Ex. No. : 5.5 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Count Chars

Write a python program to count all letters, digits, and special symbols respectively from a given string

For example:

Input	Result
rec@123	3 3 1

Program:

```
x=input()
a,b,c=0,0,0
for i in x:
    if(i.isalpha()):
        a+=1
    elif(i.isalnum()):
        b+=1
    else:
        c+=1
print(a,b,c,sep="\n")
```


	Input	Expected	Got	
✔	rec@123	3 3 1	3 3 1	✔
✔	P@#yn26at^&i5ve	8 3 4	8 3 4	✔
✔	abc@12&	3 2 2	3 2 2	✔

Ex. No. : 5.6 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Reverse String

Reverse a string without affecting special characters. Given a string S, containing special characters and all the alphabets, reverse the string without affecting the positions of the special characters.
Input:
A&B
Output:
B&A
Explanation: As we ignore '&' and
As we ignore '&' and then reverse, so answer is "B&A".

For example:

Input Result
A&x#
x&A#

Program:

```
s=input()
l=[]
for i in s:
    if(i.isalpha()):
        l.append(i)
l.reverse()
r=''
index=0
for i in s:
    if(i.isalpha()):
        r+=l[index]
```

```
        index+=1
    else:
        r+=i
print(r)
```

	Input	Expected	Got	
✔	A&B	B&A	B&A	✔

Ex. No. : 5.7 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Longest Word

Write a python to read a sentence and print its longest word and its length

For example:

Input	Result
This is a sample text to test	sample 6

Program:

```
sen=input()
words=sen.split()
l=""
maxi=0
for word in words:
    if(len(word)>maxi):
        l=word
        maxi=len(word)
print(l,maxi,sep="\n")
```

	Input	Expected	Got	
✔	This is a sample text to test	sample 6	sample 6	✔
✔	Rajalakshmi Engineering College, approved by AICTE	Rajalakshmi 11	Rajalakshmi 11	✔
✔	Cse IT CSBS MCT	CSBS 4	CSBS 4	✔

Ex. No. : 5.8 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Remove Palindrome Words

String should contain only the words are not palindrome.

Sample Input 1
Malayalam is my mother tongue

Sample Output 1
is my mother tongue

Program:

```
s=input()
words=s.split()
x=''
for word in words:
    word=word.lower()
    if (word!=word[::-1]):
        print(word,end=" ")
```

	Input	Expected	Got	
✔	Malayalam is my mother tongue	is my mother tongue	is my mother tongue	✔

Ex. No. : 5.9 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Remove Characters

Given two Strings s1 and s2, remove all the characters from s1 which is present in s2.

Constraints
1<= string length <= 200

Sample Input 1
experience
enc
Sample Output 1
xpri

Program:

```
s1=input()
s2=input()
x=''.join(char for char in s1 if char not in s2)
print(x)
```

	Input	Expected	Got	
✔	experience enc	xpri	xpri	✔

Ex. No. : 5.10 **Date: 17.04.24**

Register No.: 231901035 **Name: Nitheesh K K**

Unique Names

In this exercise, you will create a program that reads words from the user until the user enters a blank line. After the user enters a blank line your program should display each word entered by the user exactly once. The words should be displayed in the same order that they were first entered. For example, if the user enters:

Input:
first
second
first
third
second

then your program should display:

Output:
first
second
third

Program:

```
l=[]
while(True):
    a=input()
    if a!=" ":
        l.append(a)
    else:
        break
l=dict.fromkeys(l)
```

```
for i in l:
    print(i)
```

	Input	Expected	Got	
✔	first second first third second	first second third	first second third	✔
✔	rec cse it rec cse	rec cse it	rec cse it	✔

06 - List in Python

Ex. No. : 6.1 **Date: 04.05.24**

Register No.:231901035 **Name: Nitheesh K K**

Element Insertion

Consider a program to insert an element / item in the sorted array. Complete the logic by filling up required code in editable section. Consider an array of size 10. The eleventh item is the data is to be inserted.

Sample Test Cases

Test Case 1

Input

1
3
4
5
6
7
8
9
10
11
2

Output

ITEM to be inserted:2
After insertion array is:
1
2
3
4
5
6
7
8
9
10
11

Test Case 2

Input

11
22
33

55
66
77
88
99
110
120
44
Output
ITEM to be inserted:44
After insertion array is:
11
22
33
44
55
66
77
88
99
110
120

Program:

```
x=[]
for i in range(0,11):
    b=int(input())
    x.append(b)
#a.sort()
print("ITEM to be inserted:",x[-1],sep='')
x.sort()
print("After insertion array is:")
for i in x:
    print(i)
```

	Input	Expected	Got	
✔	1 3 4 5 6 7 8 9 10 11 2	ITEM to be inserted:2 After insertion array is: 1 2 3 4 5 6 7 8 9 10 11	ITEM to be inserted:2 After insertion array is: 1 2 3 4 5 6 7 8 9 10 11	✔
✔	11 22 33 55 66 77 88 99 110 120 44	ITEM to be inserted:44 After insertion array is: 11 22 33 44 55 66 77 88 99 110 120	ITEM to be inserted:44 After insertion array is: 11 22 33 44 55 66 77 88 99 110 120	✔

Ex. No. : 6.2 **Date: 04.05.24**

Register No.:231901035 **Name: Nitheesh K K**

Anagram

Given two lists A and B, and B is an anagram of A. B is an anagram of A means B is made by randomizing the order of the elements in A.

We want to find an *index mapping* P, from A to B. A mapping P[i] = j means the ith element in A appears in B at index j.

These lists A and B may contain duplicates. If there are multiple answers, output any of them.

For example, given

Input

5

12 28 46 32 50

50 12 32 46 28

Output

1 4 3 2 0

Explanation

A = [12, 28, 46, 32, 50]

B = [50, 12, 32, 46, 28]

We should return

[1, 4, 3, 2, 0]

as P[0] = 1 because the 0th element of A appears at B[1], and P[1] = 4 because the 1st element of A appears at B[4], and so on.

Note:

1. A, B have equal lengths in range [1, 100].
2. A[i], B[i] are integers in range [0, 10^5].

Program:

```
def index_mapping(A, B):
    index_map = {num: i for i, num in enumerate(B)}
    return ' '.join(str(index_map[num]) for num in A)
n=int(input())
A = list(map(int, input().split()))
B = list(map(int, input().split()))
print(index_mapping(A, B))
```

	Input	Expected	Got	
✔	5 12 28 46 32 50 50 12 32 46 28	1 4 3 2 0	1 4 3 2 0	✔

Ex. No. : 6.3 **Date: 04.05.24**

Register No.: 231901035 **Name: Nitheesh K K**

Merge Two Sorted Arrays Without Duplication

Output is a merged array without duplicates.

Input Format
N1 - no of elements in array 1
Array elements for array 1
N2 - no of elements in array 2
Array elements for array2
Output Format
Display the merged array

Sample Input 1

5

1

2

3

6

9

4

2

4

5

10

Sample Output 1

1 2 3 4 5 6 9 10

Program:

```
n1=int(input())
l1=[]
for i in range(0,n1):
    a=int(input())
    l1.append(a)
n2=int(input())
l2=[]
for i in range(0,n2):
    a=int(input())
    l2.append(a)
l3=[]
l3.extend(l1)
l3.extend(l2)
a=list(set(l3))
a.sort()
for i in a:
    print(i,end=' ') n1=int(input())
l1=[]
for i in range(0,n1):
    a=int(input())
    l1.append(a)
n2=int(input())
l2=[]
for i in range(0,n2):
    a=int(input())
    l2.append(a)
l3=[]
l3.extend(l1)
l3.extend(l2)
a=list(set(l3))
a.sort()
for i in a:
    print(i,end=' ')
```


	Input	Expected	Got	
✔	5 1 2 3 6 9 4 2 4 5 10	1 2 3 4 5 6 9 10	1 2 3 4 5 6 9 10	✔
✔	7 4 7 8 10 12 30 35 9 1 3 4 5 7 8 11 13 22	1 3 4 5 7 8 10 11 12 13 22 30 35	1 3 4 5 7 8 10 11 12 13 22 30 35	✔

Ex. No. : 6.4 **Date: 04.05.24**

Register No.: 231901035 **Name: Nitheesh K K**

Distinct Elements in an Array

Program to print all the distinct elements in an array. Distinct elements are nothing but the unique (non-duplicate) elements present in the given array.
Input Format:
First line take an Integer input from stdin which is array length n.
Second line take n Integers which is inputs of array.
Output Format:
Print the Distinct Elements in Array in single line which is space Separated

Example Input:
5
1
2
2
3
4
Output:
1 2 3 4
Example Input:
6
1
1
2
2
3
3
Output:
1 2 3

For example:

Input	Result
5 1 2 2 3 4	1 2 3 4
6 1 1 2 2 3 3	1 2 3

Program:

```
n = int(input())
arr = []
for _ in range(n):
    arr.append(int(input()))
distinct_elements = set(arr)
print(*distinct_elements)
```


	Input	Expected	Got	
✔	5 1 2 2 3 4	1 2 3 4	1 2 3 4	✔
✔	6 1 1 2 2 3 3	1 2 3	1 2 3	✔

Ex. No. : 6.5 **Date: 04.05.24**

Register No.: 231901035 **Name: Nitheesh K K**

The Pivot

Given an array of numbers, find the index of the smallest array element (the pivot), for which the sums of all elements to the left and to the right are equal. The array may not be reordered.

Example

arr=[1,2,3,4,6]

- the sum of the first three elements, 1+2+3=6. The value of the last element is 6.
- Using zero based indexing, arr[3]=4 is the pivot between the two subarrays.
- The index of the pivot is 3.

Constraints

- $3 \leq n \leq 10^5$
- $1 \leq arr[i] \leq 2 \times 10^4$, where $0 \leq i < n$
- It is guaranteed that a solution always exists.

The first line contains an integer n, the size of the array arr.

Each of the next n lines contains an integer, arr[i], where $0 \leq i < n$.

Sample Case 0

Sample Input 0

4

1

2

3

3

Sample Output 0

2

Explanation 0

- The sum of the first two elements, 1+2=3. The value of the last element is 3.

- Using zero based indexing, arr[2]=3 is the pivot between the two subarrays.
- The index of the pivot is 2.

Sample Case 1

Sample Input 1

3

1

2

1

Sample Output 1

1

Explanation 1

- The first and last elements are equal to 1.
- Using zero based indexing, arr[1]=2 is the pivot between the two subarrays.
- The index of the pivot is 1.

For example:

Input	Result
4 1 2 3 3	2
3 1 2 1	1

Program:

```
a = int(input())
b= []
for i in range(a):
    element = int(input())
    b.append(element)
total= sum(b)
left= 0
right = total- b[0]
if left== right:
    print(0)
    exit()
for i in range(1, a):
    left+= b[i - 1]
    right-= b[i]
    if left== right:
        print(i)
        break
```

	Input	Expected	Got	
✔	4 1 2 3 3	2	2	✔
✔	3 1 2 1	1	1	✔