**07 – Tuple/Set**

**Ex. No. : 7.1 Date: 27.05.24**

**Register No.: 231401037 Name: ILANKO M**

**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 |

PROGRAM:

str1=set(input())

if not(str1-{'0','1'}):

print("Yes")

else:

print("No")

|  | **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- | --- |
|  | 01010101010 | Yes | Yes |  |
|  | REC123 | No | No |  |
|  | 010101 10101 | No | No |  |

**Ex. No. : 7.2 Date: 27.05.24**

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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**.

**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:

def find\_pairs\_with\_sum(numbers, target\_sum):

numbers\_list = list(numbers)

pairs = set()

visited = set()

for number in numbers\_list:

complement = target\_sum - number

if complement in visited:

pair = tuple(sorted((number, complement)))

pairs.add(pair)

visited.add(number)

return pairs

numbers\_input = input("")

target\_sum = int(input(""))

numbers = tuple(map(int, numbers\_input.split(',')))

pairs = find\_pairs\_with\_sum(numbers, target\_sum)

print(f"{len(pairs)}")

| **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- |
|  | 5,6,5,7,7,8  13 | 2 | 2 |  |
|  | 1,2,1,2,5  3 | 1 | 1 |  |
|  | 1,2  0 | 0 | 0 |  |

**Ex. No. : 7.3 Date: 27.05.24**

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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".

**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 |
| 2  adsfd  afd | adsfd  afd |

**n=int(input())**

**b=[]**

**for i in range(0,n):**

**a=input()**

**b.append(a)**

**def find\_words(words):**

**keyboard\_rows = [**

**set("qwertyuiop"),**

**set("asdfghjkl"),**

**set("zxcvbnm")**

**]**

**result = []**

**for word in words:**

**word\_set = set(word.lower())**

**for row in keyboard\_rows:**

**if word\_set.issubset(row):**

**print(word)**

**result.append(word)**

**break**

**return result**

**c=find\_words(b)**

**if len(c)==0:**

**print("No words")**

| **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- |
|  | 4  Hello  Alaska  Dad  Peace | Alaska  Dad | Alaska  Dad |  |
|  | 1  omk | No words | No words |  |
|  | 2  adsfd  afd | adsfd  afd | adsfd  afd |  |

**Ex. No. : 7.4 Date: 27.05.24**

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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](http://118.185.187.137/moodle/mod/resource/view.php?id=734).

**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 |

**PROGRAM:**

a=list(input().split(" "))

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

for i in a:

if a.count(i)>1:

print(i)

break

|  | **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- | --- |
|  | 1 3 4 4 2 | 4 | 4 |  |
|  | 1 2 2 3 4 5 6 7 | 2 | 2 |  |

**Ex. No. : 7.5 Date: 27.05.24**

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**non-repeating**

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](https://www.rajalakshmicolleges.net/moodle/mod/quiz/view.php?id=5127) Input:

5 4

1 2 8 6 5

2 6 8 10

[Sample](https://www.rajalakshmicolleges.net/moodle/mod/quiz/view.php?id=5127) Output:

1 5 10

3

[Sample](https://www.rajalakshmicolleges.net/moodle/mod/quiz/view.php?id=5127)  Input:

5 5

1 2 3 4 5

1 2 3 4 5

[Sample](https://www.rajalakshmicolleges.net/moodle/mod/quiz/view.php?id=5127) Output:

NO SUCH ELEMENTS

**For example:**

| **Input** | **Result** |
| --- | --- |
| 5 4  1 2 8 6 5  2 6 8 10 | 1 5 10  3 |

def find\_non\_repeating(arr1, arr2):

set1 = set(arr1)

set2 = set(arr2)

non\_repeating = set1.symmetric\_difference(set2)

if non\_repeating:

print(\*non\_repeating)

print(len(non\_repeating))

else:

print("NO SUCH ELEMENTS")

# Sample Input parsing

sizes = input().split()

size1, size2 = map(int, sizes)

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

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

find\_non\_repeating(array1, array2)

| **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- |
|  | 5 4  1 2 8 6 5  2 6 8 10 | 1 5 10  3 | 1 5 10  3 |  |
|  | 3 3  10 10 10  10 11 12 | 11 12  2 | 11 12  2 |  |