

LAB 2: Program to find the union of two lists.

Program Logic

1. Ask user to input two list
2. Print two list
3. Apply the different methods to concatenate or union of two list
4. Print the joined list

Input the first list

In [7]:

```
list1=[]  
size1=int(input("Enter size of list 1: "))  
  
for i in range(size1):  
    num1 = input("Enter Element: \n")  
    list1.append(num1)
```

```
Enter size of list 1: 6  
Enter Element:  
1  
Enter Element:  
2  
Enter Element:  
3  
Enter Element:  
4  
Enter Element:  
5  
Enter Element:  
6
```

Input the Second list

In [8]:

```
list2=[]  
size2=int(input("Enter size of list 2: "))  
  
for i in range(size2):  
    num2 = input("Enter Element: \n")  
    list2.append(num2)
```

Enter size of list 2: 6
Enter Element:
4
Enter Element:
5
Enter Element:
6
Enter Element:
7
Enter Element:
8
Enter Element:
9

Methods to *Concatinate* two lists

Method 1: using "+" operator

In [9]:

```
con_list1 = list1 + list2  
print("Concatination of\n list 1: {} and\n list 2: {} is\n {}".format(list1, list2, con_list1))
```

Concatination of
list 1: ['1', '2', '3', '4', '5', '6'] and
list 2: ['4', '5', '6', '7', '8', '9'] is
['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9']

Method 2: using "*" operator

In [10]:

```
con_list2 = [*list1,*list2]  
print("Concatination of\n list 1: {} and\n list 2: {} is\n {}".format(list1, list2, con_list2))
```

Concatination of
list 1: ['1', '2', '3', '4', '5', '6'] and
list 2: ['4', '5', '6', '7', '8', '9'] is
['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9']

Method 3: using extend()

In [11]:

```
con_list3 = list1
con_list3.extend(list2)
print("Concatination of\n list 1: {} and\n list 2: {} is\n {}".format(list1,list2,con_list3))
```

Concatination of

list 1: ['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9'] and

list 2: ['4', '5', '6', '7', '8', '9'] is

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

Method 4: using itertools.chain

In [12]:

```
import itertools
con_list4 = list(itertools.chain(list1,list2))
print("Concatination of\n list 1: {} and\n list 2: {} is\n {}".format(list1,list2,con_list4))
```

Concatination of

list 1: ['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9'] and

list 2: ['4', '5', '6', '7', '8', '9'] is

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

Method 5: using append()

In [13]:

```
print("1st list is",list1,"\t")
print("2nd list is",list2,"\t")
con_list3 = list1
for i in list2:
    con_list3.append(i)
print("Appended list is",con_list3 )
```

1st list is ['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9']

2nd list is ['4', '5', '6', '7', '8', '9']

Appended list is ['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9', '4', '5', '6', '7', '8', '9']

Union of list

In [14]:

```
union_list = list(set(list1+list2))  
print("Union of\n list 1: {} and\n list 2: {} is\n {}".format(list1,list2,union_list))
```

Union of

```
list 1: ['1', '2', '3', '4', '5', '6', '4', '5', '6', '7', '8', '9', '4',  
'5', '6', '7', '8', '9'] and  
list 2: ['4', '5', '6', '7', '8', '9'] is  
['4', '7', '9', '6', '3', '8', '5', '1', '2']
```

Task: Write a program to find the union of two list using different methods, define in a function