enumerate(iterable, start=0)
Return an enumerate object. iterable must be a sequence, an iterator, or some other object which supports iteration. The __next__() method of the iterator returned by enumerate() returns a tuple containing a count (from start which defaults to 0) and the values obtained from iterating over iterable

Example:

```
names_list=['naresh','suresh','kiran','kishore','ramesh']
e=enumerate(names_list)
a=next(e)
print(a)
b=next(e)
print(b)
c=next(e)
print(c)
e=enumerate(names_list,10)
a=next(e)
print(a)
b=next(e)
print(b)
for c in e:
   print(c)
```

Output:

```
(0, 'naresh')
(1, 'suresh')
(2, 'kiran')
(10, 'naresh')
(11, 'suresh')
(12, 'kiran')
(13, 'kishore')
(14, 'ramesh')
>>>
>>>
```

for loop
The for statement is used to iterate over the elements of a sequence (such as a string, tuple or list) or other iterable object:

Syntax:

```
for variable-name in <iterable>:
        statement-1
        statement-2
```

for loop each time read value/element/item generated by iterable and execute statement-1 and statement-2
for loop read values from iterable by creating iterator

Example:

```
>>> list1=[10,20,30,40,50]
>>> for value in list1:
        print(value)

10
20
30
40
50
>>>
```

Mutable operations of list

1. **append(item) :** add item at the end of list, using this method we can add only one item

Example:

```
>>> list1=[]
>>> list1.append(10)
>>> list1.append(20)
>>> list1.append(30)
>>> print(list1)
[10, 20, 30]
```

Example:

```
# write a program to read the scores of n players and display
n=int(input("How many players?")) # 5
scores=[]
for i in range(n): # 0 1 2 3 4
   s=int(input("Enter Score:"))
   scores.append(s)

for score in scores:
   print(score)

e=enumerate(scores,1)
```

```
for c,s in e: # (1,100)
    print(f'{c}--->{s}')
```

Output:

```
How many players?2
Enter Score:100
Enter Score:20
100
20
1--->100
2--->20
>>>
```

Example:

```
>>> list1=[]
>>> list1.append(10,20,30)
Traceback (most recent call last):
  File "<pyshell#10>", line 1, in <module>
    list1.append(10,20,30)
TypeError: list.append() takes exactly one argument (3 given)
>>> list1.append(10)
>>> list1.append(20)
>>> print(list1)
[10, 20]
>>> list1[2:2]=[100,200,300,400]
>>> print(list1)
[10, 20, 100, 200, 300, 400]
>>> list1[-1:-1]=[99,88,77]
>>> print(list1)
[10, 20, 100, 200, 300, 99, 88, 77, 400]
>>> list1[len(list1):len(list1)]=[1,2,3]
>>> print(list1)
[10, 20, 100, 200, 300, 99, 88, 77, 400, 1, 2, 3]
>>>
```

Example:

# write a program to read the sales of n sales persons and
# find total sales and avg sales

```
n=int(input("How many sales persons?"))
```

```
sales=[]
for i  in range(n):
    sale=float(input("Enter sales"))
    sales.append(sale)

total=0
for sale in sales:
    total+=sale

print(f'Sales {sales}')
print(f'Total sales {total:.2f}')
print(f'Avg sales {total/n:.2f}')
```

Output:

```
How many sales persons?3
Enter sales10000
Enter sales20000
Enter sales30000
Sales [10000.0, 20000.0, 30000.0]
Total sales 60000.00
Avg sales 20000.00
>>>
```

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

```
n=int(input())
l=list(map(int,input().split(" ")[:n]))
l.sort()
ms=max(l)
c=l.count(ms)
nms=l[len(l)-(c+1)]
print(nms)
```