08 – Tuple/Set

Ex. No. : 8.1 Date:

Register No.: Name:

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

def is\_binary\_string(s):

return set(s) <= {'0', '1'}

str1 = input()

print("Yes" if is\_binary\_string(str1) else "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

def count\_distinct\_pairs(t, K):

pair\_set = set()

seen = set()

count = 0

for num in t:

complement = K - num

if complement in seen and (complement, num) not in pair\_set and (num, complement) not in pair\_set:

pair\_set.add((complement, num))

count += 1

seen.add(num)

return count

t = tuple(int(x) for x in input().split(','))

K = int(input())

print(count\_distinct\_pairs(t, K))

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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

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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

a=input()

b=a.split()

c=set()

for i in b:

if i in c:

print(i)

break

else:

c.add(i)

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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

n, m = input().split()

n = int(n)

m = int(m)

arr1 = [int(x) for x in input().split()]

arr2 = [int(x) for x in input().split()]

non\_repeating\_elements = set(arr1).symmetric\_difference(set(arr2))

if non\_repeating\_elements:

print(\*non\_repeating\_elements)

print(len(non\_repeating\_elements))

else:

print("NO SUCH ELEMENTS")

Ex. No. : 8.6 Date:

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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

#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')