08 – Tuple/Set

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

Register No.: 231001063 **Name: HEMA PRABHA S**

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

```
#Binary
s=input()
c=0
for i in s:
    if i=='0' or i=='1':
        c=c+1
if c==len(s):
    print("Yes")
else:
    print("No")
```

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

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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

#Distinct pair

s=input()

k=int(input())

z=s.split(',')

l=[]

```
for i in range(0,len(z)):
    for j in range(i+1,len(z)):
        if int(z[i])+int(z[j])==k and [z[i],z[j]] not in l and [z[j],z[i]] not in l:
            l.append([z[i],z[j]])


print(len(l))
```

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**.

Example 1:

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

Example 2:

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

For example:

Input	Result
AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA

#DNA SQUENCE

s=input()

l=len(s)

w=[]

c=0

a=0

b=10

```
for i in range(0,len(s)-9):
    s1=s[a:b]
    if s1 in w and w.count(s1)==1:
        print(s1,end='\n')
    w.append(s1)

    a=a+1
    b=b+1
```

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

Register No.: 231001063 **Name: HEMA PRABHA S**

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

```
def find_duplicate(nums):
    seen = set()
    for num in nums:
        if num in seen:
            return num
        seen.add(num)
    return -1


nums1 = input().split()
nums1=[int(i) for i in nums1]
print(find_duplicate(nums1))
```

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

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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

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

```
#non repeating
a=input()
b=input()
c=input()
z1=b.split()
z2=c.split()
z=z1+z2
#print(z)
d=0
l=[]
for i in z:
    c=0
    if i in z2 and i in z1:
        c=1
    if c==0 and i not in l:
        print(i,end=' ')
        l.append(i)
        d=d+1
if len(l)==0:
    print("NO SUCH ELEMENTS")
print()
```

```
print(d)
```

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

Register No.: 231001063 **Name: HEMA PRABHA S**

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

```
#Keyboard
s1=input()
s=s1.lower()
a=list(input())
z=s.split()
d=0
```

```
for i in z:
    c=0
    for j in i:
        if j in a:
            c=1
            break
    if(c==0):
        d=d+1

print(d)
```

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

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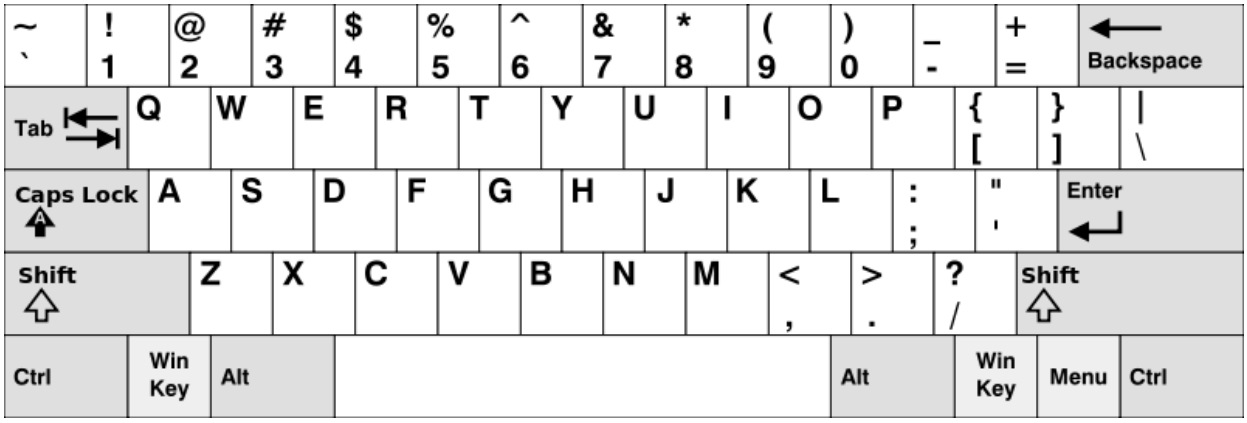
American keyboard

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 Hello Alaska Dad Peace	Alaska Dad

```
#american keyboard

kbRows = "qwertyuiop", "asdfghjkl", "zxcvbnm"

inList, outList = [input() for _ in range(int(input()))],[]


for word in inList:

    for row in kbRows:

        if set(word.lower()).issubset(set(row)):

            outList.append(word)


if outList : print(*outList, sep='\n'); exit();

print('No words')
```