# 08 - Tuple/Set

Ex. No. : 8.1 Date:22.5.24

Register No : 231501150 Name: SHALINI SURESH

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# **Binary String**

Coders here is a simple task for you, Given string str. Your task is to check whether it is a binary string or not by using python set.

Examples:

Input: str = "01010101010"

Output: Yes

Input: str = "REC101"

Output: No

#### For example:

Input	Result
01010101010	Yes
010101 10101	No

```
a = input()
try:
    c = int(a)
    print("Yes")
except:
```



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# **Check Pair**

Given a tuple and a positive integer k, the task is to find the count of distinct pairs in the tuple whose sum is equal to K.

### **Examples:**

**Input**: t = (5, 6, 5, 7, 7, 8), K = 13

Output: 2 Explanation:

Pairs with sum K(=13) are  $\{(5, 8), (6, 7), (6, 7)\}$ .

Therefore, distinct pairs with sum K(=13) are  $\{(5, 8), (6, 7)\}$ .

Therefore, the required output is 2.

### For example:

Input	Result
1,2,1,2,5 3	1
1,2 0	0

# Program:

```
t = input()
```

k = int(input())

a = t.split(",")

l = [int(x) for x in a]

count = 0

x = set()

```
for i in range(len(l)):
    for j in range(i + 1, len(l)):
        if l[i] + l[j] == k:
        s = (l[i], l[j])
        if s not in x and (l[j], l[i]) not in x:
            count += 1
            x.add(s)

print(count)
```

~	5,6,5,7,7,8	2		
	13	2	2	~
~	1,2,1,2,5	1	1	~
~	1,2	0	0	~

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# **DNA Sequence**

The **DNA** sequence is composed of a series of nucleotides abbreviated as 'A', 'C', 'G', and 'T'.

For example, "ACGAATTCCG" is a **DNA sequence**.

When studying **DNA**, it is useful to identify repeated sequences within the DNA.

Given a string s that represents a **DNA sequence**, return all the 10-letter-long sequences (substrings) that occur more than once in a DNA molecule. You may return the answer in **any order**.

### Example 1:

Input: s = "AAAAACCCCCCAAAAACCCCCCAAAAAGGGTTT"

Output: ["AAAAACCCCC","CCCCCAAAAA"]

Example 2:

Input: s = "AAAAAAAAAAA"

Output: ["AAAAAAAAA"]

#### For example:

Input	Result
AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA

```
s = input()
j = []
repeated = set()
for i in range(len(s) - 9):
```

```
sequence = s[i:i+10]
if sequence in j:
    repeated.add(sequence)
else:
    j.append(sequence)
l=list(repeated)
l=list(reversed(l))
for i in l:
    print(i)
```

	Input	Expected	Got	
<b>~</b>	AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA	AAAAACCCCC CCCCCAAAAA	<b>~</b>
~	АААААААААА	АААААААА	АААААААА	~
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## Print repeated no

Given an array of integers nums containing n + 1 integers where each integer is in the range [1, n] inclusive. There is only **one repeated number** in nums, return this repeated number. Solve the problem using <u>set</u>.

### Example 1:

```
Input: nums = [1,3,4,2,2]
Output: 2
```

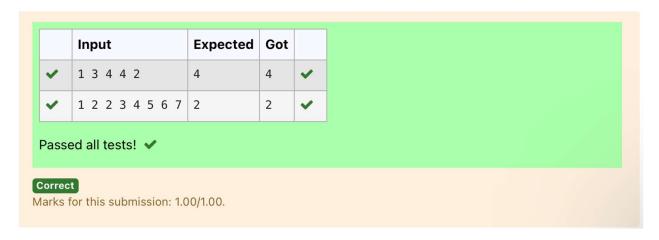
### Example 2:

```
Input: nums = [3,1,3,4,2]
Output: 3
```

### For example:

Input	Result
1 3 4 4 2	4

```
n =input().split(" ")
n = list(n)
for i in range(len(n)):
   for j in range(i+1,len(n)):
      if n[i] == n[j]:
        print(n[i])
      exit(0)
```



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## Remove repeated

Write a program to eliminate the common elements in the given 2 arrays and print only the non-repeating elements and the total number of such non-repeating elements.

## Input Format:

The first line contains space-separated values, denoting the size of the two arrays in integer format respectively.

The next two lines contain the space-separated integer arrays to be compared.

## Sample Input:

5 4

12865

26810

### Sample Output:

1510

3

### Sample Input:

5 5

12345

12345

#### Sample Output:

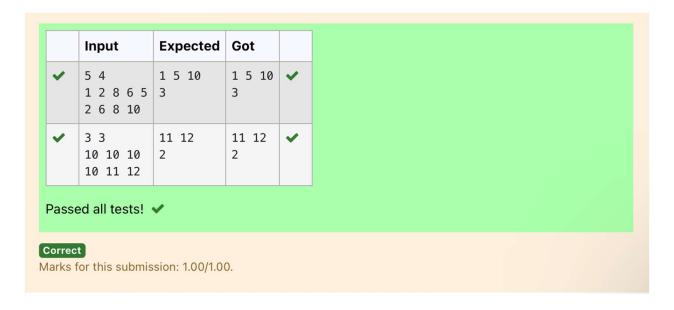
NO SUCH ELEMENTS

## For example:

Input	Result
5 4	1 5 10

Input	Result
1 2 8 6 5 2 6 8 10	3

```
a=input()
d=[]
b=input()
c=input()
b=tuple(b.split(" "))
c=tuple(c.split(" "))
for i in b:
  if i not in c:
     d.append(i)
for i in c:
  if i not in b:
     d.append(i)
for i in range(len(d)):
  print(int(d[i]),end=' ')
print()
print(len(d))
```



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# **Malfunctioning Keyboard**

There is a malfunctioning keyboard where some letter keys do not work. All other keys on the keyboard work properly.

Given a string text of words separated by a single space (no leading or trailing spaces) and a string brokenLetters of all distinct letter keys that are broken, return the number of words in text you can fully type using this keyboard.

#### Example 1:

Input: text = "hello world", brokenLetters = "ad"

Output:

1

Explanation: We cannot type "world" because the 'd' key is broken.

### For example:

Input	Result
hello world ad	1

```
Program:

a=input()

b=input()

c=set()

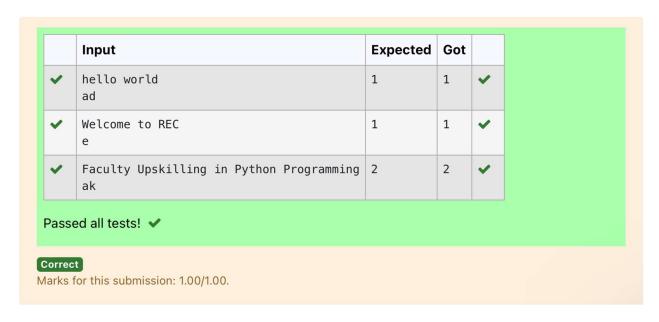
for i in a:

for j in b:

if j in i:

c.add(i)
```

# print(len(c))



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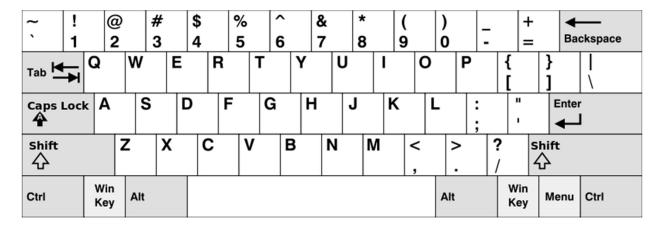
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## American keyboard

Given an array of strings words, return the words that can be typed using letters of the alphabet on only one row of American keyboard like the image below.

### In the American keyboard:

- the first row consists of the characters "gwertyuiop",
- the second row consists of the characters "asdfghjkl", and
- the third row consists of the characters "zxcvbnm"



### Example 1:

Input: words = ["Hello","Alaska","Dad","Peace"]

Output: ["Alaska","Dad"]

Example 2:

**Input:** words = ["omk"]

Output: [] Example 3:

Input: words = ["adsdf", "sfd"]

Output: ["adsdf","sfd"]

### For example:

Input	Result
4 Hello Alaska Dad Peace	Alaska Dad

```
def findWords(words):
  row1 = set('qwertyuiop')
  row2 = set('asdfghjkl')
  row3 = set('zxcvbnm')
  result = []
  for word in words:
    w = set(word.lower())
    if w.issubset(row1) or w.issubset(row2) or w.issubset(row3):
      result.append(word)
  if len(result) == 0:
    print("No words")
  else:
    for i in result:
      print(i)
a = int(input())
arr = [input() for i in range(a)]
findWords(arr)
```

