Count Chars

Writeapythonprogramtocountallletters,digits,andspecialsymbolsrespectivelyfromagiven 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.: 231901018 **Name: Kavin Sainath S**

Reverse String

Reverseastringwithoutaffectingspecialcharacters.GivenastringS,containingspecial charactersandallthealphabets,reversethestringwithoutaffectingthepositionsofthespecial characters.

Input:
A&B
Output:
B&A
Explanation:Asweignore'&'and Asweignore'&'andthenreverse,soansweris"B&A".

Forexample:

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.: 231901018 **Name: Kavin Sainath S**

Longest Word

Writeapythontoreadasentenceandprintitslongestwordanditslength

For example:

Input	Result
Thisisasampletexttotest	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.: 231901018 **Name: Kavin Sainath S**

Remove Palindrome Words

Stringshouldcontainonlythewordsarenotpalindrome.

SampleInput1
Malayalamismymothertongue

SampleOutput1
ismymothertongue

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.: 231901018 **Name: Kavin Sainath S**

Remove Characters

GiventwoStringss1ands2,removeallthecharactersfroms1whichispresentins2.

Constraints
1< =stringlength< =200

SampleInput1
experience
enc
SampleOutput1
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.: 231901018 **Name: Kavin Sainath S**

Unique Names

Inthisexercise,youwillcreateaprogramthatreadswordsfromtheuseruntiltheuserentersablank line.Aftertheuserentersablanklineyourprogramshoulddisplayeachwordenteredbytheuser exactlyonce.Thewordsshouldbedisplayedinthesameorderthattheywerefirstentered.For example,iftheuserenters:

Input:
first
second
first
third
second

thenyourprogramshoulddisplay:

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.:231901018 **Name: Kavin Sainath S**

Element Insertion

Consideraprogramtoinsertanelement/iteminthesortedarray.Completethelogicbyfillingup requiredcodeineditablesection.Consideranarrayofsize10.Theeleventhitemisthedataistobe inserted.

SampleTestCases

TestCase1

Input

1

3

4

5

6

7

8

9

10

11

2

Output

ITEMtobeinserted:2

Afterinsertionarrayis:

1

2

3

4

5

6

7

8

9

10

11

TestCase2

Input

11

22
33
55
66
77
88
99
110
120
44
Output
ITEMtobeinserted:44
Afterinsertionarrayis:
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.:231901018 **Name: Kavin Sainath S**

Anagram

Giventwolists Aand B,and B isananagramof A. B isananagramof A means B ismadeby randomizingtheorderoftheelementsin A.

Wewanttofindan *index mapping* P,from A to B.Amapping P[i]=j meansthe ith elementin A appearsin B atindex j.

Theselists A and B maycontainduplicates.Iftherearemultipleanswers,outputanyof them.

Forexample,given

Input

5

1228463250

5012324628

Output

14320

Explanation

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

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

Weshouldreturn

[1,4,3,2,0]

as P[0]=1 becausethe 0thelementof A appearsat B[1],and P[1]=4 becausethe 1st elementof A appearsat B[4],andsoon.

Note:

1. A,B haveequallengthsinrange [1,100].
2. A[i],B[i] areintegersinrange [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.: 231901018 **Name: Kavin Sainath S**

Merge Two Sorted Arrays Without Duplication

Outputisamergedarraywithoutduplicates.

InputFormat
N1-noofelementsinarray1
Arrayelementsforarray1
N2-noofelementsinarray2
Arrayelementsforarray2
OutputFormat
Displaythemergedarray

Sample Input 1

5
1
2
3
6
9
4
2
4
5
10

Sample Output 1

123456910

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.: 231901018 **Name: Kavin Sainath S**

Distinct Elements in an Array

Programtoprintallthedistinctelementsinanarray.Distinctelementsarenothingbuttheunique (non-duplicate)elementspresentinthegivenarray.
InputFormat:
FirstlinetakeanIntegerinputfromstdinwhichisarraylengthn.
SecondlinetakenIntegerswhichisinputsofarray.
OutputFormat:
PrinttheDistinctElementsinArrayinsinglelinewhichisspaceSeparated

ExampleInput:
5
1
2
2
3
4
Output:
1234
ExampleInput:
6
1
1
2
2
3
3
Output:
123

For example:

Input	Result
5 1 2 2 3 4	1234
6 1 1 2 2 3 3	123

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.: 231901018 **Name: Kavin Sainath S**

The Pivot

Givenanarrayofnumbers,findtheindexofthesmallestarrayelement(thepivot),forwhichthesums ofallelementstotheleftandtotherightareequal.Thearraymaynotbereordered.

Example

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

- thesumofthefirstthreeelements,1+2+3=6.Thevalueofthelastelementis6.
- Usingzerobasedindexing,arr[3]=4isthepivotbetweenthetwosubarrays.
- Theindexofthepivotis3.

Constraints

- $3 \leq n \leq 10^5$
- $1 \leq arr[i] \leq 2 \times 10^4$,where$0 \leq i < n$
- Itisguaranteedthatasolutionalwaysexists.

Thefirstlinecontainsanintegern,thesizeofthearrayarr.

Eachofthenextnlinescontainsaninteger,arr[i],where$0 \leq i < n$.

SampleCase0

SampleInput0

4

1

2

3

3

SampleOutput0

2

Explanation0

- Thesumofthefirsttwoelements,1+2=3.Thevalueofthelastelementis3.
- Usingzerobasedindexing,arr[2]=3isthepivotbetweenthetwosubarrays.
- Theindexofthepivotis2.

SampleCase1

SampleInput1

3

1

2

1

SampleOutput1

1

Explanation1

- Thefirstandlastelementsareequalto1.
- Usingzerobasedindexing,arr[1]=2isthepivotbetweenthetwosubarrays.
- Theindexofthepivotis1.

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	✔

Ex. No. : 6.6 **Date: 04.05.24**

Register No.: 231901018 **Name: Kavin Sainath S**

Intersection of array

Findtheintersectionoftwosortedarrays.

ORinotherwords,

Given2sortedarrays,findalltheelementswhichoccurinboththearrays.

InputFormat

ThefirstlinecontainsT,thenumberoftestcases.FollowingTlinescontain:

1. Line1containsN1,followedbyN1integersofthefirstarray
2. Line2containsN2,followedbyN2integersofthesecondarray

OutputFormat

Theintersectionofthearraysinasingleline

Example

Input:

1

3101757

627101557246

Output:

1057

Input:

1

7

1

2

3

3

4

5

6

2

1

6

Output:

16

For example:

Input	Result
1 3 10 17 57 6 2 7 10 15 57 246	1057
1	16

Input	Result
7 1 2 3 3 4 5 6 2 1 6	

Program:

```
t=int(input())
l1=list()
while(t!=0):
    n1=int(input())
    l1=[]
    l2=[]
    for i in range(0,n1):
        a=int(input())
```

```
    l1.append(a)
n2=int(input())
for i in range(0,n2):
    a=int(input())
    l2.append(a)
t=t-1
c=set(l1)
d=set(l2)
e=list(c.intersection(d))
e.sort()
for i in e:
    print(i,end=' ')
print('\n')
```

	Input	Expected	Got	
✔	1 3 10 17 57 6 2 7 10 15 57 246	10 57	10 57	✔
✔	1 7 1 2 3 3 4 5 6 2 1 6	1 6	1 6	✔