

Methods of List

List class or data type provides the following methods to perform operations.

1. append()
2. insert()
3. remove()
4. extend()
5. pop()
6. clear()
7. sort()
8. copy()
9. count()
10. reverse()
11. index()

append()

this method add element/item at the end of list. this method is used to add one element

Syntax: append(ele)

Example:

```
>>> list1=[]
>>> list1.append(10)
>>> list1.append(20)
>>> list1.append(30)
>>> list1.append(40)
>>> print(list1)
[10, 20, 30, 40]
```

Adding or append more than one value is done using slicing operator.

Syntax: list-name[last-index:last-index]=[list of values]

```
>>> list1[4:4]=[50,60,70]
>>> print(list1)
[10, 20, 30, 40, 50, 60, 70]
```

Insert()

This method inserts value at given index/position
This method inserts one value.

Syntax: insert(index,value)

Whenever insertion is done, the elements are shifted towards right side.

```
>>> list1=[10,20,30,40,50]
>>> print(list1)
[10, 20, 30, 40, 50]
>>> list1.insert(0,99)
>>> print(list1)
[99, 10, 20, 30, 40, 50]
>>> list1.insert(2,88)
>>> print(list1)
[99, 10, 88, 20, 30, 40, 50]
```

In order to insert more than values we use slicing

list-name[startindex:endindex]=[list of values]

startindex and endindex must be same

```
>>> list1=[10,20,30,40,50]
>>> print(list1)
[10, 20, 30, 40, 50]
>>> list1[0:0]=[99,88]
>>> print(list1)
[99, 88, 10, 20, 30, 40, 50]
>>> list1[3:3]=[66,77]
>>> print(list1)
[99, 88, 10, 66, 77, 20, 30, 40, 50]
```

remove()

this method is used to remove element or value from list.

Syntax: list-name.remove(value)

Example:

```
>>> list1=[10,20,30,40,50,60]
>>> print(list1)
```

```
[10, 20, 30, 40, 50, 60]
>>> list1.remove(10)
>>> print(list1)
[20, 30, 40, 50, 60]
>>> list1.remove(10)
Traceback (most recent call last):
  File "<pyshell#26>", line 1, in <module>
    list1.remove(10)
ValueError: list.remove(x): x not in list
>>>
```

Removing values from list using index and slicing

this can be done using “del” keyword

del list-name[index] → delete only one value

del list-name[start:stop:step] → delete more than one value

```
>>> list1=[10,20,30,40,50,60,70,90,100]
>>> print(list1)
[10, 20, 30, 40, 50, 60, 70, 90, 100]
>>> del list1[0]
>>> print(list1)
[20, 30, 40, 50, 60, 70, 90, 100]
>>> del list1[-3:]
>>> print(list1)
[20, 30, 40, 50, 60]
>>> del list1[:3]
>>> print(list1)
[50, 60]
>>> list1=list(range(10,110,10))
>>> print(list1)
[10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
>>> del list1[2:-2]
>>> print(list1)
[10, 20, 90, 100]
```

Example:

EmailBook Application

```
emailbook=[]
while True:
    print("EmailBook")
    print("1. Adding")
    print("2. Removing")
    print("3. Searching")
    print("4. Listing")
    print("5. Exit")
    opt=int(input("Enter your option"))
    if opt==1:
        mailid=input("enter mailid")
        emailbook.append(mailid)
        print("Emailid is added")
    elif opt==2:
        mailid=input("enter mailid to remove")
        if mailid in emailbook:
            emailbook.remove(mailid)
            print("emailid removed...")
        else:
            print("emailid not found")
    elif opt==3:
        mailid=input("enter mailid to search")
        if mailid in emailbook:
            print(emailid,"is found")
        else:
            print("emailid not found")
    elif opt==4:
        for emailid in emailbook:
            print(emailid)
    elif opt==5:
        break
```

Output:

```
EmailBook
1. Adding
2. Removing
3. Searching
4. Listing
5. Exit
```

```
Enter your option2
enter mailid to removejavabygupta@gmail.com
emailid removed...
EmailBook
1. Adding
2. Removing
3. Searching
4. Listing
5. Exit
Enter your option4
pythonbygupta@gmail.com
javabygupta@gmail.com
EmailBook
1. Adding
2. Removing
3. Searching
4. Listing
5. Exit
Enter your option4
pythonbygupta@gmail.com
javabygupta@gmail.com
EmailBook
1. Adding
2. Removing
3. Searching
4. Listing
5. Exit
Enter your option2
enter mailid to removenareash@nareshit.com
emailid not found
```

Example:

write a program to remove all occurances of given value

```
list1=[10,20,30,10,10,40,10,10,50]
```

```
while True:
    if 10 in list1:
```

```
        list1.remove(10)
    else:
        break
```

```
print(list1)
```

Output:

```
[20, 30, 40, 50]
```