In [30]:
```
#Pre defined Function used below in tasks
def takeInputInList():
    mylist = []
    print("Enter stop to stop appennding in list")
    while True :
        num = input("Enter Number: ")
        if(num == "stop"):
            break
        else:
            mylist.append(int(num))
    return mylist
def getLength(l) :
    count = 0
    for i in l:
        count+=1
    return count
```

In [31]:
```
# 1. Write a Python program to find the maximum element in a given list.

def findMaxEle(l) :
    max_ele = l[0]
    for i in range(1,getLength(l)) :
        if max_ele < l[i]:
            max_ele = l[i]
    return max_ele

list1 = takeInputInList()

print ("The Maximum Element is",findMaxEle(list1))
```

```
Enter stop to stop appennding in list

The Maximum Element is 64
```

In [32]:
```
# 2. Write a Python program to calculate the sum of all the elements in a given list.
def sumOfList(l) :
    summ = 0
    for i in l:
        summ+=i
    return summ
list2 = takeInputInList()
print("Sum of List:",sumOfList(list2))
```

```
Enter stop to stop appennding in list

Sum of List: 15
```

In [33]:
```
# 3. Write a Python program to check if a given list is empty or not.
list3 = takeInputInList()

def emptyOrNot(l):
    if getLength(l) == 0 :
        return "list is empty"
    else:
        return "list is not empty"
print(emptyOrNot(list3))
```

```
Enter stop to stop appennding in list
```

```
list is empty
```

In [34]:
```
### 4. Write a Python program to remove duplicates from a given list.
# def removeDup(l):
#     # popped = []
#     for i in range(getLength(l)):
#         for j in range(i+1,getLength(l)):
#             print(getLength(l))
#             if l[i] == l[j]:
#                 l.pop(j)
#                 print(l)
#     return l
def removeDup(l):
    popped = []
    for i in range(getLength(l)):
        j = i+1
        while j < getLength(l):
            if l[i] == l[j]:
                popped.append(l.pop(j))
            j+=1
    return [l , popped]

list4 = takeInputInList()
initial = []
for i in list4:
    initial.append(i)
result = removeDup(list4)
if getLength(result[1])!=0:
    print("List before removing duplicate elements:",initial)
    print("List after removing duplicate elements:",result[0])
    print("Duplicate Values were : ", result[1])
else:
    print("Duplicate Element was not found in List : ",list4)
```

```
Enter stop to stop appennding in list

List before removing duplicate elements: [1, 2, 3, 9, 11, 1, 2, 3]
List after removing duplicate elements: [1, 2, 3, 9, 11]
Duplicate Values were :  [1, 2, 3]
```

In [35]:
```
# 5. Write a Python program to check if a given element exists in a list.
list5 = takeInputInList()
def existOrNot(l,n):
    flag = False
    for i in range(getLength(l)):
        if l[i] == n:
            print("Element Exits at index:",i)
            flag = True
    if not flag:
        print("Element Don't exists")

n = int(input("Enter number to search"))
existOrNot(list5,n)
```

```
Enter stop to stop appennding in list

Element Exits at index: 5
```

In [36]:
```
# 6. Write a Python program to reverse a given list.
def reverse(l):
```

```
    rev_list = []
    for i in range(getLength(l)-1,-1,-1):
        rev_list.append(l[i])
    return rev_list
list6 = takeInputInList()
print("Before Reverse : " , list6)
print("After Reverse : ",reverse(list6))
```

```
Enter stop to stop appennding in list

Before Reverse :  [1, 2, 3, 4, 5]
After Reverse :  [5, 4, 3, 2, 1]
```

In [37]:
```
# 8. Write a Python program to find the average of all the elements in a given list.
def findAverage(l):
    return sumOfList(l)/getLength(l)
list8 = takeInputInList()
print("Average is :" , findAverage(list8))
```

```
Enter stop to stop appennding in list

Average is : 1.0
```

In [38]:
```
# 9. Write a Python program to concatenate two lists and create a new list.
def concatenateTwoList(l1,l2):
    newList = l1
    for i in range(getLength(l2)):
        newList.append(l2[i])
    return newList
print("Populate First List:")
list9 = takeInputInList()
print("Populate Second List:")
list9point1 = takeInputInList()
print("Concatenated List :",concatenateTwoList(list9,list9point1))
```

```
Populate First List:
Enter stop to stop appennding in list

Populate Second List:
Enter stop to stop appennding in list

Concatenated List : [1, 2, 3, 4, 5, 1]
```

In [39]:
```
# 10. Write a program to implement the given equatrion:
def equation(num , power):
    summ = 0
    for i in range(power+1):
        summ+=num**i
    return summ
n = int(input("Enter Number:"))
x = int(input("Enter power:"))
print("Sum of the equation is :",equation(n,x))
```

```
Sum of the equation is : 15
```

In [40]:
```
# 11. Write a program to print the given shape
def printShape(x,y):
    count = 0
    sign = "+"
    for i in range(x):
        if i % 4 == 0:
```

```
            print("- "*y,end="")
            print()
        elif i % 2==0 :
            for j in range(y):
                if j % 2 == 0:
                    sign = "- "
                else:
                    sign = "+ "
                print(sign,end="")
            print()
        else :
            for k in range(y):
                if k % 2 == 0:
                    sign = "+ "
                else:
                    sign = "- "
                print(sign , end="")
            print()
x = int(input("Enter Length(in multiple of 5):"))
y = int(input("Enter width(in multiple of 5):"))
z=0
if (y % 5 != 0) or (x % 5 != 0):
    print("Please Enter in multiple of 5")
else:
    z = (x/5) - 1
    x-=z
    printShape(int(x),y)
```

```
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+ - + - + - + - + - 
- - - - - - - - - - 
```

In [41]:

```
# 12.Write a program to implement the given equation.
def factorial(n):
    summ = 1
    if n == 0:
        return 1
    else:
        for i in range(1,n+1):
            summ*=i
    return summ

def equation2(num , power):
    summ = 0
    result = 0
    for i in range(power+1):
        summ=num**i
        result+=summ/factorial(i)
    return result

n = int(input("Enter Number:"))
x = int(input("Enter power:"))
print("Sum of the equation is :",equation2(n,x))
```

```
Sum of the equation is : 18.4
```

In [42]:
```
# 13. Write a Python program that takes two lists and print &quot;Yes&quot; if
# they have at least one common member.
def checkCommon(l1,l2):
    commonList = []
    flag = True
    if getLength(l1) <= getLength(l2):
        for i in range(getLength(l1)):
            for j in range(getLength(l2)):
                if l1[i] == l2[j] :
                    commonList.append(l2[j])
                    flag = False
                    break
    else:
        for i in range(getLength(l2)):
            for j in range(getLength(l1)):
                if l2[i] == l1[j]:
                    commonList.append(l1[j])
                    flag = False
                    break
    if flag :
        return "Both Lists have nothing in common"
    else :
        return commonList


print("Populate First List:")
list13 = takeInputInList()
print("Populate Second List:")
list13point1 = takeInputInList()
print("Checking Common : ",checkCommon(list13 , list13point1))
```

```
Populate First List:
Enter stop to stop appennding in list

Populate Second List:
Enter stop to stop appennding in list

Checking Common :  [1, 3]
```

In [43]:
```
# 14. A function which can return list of all numbers which are greater than 20 in a t
# have to pass tuple as an argument

def greaterThan20(tpl):
    tlist = []
    for i in tpl:
        if i > 20 :
            tlist.append(i)
    return tlist
list14 = greaterThan20((1,50,11,24,5,9,33,0,90))
print("List of 20 < ",list14)
```

```
List of 20 <  [50, 24, 33, 90]
```

In [44]:
```
# 15. function which can accept tuple in its arguments and convert into list also retu
def tuppleToList(tpl):
    tlist = []
    for i in tpl:
        tlist.append(i)
    return tlist
```

```
list15 = tuppleToList(("Hadirium" ,12 , 5 , 9))
print(list15)
```

```
['Hadirium', 12, 5, 9]
```