RAJALAKSHMI ENGINEERING COLLEGE

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RAJALAKSHMI
ENGINEERING COLLEGE

CS23221
PYTHON PROGRAMMING LAB

Laboratory Observation Note Book

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07 – Tuple/Set

Ex. No. : 7.1 **Date: 18.05.24**

Register No.: 230701344 **Name: Sriwanth sathish**

<u>Binary String</u>

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"

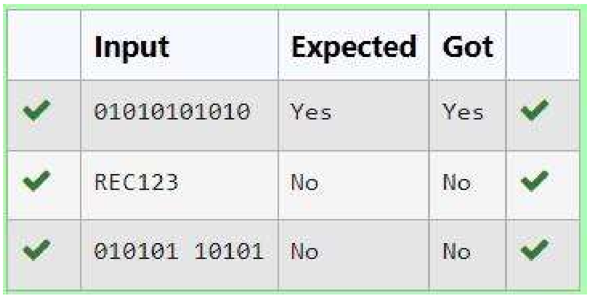
Output: No

For example:

Input	**Result**
01010101010	Yes
010101 10101	No

Program:

```
a = input() try:
   c = int(a)
print("Yes") except:
   print("No")
```



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

Ex. No. : 7.2 **Date: 18.05.24**

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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-letterlong** 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:**

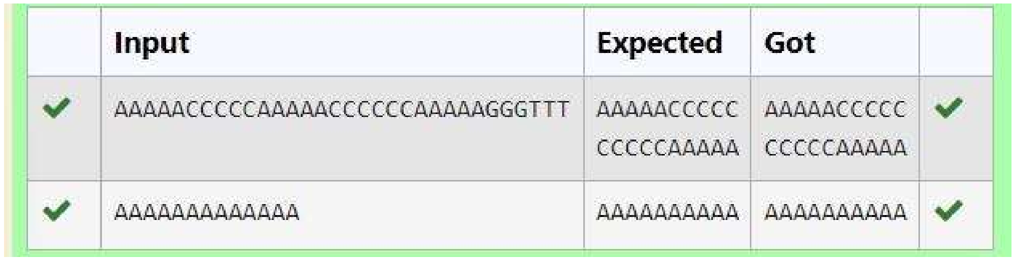
Input: s = "AAAAAAAAAAAAA"
Output: ["AAAAAAAAAA"]

For example:

Input	**Result**
AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA

Program: def findRepeatedSequences(s):

```
   sequences = {}     result
= []     for i in range(len(s)
- 9):
        seq = s[i:i+10]
        sequences[seq] = sequences.get(seq, 0) + 1
if sequences[seq] == 2:
result.append(seq)     return result s1 = input()
for i in findRepeatedSequences(s1):
   print(i)
```



	Input	Expected	Got	
✓	AAAAACCCCCAAAAACCCCCCAAAAAGGGTTT	AAAAACCCCC CCCCCAAAAA	AAAAACCCCC CCCCCAAAAA	✓
✓	AAAAAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	✓

Ex. No. : 7.3 **Date: 18.05.24**

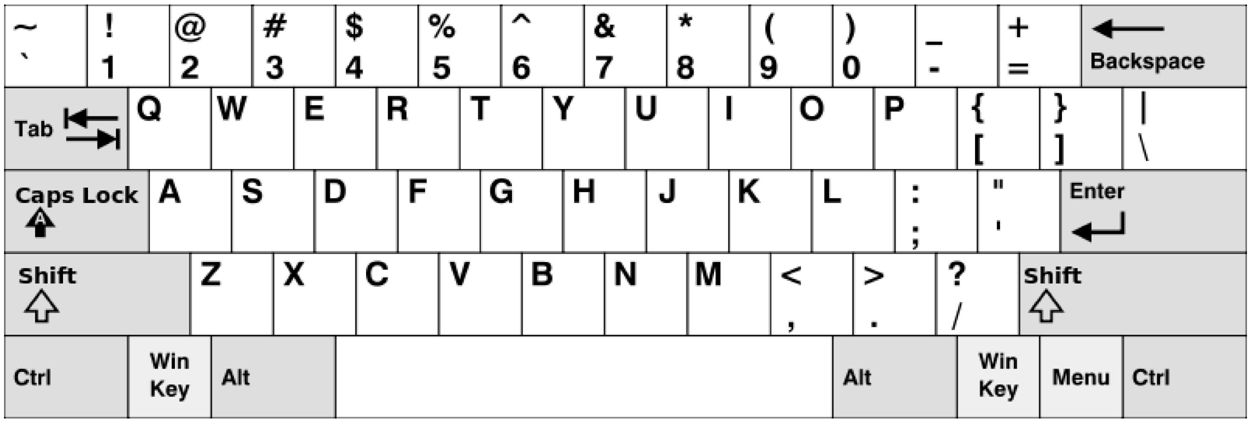
Register No.:230701344 **Name: Sriwanth sathish**

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".



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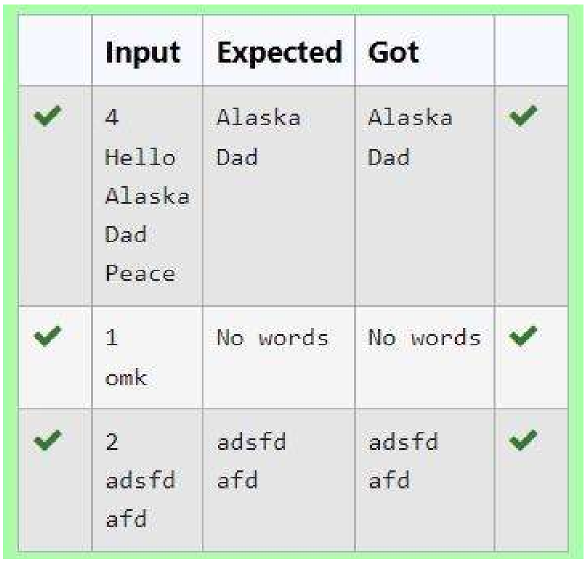
- **Example 1:**
- **Input:** words = ["Hello","Alaska","Dad","Peace"] • **Output:** ["Alaska","Dad"] • **Example 2:**
- **Input:** words = ["omk"] • **Output:** []
- **Example 3:**
- **Input:** words = ["adsdf","sfd"]
- **Output:** ["adsdf","sfd"]
-

- **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)
```



	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: 18.05.24**

Register No.: 230701344 **Name Sriwanth sathish**

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:

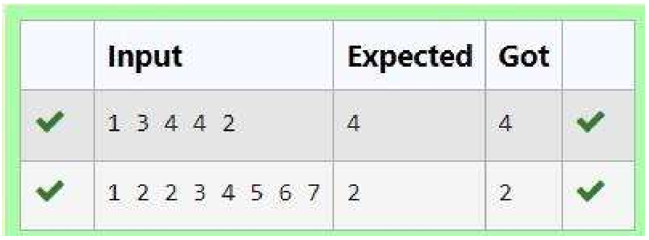
Input: nums = [3,1,3,4,2]
Output: 3

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)
```



	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: 18.05.24**

Register No.:230701344 **Name: Sriwanth sathish**

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

```
count_distinct_pairs(t, K):
   distinct_pairs = set()
for i in range(len(t)):
      for j in range(i + 1, len(t)):
if t[i] + t[j] == K:
distinct_pairs.add((min(t[i], t[j]),
```

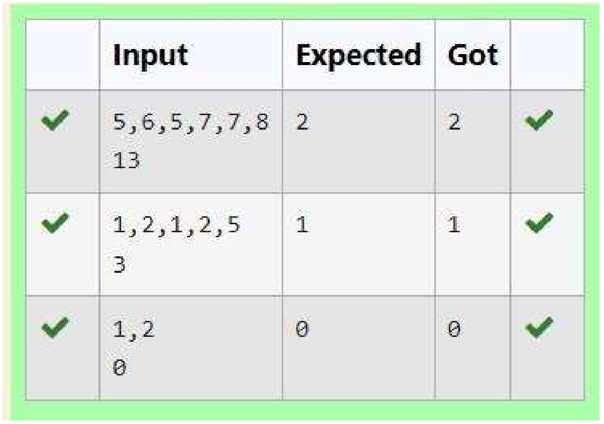
max(t[i], t[j]))) return

len(distinct_pairs) t_input =

input() t = tuple(map(int,

t_input.split(','))) K = int(input())

print(count_distinct_pairs(t, K))



	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	✓