1. Write a program that asks the user to enter a list of at least five integers. Do the following:

In [8]:
```
print('Enter a list consisting of Min. five integers:' )
n = int(input("Enter number of elements : "))
lst = []
for i in range(0, n):
    x = input()
    if x.isdigit():
        x=int(x)
    else:
        pass
    lst.append(x)

print(lst)
```

```
Enter a list consisting of Min. five integers:
Enter number of elements : 8
21
43
ed
te
54
yy
82
91
[21, 43, 'ed', 'te', 54, 'yy', 82, 91]
```

(a) Print out the total number of items in the list.

In [9]:
```
print("Total No. of items in list: ", len(lst))
```

```
Total No. of items in list:  8
```

(b) Print out the fourth item (index 3) in the list.

In [10]:
```
print("Fourth item in list :", lst[3])
```

```
Fourth item in list : te
```

(c) Print out the last three items in the list.

In [11]:
```
print("Last three items in list: ", lst[-3:])
```

```
Last three items in list:  ['yy', 82, 91]
```

(d) Print out all the items in the list except the first two.

In [12]:
```
print("Last items execludint first two: ", lst[2:])
```

```
Last items execludint first two:  ['ed', 'te', 54, 'yy', 82, 91]
```

(e) Print out the list in reverse order.

In [13]:
```
print("List in reverse order: ", lst[::-1])
```

```
List in reverse order:  [91, 82, 'yy', 54, 'te', 'ed', 43, 21]
```

(f) Print out the largest and smallest values in the list.

In [14]:
```
print('Enter a list consisting of Min. five integers:' )
lst1 = []
n = int(input("Enter number of elements : "))

for i in range(0, n):
```

```
    x = input()
    lst1.append(x)

print(lst1)
print("Largest value in the list: ", max(lst1))
print("Smallest value in the list: ", min(lst1))
```

```
Enter a list consisting of Min. five integers:
Enter number of elements : 7
43
re
61
13
33
tw
82
['43', 're', '61', '13', '33', 'tw', '82']
Largest value in the list:  tw
Smallest value in the list:  13
```

(g) Print out the sum of all the values in the list.

In [18]:
```
lst = [32, 11, 84, 21, 8, 42]
sum = 0
for i in range(0,len(lst)):
    sum = sum + lst[i]
print("Sum of all the values in the list: ", sum)
```

```
Sum of all the values in the list:  198
```

(h) If the list contains a zero, print out the index of the first zero in the list, and otherwise print out a message saying there are no zeroes.

In [19]:
```
lst2=[23,4,0,1,5,3,0,6]
n = len(lst2)
i = 0
for i in range(0,n):
    if lst2[i] == 0:
        print("Index of first ZERO in the list is: ", i)
        break
else:
    print("List is containing NO ZEROS.")
```

```
Index of first ZERO in the list is:  2
```

(i) Sort the list and print out the list after sorting.

In [1]:
```
print('Enter a list consisting of integers:' )
n = int(input("Enter number of elements : "))
lst3 = []
for i in range(0, n):
    x = input()
    lst3.append(x)
lst3 = [int(i) for i in lst3]
print(lst3)

lst3.sort()
print(lst3)
```

```
Enter a list consisting of integers:
Enter number of elements : 6
34
52
43
10
00
47
[34, 52, 43, 10, 0, 47]
[0, 10, 34, 43, 47, 52]
```

(j) Delete the first item from the (now sorted) list and print out the new list.

In [2]:
```
print (lst3.pop(0))
print(lst3)
```

```
0
[10, 34, 43, 47, 52]
```

(k) Change the second-to-last item in the list to 9876 and print out the new list.

In [3]:
```
lst3[1:] = [9,8,7,6]
print(lst3)
```

```
[10, 9, 8, 7, 6]
```

(l) Append the value -500 to the end of the list and print out the new list.

In [4]:
```
list1 = [100, 400, 150.50, 600]
list1.append(-500)
print (list1)
```

```
[100, 400, 150.5, 600, -500]
```

2. Write a program that asks the user to enter a list of numbers. Then print out the smallest thing in the list and the first index at which it appears in the list.

In [1]:
```
print('Enter the list of numbers:-' )
n = int(input("Enter number of elements : "))
lst4 = []
for i in range(0, n):
    x = input()
    lst4.append(x)
lst5 = [int(i) for i in lst4]
print(lst5)
a = min(lst5)
b = lst5.index(a)
print("Smallest no in the list is: ", a,", containing index: ", b)
```

```
Enter the list of numbers:-
Enter number of elements : 6
32
44
15
01
72
88
[32, 44, 15, 1, 72, 88]
Smallest no in the list is:  1 , containing index:  3
```

3. Write a program that asks the user to enter a string of lowercase letters and creates a list containing counts of how many times each letter appears in the string. The first index is how many a's are in the string, the second is how many b's, etc.

In [2]:
```
print('Enter a string of lowercase letters :', end='' )
```

```
string = input()
lst6 = []
lst6.extend(string)
print(lst6)

def charfreq(a):
    x = {}
    for y in a:
        if y in x:
            x[y] +=1
        else:
            x[y] =1
    return x

print(charfreq(lst6))
```

```
Enter a string of lowercase letters :python programming
['p', 'y', 't', 'h', 'o', 'n', ' ', 'p', 'r', 'o', 'g', 'r', 'a', 'm', 'm', 'i',
'n', 'g']
{'p': 2, 'y': 1, 't': 1, 'h': 1, 'o': 2, 'n': 2, ' ': 1, 'r': 2, 'g': 2, 'a': 1,
'm': 2, 'i': 1}
```

4. Create a dictionary whose keys are the strings 'abc', 'def', 'ghi', 'jkl', and 'mno' and whose corresponding values are 7, 11, 13, 17, and 19. Then write dictionary code that does the following.

In [3]:
```
dict = {'abc':7, 'def':11, 'ghi':13, 'jkl':17, 'mno':19}
```

(a) Print the value in the dictionary associated with the key 'def'.

In [5]:
```
dict = {'abc':7, 'def':11, 'ghi':13, 'jkl':17, 'mno':19}
print("The value of 'def' is " ,dict['def'])
```

```
The value of 'def' is  11
```

(b) Use the keys() method to print out all the keys.

In [6]:
```
dict = {'abc':7, 'def':11, 'ghi':13, 'jkl':17, 'mno':19}
print(dict.keys())
```

```
dict_keys(['abc', 'def', 'ghi', 'jkl', 'mno'])
```

(c) Loop over the dictionary and print out all the keys and their associated values.

In [7]:
```
for k in dict.keys():
    print (k, dict[k])
```

```
abc 7
def 11
ghi 13
jkl 17
mno 19
```

(d) Use an if statement to check if the dictionary contains the key 'pqr' and print out an appropriate message indicating whether it does or doesn't.

In [9]:
```
dict = {'abc':7, 'def':11, 'ghi':13, 'jkl':17, 'mno':19}
for key, value in dict.items():
    if key == 'pqr':
        print("Provided dictionary containing 'pqr' string")
        break
else:
    print("Provided dictionary doesn't containing 'pqr' string")
```

```
Provided dictionary doesn't containing 'pqr' string
```

In [10]:
```
dict = {'abc':7, 'def':11, 'ghi':13, 'jkl':17, 'mno':19, 'pqr':24}
for key, value in dict.items():
    if key == 'pqr':
        print("Provided dictionary containing 'pqr' string")
        break
else:
    print("Provided dictionary doesn't containing 'pqr' string")
```

```
Provided dictionary containing 'pqr' string
```

(e) Change the value associated with the key 'abc' to 23 and then print out all the values in the dictionary using the values() method.

In [11]:
```
dict['abc'] = 23
dict
```

Out[11]:
```
{'abc': 23, 'def': 11, 'ghi': 13, 'jkl': 17, 'mno': 19, 'pqr': 24}
```