# 6-{2,9}
# 7-{"key":"value"}
print(list1)
print(list1[3][2])
print(list1[4][3])
print(list1[2:5])
print(list1[-1])
list2=[54,87,8,989,8,89,89,99,79,89,79,789]
print(list2)
list2[2:5]=["hello",58,87.9]
print(list2)
```

```
[58, 94.2, True, 'Python', [5, 6, 9, 8], (5, 4, 5), {9, 2}, {'key': 'valu
e'}]
t
8
[True, 'Python', [5, 6, 9, 8]]
{'key': 'value'}
[54, 87, 8, 989, 8, 89, 89, 99, 79, 89, 79, 789]
[54, 87, 'hello', 58, 87.9, 89, 89, 99, 79, 89, 79, 789]
```

In [15]:

```
str1="a"
print(type(str1))
```

```
<class 'str'>
```

In [ ]:

```
listname.methdoname(value/element)
```

In [24]:

```
# append(element)-----add element at last of the list
list4=[4,5,9]
print(list4)
list4.append(45)
print(list4)
list4.append([4,5,9,8,7])
print(list4)
list4.append("hello")
print(list4)
```

```
[4, 5, 9]
[4, 5, 9, 45]
[4, 5, 9, 45, [4, 5, 9, 8, 7]]
[4, 5, 9, 45, [4, 5, 9, 8, 7], 'hello']
```

In [22]:

```
# extend(element(iterable,sequence))----add element at last
list5=[98,45,78]
print(list5)
list5.extend([4,5,9,8,7])
print(list5)
list5.extend("hello")
print(list5)
```

```
[98, 45, 78]
[98, 45, 78, 4, 5, 9, 8, 7]
[98, 45, 78, 4, 5, 9, 8, 7, 'h', 'e', 'l', 'l', 'o']
```

In [27]:

```
#insert(index,element)----add element to the index we have given
list6=["wow",48,"python"]
print(list6)
list6.insert(2,[4,8,9])
print(list6)
list6.insert(3,"learning")
print(list6)
```

```
['wow', 48, 'python']
['wow', 48, [4, 8, 9], 'python']
['wow', 48, [4, 8, 9], 'learning', 'python']
```

In [32]:

```
#pop([index])----removes element from last if we not mention index or remove element from i
list6=[4,5,6,7,8,9]
print(list6)
list6.pop(3)
print(list6)
```

```
[4, 5, 6, 7, 8, 9]
[4, 5, 6, 8, 9]
```

In [ ]:

```
in pop() if we give index which is not in list then it gives indexerror out of range
```

In [36]:

```
# remove(value)----removes value we mentioned
list7=[47,89,36,54,58,43,36]
print(list7)
list7.remove(36)
print(list7)
```

```
[47, 89, 36, 54, 58, 43, 36]
[47, 89, 54, 58, 43, 36]
```

In [ ]:

```
in remove() if we give wrong value then it will raise valueeror
```

In [43]:

```
# count(value)----give the count of the number present in the list
list8=[44,55,66,4,5,46,58,47,44,55,98,78,98,45,47,55,55]
print(list8)
list8.count(55)
```

```
[44, 55, 66, 4, 5, 46, 58, 47, 44, 55, 98, 78, 98, 45, 47, 55, 55]
```

Out[43]:

```
4
```

In [45]:

```
#index(value)----index of the value
list8=[44,55,66,4,5,46,58,47,44,55,98,78,98,45,47,55,55]
print(list8)
list8.index(108)
#if we give value not inside the list then it gives error
```

```
[44, 55, 66, 4, 5, 46, 58, 47, 44, 55, 98, 78, 98, 45, 47, 55, 55]

---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Input In [45], in <cell line: 4>()
      2 list8=[44,55,66,4,5,46,58,47,44,55,98,78,98,45,47,55,55]
      3 print(list8)
----> 4 list8.index(108)

ValueError: 108 is not in list
```

In [74]:

```
# sort()----sort(ascending or descending )
list1=[4,58,94,87,25,45,15,45,87,89,84]
print(list1)
list1.sort(reverse=True)#by default it will sort in ascending order
print(list1)
```

```
[4, 58, 94, 87, 25, 45, 15, 45, 87, 89, 84]
[94, 89, 87, 87, 84, 58, 45, 45, 25, 15, 4]
```

In [52]:

```
list2=["apple","wow","Hello","xaz","yellow","Ant","+hii"]
print(list2)
list2.sort()
print(list2)
```

```
['apple', 'wow', 'Hello', 'xaz', 'yellow', 'Ant', '+hii']
['+hii', 'Ant', 'Hello', 'apple', 'wow', 'xaz', 'yellow']
```

In [54]:

```
list1=[4,58,94,87,25,45,15,45,87,89,84]
print(list1)
list1.reverse()#it will just reverse the list
print(list1)
```

```
[4, 58, 94, 87, 25, 45, 15, 45, 87, 89, 84]
[84, 89, 87, 45, 15, 45, 25, 87, 94, 58, 4]
```

In [58]:

```
# copy()--copy one list to another
list2=[1,2,3,4,5,6,7,8,9]
print(list2)
list3=list2
print(list3)
list2[3]=89
print(list2)
print(list3)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
[1, 2, 3, 4, 5, 6, 7, 8, 9]
[1, 2, 3, 89, 5, 6, 7, 8, 9]
[1, 2, 3, 89, 5, 6, 7, 8, 9]
```

In [59]:

```
list2=[1,2,3,4,5,6,7,8,9]
print(list2)
list3=list2.copy()
print(list3)
list2[3]=89
print(list2)
print(list3)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
[1, 2, 3, 4, 5, 6, 7, 8, 9]
[1, 2, 3, 89, 5, 6, 7, 8, 9]
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [61]:

```
# clear()----clear everything from the list
list2=[1,2,3,4,5,6,7,8,9]
print(list2)
list2.clear()
print(list2)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
[]
```

In [ ]:

```
# Function of list
len()--gives the length of the list
min()---minimum value from the list
max()--maximum value from the list
list()---changes other datatypes to list
```

In [ ]:

```
listname.methodname()
functions(list)
```

In [66]:

```
list1=[4,65,7,8,97,94,6,8]
print(list1)
# len(list1)
min(list1)
```

```
[4, 65, 7, 8, 97, 94, 6, 8]
```

Out[66]:

```
4
```

In [67]:

```
str1="hello"
list(str1)
```

Out[67]:

```
['h', 'e', 'l', 'l', 'o']
```

In [72]:

```
list8=["hello","wow","appleworld","+vfd"]
min(list8)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Input In [72], in <cell line: 2>()
      1 list8=["hello","wow","appleworld","+vfd",45,747,89,7]
----> 2 min(list8)

TypeError: '<' not supported between instances of 'int' and 'str'
```