08 - Tuple/Set

Ex. No. : 8.1 Date:22.5.24

Register No : 231501189 Name: K.Yuvashree

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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:
    print("No")
```



Ex. No. : 8.2 Date:22.5.24

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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	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)):

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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)
```

	Input	Expected	Got	
~	5,6,5,7,7,8 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 = "AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT"

Output: ["AAAAACCCCC","CCCCCAAAAA"]

Example 2:

Input: s = "AAAAAAAAAAA" Output: ["AAAAAAAAA"]

For example:

Input	Result
AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCAAAAA

```
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	
~	AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA	AAAAACCCCC CCCCCAAAAA	~
~	AAAAAAAAAAA	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 set.

Example 1:

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

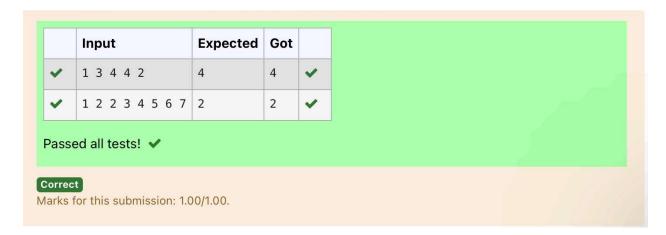
Example 2:

```
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)
```



Ex. No. : 8.5 Date:22.5.24

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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:

1 5 10

3

Sample Input:

5 5

12345

12345

Sample Output:

NO SUCH ELEMENTS

For example:

Input	Result
5 4	1 5 10
1 2 8 6 5	3

Input	Result
2 6 8 10	

```
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))
```



Ex. No. : 8.6 Date:22.5.24

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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:

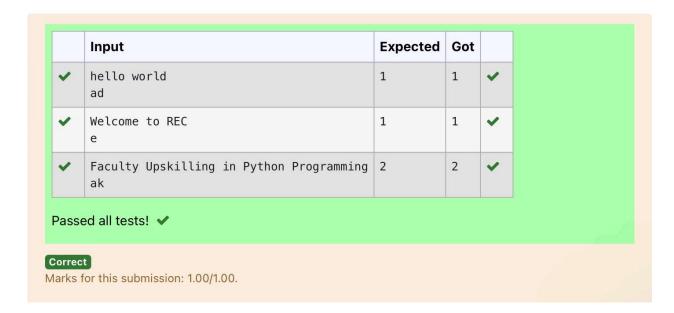
1

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))
```



Ex. No. : 8.7 Date:22.5.24

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American keyboard

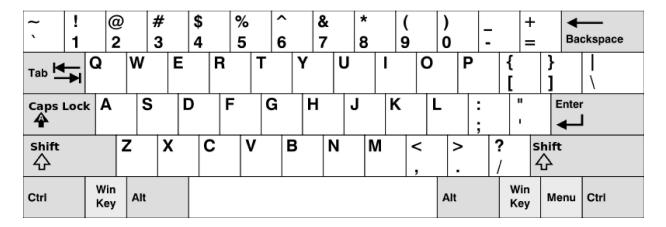
Given an array of strings words, return the words that can be typed using letters of the alphabet on only one row of American keyboard like the image below.

In the American keyboard:

• the first row consists of the characters "qwertyuiop",

• 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	Alaska

Input	Result
Hello Alaska Dad Peace	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)
```