08 – Tuple/Set

Examples:

Input: str = "01010101010"

Output: Yes

Input: str = "REC101"

Output: No

For example:

Input	Result
01010101010	Yes
010101 10101	No

Ex. No. : 8.1 **Date: 25.05.24**

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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.

```
s1=set(input())
if s1!={'0','1'}:
    print("No")
else:
    print("Yes")
```

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

Ex. No. : 8.2 **Date: 25.05.24**

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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**.

```
t = tuple(map(int, input().split(",")))
K = int(input())

pairs = set()

for i in range(len(t)):
    for j in range(i + 1, len(t)):
        if t[i] + t[j] == K:
            pairs.add((min(t[i], t[j]), max(t[i], t[j])))

print(len(pairs))
```

Example 1:

Input: s = "AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT"
Output: ["AAAAACCCCC","CCCCCAAAAA"]

Example 2:

Input: s = "AAAAAAAAAAAAA"
Output: ["AAAAAAAAAA"]

For example:

Input	Result
AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA

Ex. No. : 8.3 **Date: 25.05.24**

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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**.

```
s = input()

repeated_substrs = []

seen = set()

for i in range(len(s) - 9):
    substr = s[i:i + 10]

    if substr in seen and substr not in repeated_substrs:
        repeated_substrs.append(substr)
    else:
        seen.add(substr)



for substr in repeated_substrs:
    print(substr)
```

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

Ex. No. : 8.4 **Date: 25.05.24**

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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.

```
nums = list(map(int, input().split()))

seen = set()


for num in nums:
    if num in seen:
        print(num)
        break
    seen.add(num)
```

Sample Input:

5 4

1 2 8 6 5

2 6 8 10

Sample Output:

1 5 10

3

Sample Input:

5 5

1 2 3 4 5

1 2 3 4 5

Sample Output:

NO SUCH ELEMENTS

For example:

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

Ex. No. : 8.5 **Date: 25.05.24**

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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.

```
sizes = input().split()

size1 = int(sizes[0])

size2 = int(sizes[1])

array1 = list(map(int, input().split()))

array2 = list(map(int, input().split()))

set1 = set(array1)

set2 = set(array2)

uniqueset1 = set1 - set2

uniqueset2 = set2 - set1

non_repeating = uniqueset1.union(uniqueset2)

print(" ".join(map(str, sorted(non_repeating))))

print(len(non_repeating))
```

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

Ex. No. : 8.6 **Date: 25.05.24**

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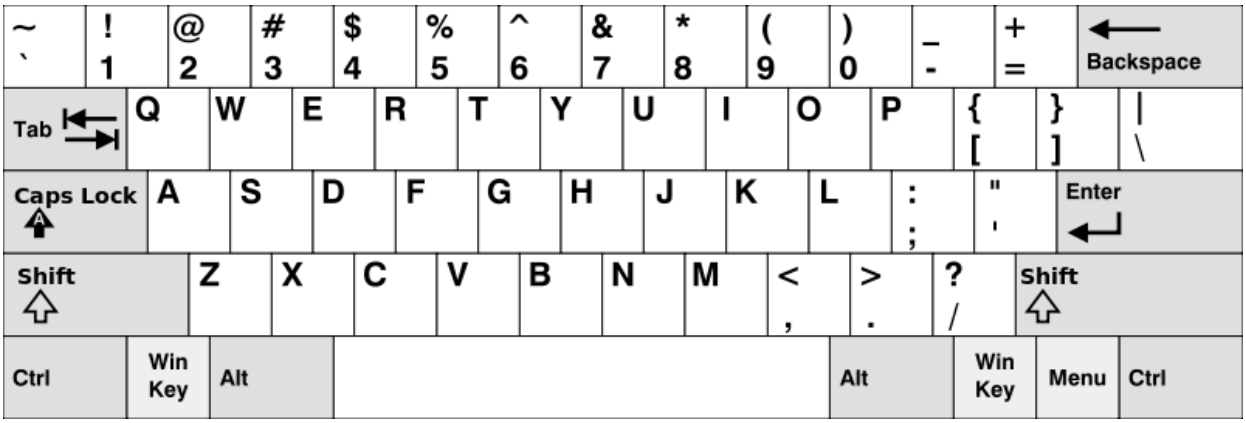
Malfunctioning Keyboard

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.

```
str1=input()
s1=set(input())
count=0
for i in s1:
    if i in str1:
        count+=1
print(count)
```



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

Ex. No. : 8.7 **Date: 25.05.24**

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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".

```
n=int(input())

lst=[]

op=[]

for i in range(n):

    lst.append(input())

s1={'q','w','e','r','t','y','u','i','o','p','Q','W','E','R','T','Y','U','I','O','P'}

s2={'a','s','d','f','g','h','j','k','l','A','S','D','F','G','H','J','K','L'}

s3={'z','x','c','v','b','n','m','Z','X','C','V','B','N','M'}

for i in lst:

    s=set(i)

    if s.issubset(s1) or s.issubset(s2) or s.issubset(s3):

        op.append(i)

if op==[]:

    print("No words")

else:
```

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