In [15]:
```
#LIst
"""
1.its a collection of different values
2.list like array
3.its mutable (changeble)
4.start with [values,values,]
5.multiple datype value store in single list
"""
#list declaration

#l1=['arjun']
#type(l1)

#declaring list
list1=["ram",1,12.20,True]
#print(list1)
list1[0]='mina'
print(list1)
```

```
['mina', 1, 12.2, True]
```

In [19]:
```
#accessing list element
list1=["ram","Arjun",1,202]
print(list1)
for i in list1:
    print(i)
print("loop end")
```

```
['ram', 'Arjun', 1, 202]
ram
Arjun
1
202
loop end
```

In [29]:
```
#length function .len()
list1=["ram","Arjun",1,202]
#print(len(list1))

for x in range (len(list1)):
    #print("length is :",len(list1))

    print(list1[x])
```

```
ram
Arjun
1
202
```

In [30]:
```
#max function
list1=["ram","Arjun",1,202]
list1=max(list1)

# dont compare integer and string max function
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-30-d9007afc9755> in <module>
      1 #max function
      2 list1=["ram","Arjun",1,202]
----> 3 list1=max(list1)   # dont compare integer and string max function
      4
      5

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

In [31]:
```
## maximum values comapre integer
l1=[1,2,3,4,5]

l1=max(l1)

print(l1)
```

```
5
```

In [32]:
```
## minimun values comapre integer
l1=[1,2,3,4,5]

l1=min(l1)

print(l1)
```

```
1
```

In [ ]:
```
"""
case 1:
interger and string not comapare

case 2 :
string value is cmp to string value
by alphabate order
"""
```

In [39]:
```
"""case 2 :
string value is cmp to string value
by alphabate order
"""

list1=["arjun","sita","gita","mohan"]
list1=max(list1)
print("maximum value is :",list1)

# minimum values

list1=["aa","arjun","sita","gita","mohan","arjun","arun"]
list1=min(list1)
print("maximum value is :",list1)
```

```
maximum value is : sita
maximum value is : aa
```

In [42]:
```
#append() function // append = add
list1=["aa","arjun","sita","gita","mohan","arjun","arun"]
list1.append("mita")

list1.append("sujata") # data store in last index

print(list1)
```

```
['aa', 'arjun', 'sita', 'gita', 'mohan', 'arjun', 'arun', 'mita', 'sujata']
```

In [3]:
```
# integer list printing
a=[]
for i in range (10) :

    x=int(input("Enter a data to store in list :"))
    a.append(x)
print(a)
```

```
Enter a data to store in list :1
Enter a data to store in list :2
Enter a data to store in list :3
Enter a data to store in list :4
Enter a data to store in list :5
Enter a data to store in list :6
Enter a data to store in list :7
Enter a data to store in list :8
Enter a data to store in list :9
Enter a data to store in list :0
[1, 2, 3, 4, 5, 6, 7, 8, 9, 0]
```

float list printing

a=[] for i in range (10) :

```
    x=(input("Enter a data to store in list :")
    a.append(x)
```

print(a)

In [6]:
```
# float list printing
a=[]
for i in range (10) :

    x=input("Enter a data to store in list :")
    a.append(x)
print(a)


"""notes :
    input 2
    output : '2' // string
    """
```

```
Enter a data to store in list :arjun
Enter a data to store in list :narle
Enter a data to store in list :pappa
Enter a data to store in list :mummy
Enter a data to store in list :dady
Enter a data to store in list :mom
Enter a data to store in list :didu
Enter a data to store in list :kaku
Enter a data to store in list :kaka
Enter a data to store in list :dada
['arjun', 'narle', 'pappa', 'mummy', 'dady', 'mom', 'didu', 'kaku', 'kaka', 'da
da']
```

In [10]:
```
## count()   function used to calculate list frequency
list1=["aa","arjun","sita","gita","mohan","arjun","arun"]
a=list1.count("arjun")
print("printing count value arjun is",a)
```

```
printing count value arjun is 2
```

In [ ]:
```
## count()   function used to calculate list frequency user defined

a=[]
for i in range(5):
    x=input("Enter a list")
    a.append(x)
x=input("Enter a counting value :")
f=a.count(x)

print("frequency of counting value  ",x,"is",f)
```

```
Enter a list3
Enter a list1
Enter a list2
Enter a list3
Enter a list3
```

In [13]:
```
#insert function .insert()

list1=["aa","arjun","sita","gita","mohan","arjun","arun"]
list1.insert(0,'pika')
print(list1)
```

```
['pika', 'aa', 'arjun', 'sita', 'gita', 'mohan', 'arjun', 'arun']
```

In [ ]:
```
#insert function .insert()   user defined
a=[]
size=int(input("size of list:"))
for i in range(size):
    val=int(input("Enter a values to add a list "))
    a.append(val)
    print("original list is ",a)

var=int(input("Enter a number to insert "))
pos=int(input("Enter a position"))
a.append(None)
for i in range(size-1,pos-2,-1):
    a[i+1]=a[i]
a[pos-1]=var

print("List after modification = ",a)
```

In [5]:
```
#insert function .insert()   user defined
a=[]
size=int(input("size of list:"))
for i in range(size):
    val=int(input("Enter a values to add a list "))
    a.append(val)
    print("original list is ",a)

var=int(input("Enter a number to insert "))
pos=int(input("Enter a position"))
a.append(None)
for i in range(size-1,pos-2,-1):
    a[i+1]=a[i]
a[pos-1]=var

print("List after modification = ",a)
```

```
size of list:5
Enter a values to add a list 1
original list is  [1]
Enter a values to add a list 2
original list is  [1, 2]
Enter a values to add a list 3
original list is  [1, 2, 3]
Enter a values to add a list 4
original list is  [1, 2, 3, 4]
Enter a values to add a list 5
original list is  [1, 2, 3, 4, 5]
Enter a number to insert 3
Enter a position0
List after modification =  [5, 1, 2, 3, 4, 3]
```

In [8]:
```
#compare function .com()

list1=["aa","arjun","sita","gita","mohan","arjun","arun"]
list2=["aa","arjun","sita","gita","mohan","arjun","arun"]

print(cmp(list1,list2))

"""
case 1:
return 1 : list1>list2
return 0 : list1=list2
return -1 :l2>l1

case 2:

l1 & l2 both are integer    [left to right ] comparision large >> stop

case 3:
similar value  >>> one list large

equal list
"""
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-8-4a30bafa637d> in <module>
      4 list2=["aa","arjun","sita","gita","mohan","arjun","arun"]
      5
----> 6 print(cmp(list1,list2))
      7
      8 """

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

In [14]:
```
#sort function // asending , desending order

l1=[1,2,405,27,5,8,7]
print("original list is ",l1)
l1.sort(reverse=False)  #// asending order
print("asending order is :",l1)

"""
li.sort(reversr='false') // asending
l1.sort(reverse="True")  // desending
"""

l1.sort(reverse=True) # desending order
print("reverse order is ",l1)
```

```
original list is  [1, 2, 405, 27, 5, 8, 7]
asending order is : [1, 2, 5, 7, 8, 27, 405]
reverse order is  [405, 27, 8, 7, 5, 2, 1]
```

In [*]:
```
#asending order
a=[]
for i in range (10):
    x=input("Enter a item to add list")
    a.append(x)
    #a.sort()
    a.sort(reverse=False)        # bydefault asending order
print("asending order is ",a)
```

In [*]:
```
#desending order

a=[]
for i in range (10):
    x=input("Enter a item to add list")
    a.append(x)
    a.sort(reverse=True)
print("asending order is ",a)
```

In [ ]:
```

```