# 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:**

**Register No.:** **Name:**

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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.

## PROGRAM:

```
string1= input()


if set(string1).issubset({'0', '1'}):
    print("Yes")
else:
    print("No")
```

**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<br>3 | 1 |
| 1,2<br>0 | 0 |

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

**Register No.:** **Name:**

# 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**.

PROGRAM:

```
t=tuple(input().split(','))
k=int(input())
d=[]
for i in t:
    for j in t:
        if int(i)+int(j)==k:
            if (i,j) not in d:
                d.append((i,j))
print(len(d)//2)
```

**Example 1:**

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

**Example 2:**

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

**For example:**

| Input | Result |
|---|---|
| AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT | AAAAACCCCC<br>CCCCCAAAAA |

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

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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**.

PROGRAM:

```
def f(s):
   se= {}

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

      if seq in se:
         se[seq] += 1
      else:
         se[seq] = 1

   result = [seq for seq, count in se.items() if count > 1]

   return result
s1=input()
p=f(s1)
for i in p:
```

```
print(i)
```

### 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:**

**Register No.:** **Name:**

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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.

**PROGRAM:**

```
def f(n):
    se= set()

    for num in n:
        if num in se:
            return num
        se.add(num)

    return -1

def main():
    i= input()
    nums = list(map(int, i.split()))
    result = f(nums)
    print(result)
```

```
if 1:
    main()
```

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<br>1 2 8 6 5<br>2 6 8 10 | 1 5 10<br>3 |

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

**Register No.:** **Name:**

## 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.

PROGRAM:

```
size1, size2 = map(int, input().split())

arr1 = list(map(int, input().split()))

arr2 = list(map(int, input().split()))

unique_elements = set(arr1) ^ set(arr2)

if unique_elements:

    print(*unique_elements)

    print(len(unique_elements))

else:

    print("NO SUCH ELEMENTS")
```

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<br>ad | 1 |

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

**Register No.:** **Name:**

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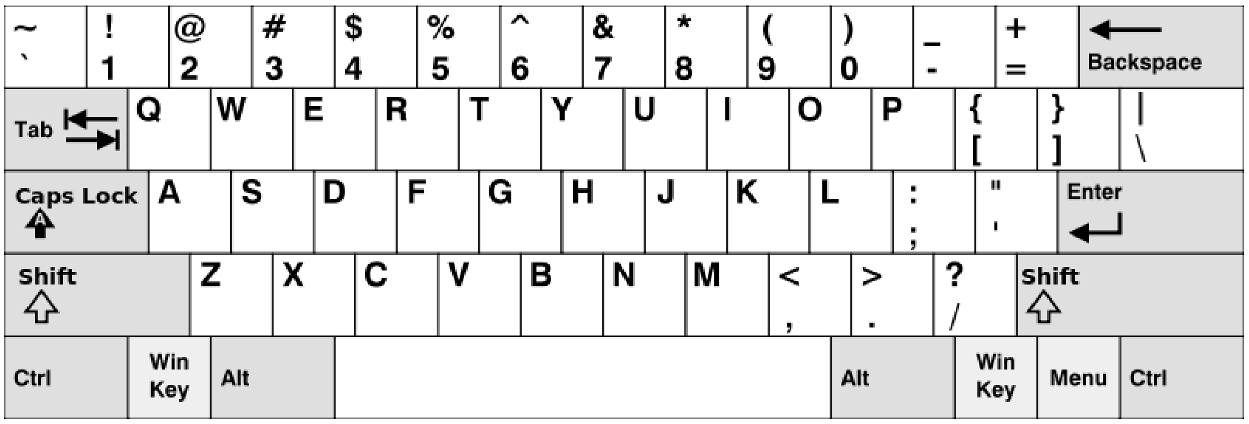
## Malfunctioning Keyboard

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.

## PROGRAM:

```
a=input().lower().split()
b=input()
c=0
for i in a:
   flag=0
   for j in i:
      if j in b:
         flag=1
         break
   if(flag==0):
      c+=1
print(c)
```


~ ` ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 ( 9 ) 0 _ - + = Backspace
Tab Q W E R T Y U I O P { [ } ] | \
Caps Lock A S D F G H J K L : ; " ' Enter
Shift Z X C V B N M < , > . ? / Shift
Ctrl Win Key Alt Alt Win Key Menu Ctrl

### 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<br>Hello<br>Alaska<br>Dad<br>Peace | Alaska<br>Dad |

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

**Register No.:** **Name:**

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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".

PROGRAM:

```
a=int(input())

c=[]

for i in range(a):

    b=input()

    c.append(b)

d=set('qwertyuiop')

e=set('asdfghjkl')

f=set('zxcvbnm')

g=[]

for word in c:

    h=set(word.lower())

    if(h<=d or h<=e or h<=f):

        g.append(word)

if not g:
    print("No words")
else:
    for i in g:
        print(i)
```