

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

Program:

```
a = input()
```

```
try:
```

```
    c = int(a)
```

```
    print("Yes")
```

```
except:
```

```
    print("No")
```

Output:

	Input	Expected	Got	
✓	01010101010	Yes	Yes	✓
✓	REC123	No	No	✓
✓	010101 10101	No	No	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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**.

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:

```
t = input()
```

```
k = int(input())
```

```
a = t.split(",")
```

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

```
count = 0
```

```
x = set()
```

```
for i in range(len(l)):
```

```

for j in range(i + 1, len(l)):
    if l[i] + l[j] == k:
        s = (l[i], l[j])
        if s not in x and (l[j], l[i]) not in x:
            count += 1
            x.add(s)

print(count)

```

Output:

	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	✓

Passed all tests! ✓

Correct

Ex. No. : 8.3

Date:

Register No.:

Name:

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 = "AAAAACCCCCAAAAACCCCCAAAAAGGGTTT"

Output: ["AAAAACCCCC", "CCCCCAAAAA"]

Example 2:

Input: s = "AAAAAAAAAAAAA"

Output: ["AAAAAAAAAA"]

For example:

Input	Result
AAAAACCCCCAAAAACCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA

Program:

```
s = input()
j = []
repeated = set()
for i in range(len(s) - 9):
    sequence = s[i:i+10]
    if sequence in j:
        repeated.add(sequence)
```

```
else:
    j.append(sequence)
l=list(repeated)
l=list(reversed(l))
for i in l:
    print(i)
```

Output:

	Input	Expected	Got	
✓	AAAAACCCCCAAAAACCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAA	AAAAACCCCC CCCCCAAAA	✓
✓	AAAAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 8.4

Date:

Register No.:

Name:

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

Program:

```
n=input().split(" ")
n = list(n)
for i in range(len(n)):
    for j in range(i+1,len(n)):
        if n[i] == n[j]:
            print(n[i])
            exit(0)
```

Output:

	Input	Expected	Got	
✓	1 3 4 4 2	4	4	✓
✓	1 2 2 3 4 5 6 7	2	2	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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.

[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

Program:

```
a=input()
d=[]
b=input()
c=input()
b=tuple(b.split(" "))
c=tuple(c.split(" "))
for i in b:
    if i not in c:
        d.append(i)
for i in c:
    if i not in b:
        d.append(i)
for i in range(len(d)):
    print(int(d[i]),end=' ')
print()
print(len(d))
```

Output:

	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	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 8.6

Date:

Register No.:

Name:

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

Program:

```
a=input()
b=input()
c=set()
for i in a:
    for j in b:
        if j in i:
            c.add(i)
print(len(c))
```

Output:

	Input	Expected	Got	
✓	hello world ad	1	1	✓
✓	Welcome to REC e	1	1	✓
✓	Faculty Upskilling in Python Programming ak	2	2	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 8.7

Date:

Register No.:

Name:

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"

~	!	@	#	\$	%	^	&	*	()	-	+	←
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 Hello Alaska Dad Peace	Alaska Dad

Program:

```
def findWords(words):  
    row1 = set('qwertyuiop')  
    row2 = set('asdfghjkl')  
    row3 = set('zxcvbnm')  
  
    result = []  
    for word in words:  
        w = set(word.lower())  
        if w.issubset(row1) or w.issubset(row2) or w.issubset(row3):  
            result.append(word)  
    if len(result) == 0:  
        print("No words")  
    else:  
        for i in result:  
            print(i)  
  
a = int(input())  
arr = [input() for i in range(a)]  
findWords(arr)
```

Output:

	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	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.