

WEEK4:Assignment

In [ ] :

Q1.TEAM ASSESSMENTS

The Team Leader of Testing team of XYZ company decided to assess the team members by organising a programming event. So he gave the team a task. The task **is** given an array of size N, find the number of distinct elements **in** the array **and** print them **in** ascending order. Those members who answer, will get some reward. Write a program to help the Team Leader to evaluate the solutions of the team members.

Input format:  
The first line contains a single integer that denotes the size of the array, N.  
The second line contains N space separated integer values of the array.

Output format:  
The first line **is** an integer that denotes the number of the distinct elements i nth array.  
The second line **is** a series of integers seperated by space that denotes the distinct elements.

Sample Input 1:  
5  
1 2 1 2 1  
Sample Output 1:  
2  
1 2

Sample Input 2:  
5  
145 25 21 25 36  
Sample Output 2:  
4  
21 25 36 145

In [1]:

```
size_of_array=int(input())
series_of_integers=sorted(set(map(int ,input().split(" "))))
print(len(series_of_integers))
for i in series_of_integers:
    print(i,end=" ")

5
145 25 21 25 36
4
21 25 36 145
```

In [ ] :

Q2.ANUSHKA’S PROBLEM

Anuska has created a robot that will take instructions **and** work accordingly. Due to budget problem, she has set the memory low. To overcome that, she has to encode the instruction. Given the instruction S, count the consecutive characters **and** each character will be folowed by its frequency. For example, **if** the instruction **is** "aaaabb", the encoded instruction **is** "a4b2".

Note:If the frequency **is** one, the count need **not** be printed.

Input format:  
The first input **is** a string that denotes the instruction, S.

Output format  
Output **is** a string that denotes the encoded string.

Sample input 1:  
aaaabb  
Sample output 1:  
a4b2

Sample input 2:  
sggvvvgss  
Sample output 2:  
sg2v3gs2

In [2]:

```
input_string=input()
s=input_string[0]
c=0
for i in input_string[1:]:
    if i==s[c]:
        s+=i
        c+=1
    elif i!=s[c]:
        s+=" "
        s+=i
        c+=2
n=s.split(" ")
final_string=""
for j in n:
    if len(j)>1:
        final_string+=j[0]+str(len(j))
    else:
        final_string+=j[0]
print(final_string)

aaaahgdddh
a4hgd3h
```

In [ ] :

Q3.SKILL TESTING Amar's team is assigned with a project that deals with the digital signals.

He **is** aware that the digital signals will be represented **as** arrays. He wants to test his team **with** respect to their strength **in** arrays.As part of the skill testing, the task **is as** follows. You are given an array of integers of size N. Consider all its contiguous subarrays of length k **and** find the maximum sum. Do this **for** all k **from** 1 to the length of the input array. Write a program to evaluate the task done by the kids.

Input format: The first line contains a single integer denotes the size of the array, N.  
The second line contains N-space separated integer that corresponds to the values of the array.

Output format: The output consists of N-space separated integer values of the result array.

Sample Input 1: 5 -1 2 1 3 -2 Sample Output 1: 3 4 6 5 3

Explanation: For inputArray = [-1, 2, 1, 3, -2], the output should be [3, 2, 1, 0, 0].  
The contiguous subarray of K = 1, each subarray will have 1 element. The sub-array **with** maximum sum **is** [3].  
So result[0] = 3. of K = 2, each subarray will have 2 elements. The sub-array **with** maximum sum **is** [1,3].  
So result[1] = 4. of K = 3, each subarray will have 3 elements. The sub-array **with** maximum sum **is** [2,1,3].  
So result[2] = 6. of K = 4, each subarray will have 4 elements. The sub-array **with** maximum sum **is** [-1,2,1,3].  
So result[1] = 5. of K = 5, each subarray will have 5 elements. The sub-array **with** maximum sum **is** [-1,2,1,3,-2].  
So result[1] = 3. So the result array **is** [3, 4, 6, 5, 3].

Sample Input 2: 5 2 3 2 -2 3 Sample Output 2: 3 5 7 6 8

In [3]:

```
size_of_array=int(input())
array=list(map(int ,input().split()))
l=[]
for i in range(len(array)+1):
    for j in range(i+1,len(array)+1):
        l.append(array[i:j])
final_list=[]
for i in range(1,size_of_array+1):
    nl=[]
    for j in 1:
        if i==len(j):
            nl.append(j)
    s=list(map(sum,nl))
    final_list.append(max(s))
for i in final_list:
    print(i,end=" ")

5
2 3 2 -2 3
3 5 7 6 8
```

In [ ] :