Operators and functions belongs to list

1. max()
2. min()
3. sorted()
4. sum()
5. len()
6. any()
7. all()
8. count()

max(): max() is a predefined function, this function returns maximum value of given list.

Syntax: max(iterable)

Example:

```
>>> list1=[10,20,30,40,50]
>>> max(list1)
50
```

min(): min() is a predefine function, this function returns minimum value of given list

```
>>> list1=[10,20,30,40,50]
>>> min(list1)
10
```

count(value): this method returns count of given value exists within sequence or list

```
>>> list1=[1,2,3,4,5,6,1,2,3,7,8,9]
>>> list1.count(2)
2
>>> list1.count(4)
1
```

sorted(): sorted() is a predefined function, this sort the elements of list or sequence in ascending or descending. After sorting element it will return new list.

Example:

```
>>> list1=[4,8,3,5,8,2,5,9,3,1]
>>> list2=sorted(list1)
>>> print(list1)
[4, 8, 3, 5, 8, 2, 5, 9, 3, 1]
>>> print(list2)
[1, 2, 3, 3, 4, 5, 5, 8, 8, 9]
>>> list3=sorted(list1,reverse=True)
>>> print(list3)
```

Example:

```
# write a program to find 2 min value in a given list

n=int(input("enter how many values"))
list1=[int(input("enter value")) for i in range(n)]
list2=sorted(list1)
c=list2.count(list2[0])
print("2nd minimum is ",list2[c])
c=list2.count(list2[-1])
print("2nd maximum is ",list2[(len(list1)-1)-c])
```

Output:

```
enter how many values5
enter value1
enter value2
enter value3
enter value4
enter value5
2nd minimum is  2
2nd maximum is  4
```

https://www.hackerrank.com/challenges/find-second-maximum-number-in-a-list/problem?isFullScreen=true

```
    n = int(input())
    arr =list(map(int, input().split()))
```

```
    arr.sort()
    fm=max(arr)
    c=arr.count(fm)
    sm=arr[n-(c+1)]
    print(sm)
```

sum() : this function returns sum of values exists within iterable

```
>>> list1=[10,20,30,40,50]
>>> s=sum(list1)
>>> print(s)
150
>>> s=sum(list1,100)
>>> print(s)
250
```

len(iteatable): this function return total number elements exists within list or iterable

```
>>> list1=list(range(10,110,10))
>>> print(list1)
[10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
>>> len(list1)
10
>>> avg=sum(list1)/len(list1)
>>> print(avg)
55.0
```

any():

any(iterable)
Return True if any element of the iterable is true. If the iterable is empty, return False.

```
>>> list1=[]
>>> any(list1)
False
>>> list2=[10,20,30,40,50]
```

```
any(list2)
True
list3=[0,0,0,0,0]
>>> any(list3)
False
>>> list4=[1,0,0,0,0]
>>> any(list4)
True
>>> list5=[False,False,False]
>>> any(list5)
False
>>> list6=[True,False,False]
>>> any(list6)
True
```

all(iterable)
Return True if all elements of the iterable are true (or if the iterable is empty)

```
>>> list1=[]
>>> all(list1)
True
>>> list2=[0,0,0,0,0,1,1,1]
>>> all(list2)
False
>>> list3=[1,1,1,1,1]
>>> all(list3)
True
```

Operators used with list

+	+ operator is used to concatenation of list
	
	>>> list1=[10,20,30,40,50]
	>>> list2=[1,2,3,4,5]
	>>> list3=list1+list2
	>>> print(list1)
	[10, 20, 30, 40, 50]
	>>> print(list2)
	[1, 2, 3, 4, 5]

	>>> print(list3)
	[10, 20, 30, 40, 50, 1, 2, 3, 4, 5]
	>>> namesList1=['naresh','suresh']
	>>> namesList2=['kishore','ramesh']
	>>> namesList=namesList1+namesList2
	>>> print(namesList1)
	['naresh', 'suresh']
	>>> print(namesList2)
	['kishore', 'ramesh']
	>>> print(namesList)
	['naresh', 'suresh', 'kishore', 'ramesh']

*	This operator is used to repeat a given list given “n” times
	
	>>> list1=[10,20,30]
	>>> list2=[1,2,3]
	>>> list1*list2
	Traceback (most recent call last):
	  File "<pyshell#54>", line 1, in <module>
	  list1*list2
	TypeError: can't multiply sequence by non-int of type 'list'
	>>> list3=list1*3
	>>> print(list3)
	[10, 20, 30, 10, 20, 30, 10, 20, 30]
	>>> list4=3*list1
	>>> print(list4)
	[10, 20, 30, 10, 20, 30, 10, 20, 30]
	>>> list5=list1*3+list2
	>>> print(list5)
	[10, 20, 30, 10, 20, 30, 10, 20, 30, 1, 2, 3]

All relational operators can be used with list	These relational operators are used to compare elements of list == != >= <= > < >>> list1=[10,20,30]

	>>> list2=[10,20,30]
	>>> list1==list2
	True
	>>> list3=[30,10,20]
	>>> list1==list2
	True
	>>> list1==list3
	False
	>>> list4=[10,20,30,40,50]
	>>> list1==list4
	False

https://www.geeksforgeeks.org/python-programming-examples/