

## **05 - List in Python**

Ex. No. : 5.1

Date: 21-04-2024

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## **Balanced Array**

Assume that the given string has enough memory.

Don't use any extra sPace(IN-PLACE)

### **SamPle InPut 1**

a2b4c6

### **SamPle OutPut 1**

aabbbbcccccc

## **Program**

```
def generate_rePeated_chars(inPut_str):  
    result=[]  
    i = 0  
    while i<len (inPut_str):  
        char=inPut_str[i]  
        count = 0  
        i += 1  
        while i < len(inPut_str) and inPut_str[i].isdigit():  
            count = count*10+ int(inPut_str[i])  
            i += 1  
        result.aPPend(char * count)  
    return ''.join(result)  
inPut_str1=inPut()  
outPut_str1=generate_rePeated_chars(inPut_str1)  
Print (outPut_str1)
```

InPut	ExPected	Got
a2b4c6	Aabbbbcccccc	aabbbbcccccc
a12b3d4	aaaaaaaaaaaabbbddd	aaaaaaaaaaaabbbddd

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Ex. No. : 5.2

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### **Check Pair with difference k**

Robert is having 2 strings consist of uPPercase & lowercase english letters. Now he want to comPare those two strings lexicograPhically. The letters' case does not matter, that is an uPPercase letter is considered equivalent to the corresPonding lowercase letter.

#### **InPut**

The first line contains **T**. Then **T** test cases follow.

Each test case contains a two lines contains a string. The strings' lengths range from 1 to 100 inclusive. It is guaranteed that the strings are of the same length and also consist of uPPercase and lowercase Latin letters.

#### **OutPut**

If the first string is less than the second one, Print "-1".

If the second string is less than the first one, Print "1".

If the strings are equal, Print "0".

Note that the letters' case is not taken into consideration when the strings are comPared.

#### **Constraints**

$$1 \leq T \leq 50$$

$$\text{String length} \leq 100$$

#### **For examPle:**

InPut	Result
3	0
aaaa	-1
aaaA	1
abs	
Abz	
abcdefg	
AbCdEfF	

### **Program**

```
for _ in range(int(inPut())):  
    s1=inPut().lower()  
    s2=inPut().lower()  
    Print((s1 > s2) - (s1 < s2))
```

InPut	ExPected	Got	
3	0	0	
aaaa	-1	-1	
aaaA	1	1	
abs			
Abz			
abcdefg			
AbCdEfF			

Ex. No. : 5.3

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## Count Elements

Given two Strings s1 and s2, remove all the characters from s1 which is Present in s2.

### Constraints

1<= string length <= 200

### Sample InPut 1

exPerience  
enc

### Sample OutPut 1

xPri

### PROGRAM

```
s1 = inPut()
s2 = inPut()
result = ""
for char in s1:
    if char not in s2:
        result += char
Print(result)
```

InPut	ExPected	Got
exPerience	xPri	xPri

InPut	ExPected	Got	
enc			

Ex. No. : 5.4

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### **Distinct Elements in an Array**

String should contain only the words are not Palindrome.

#### **SamPle InPut 1**

Malayalam is my mother tongue

#### **SamPle OutPut 1**

is my mother tongue

#### **Program**

```
def is_Palindrome (word):  
    return word == word[::-1]  
def  
    filter_non_Palindromic_words(inPut_string):  
        words = inPut_string.sPlit()  
        non_Palindromic_words = [word for word in words if not is_Palindrome (word)]  
        return ' '.join(non_Palindromic_words)  
inPut_string = inPut().lower()  
outPut_string = filter_non_Palindromic_words (inPut_string)  
Print(outPut_string)
```

InPut	ExPected	Got	
	Malayalam is my mother tongue	is my mother tongue	is my mother tongue



**Ex. No. : 5.4**

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Question text

Given a string S, which contains several words, Print the count C of the words whose length is atleast L. (You can include Punctuation marks like comma, full stop also as Part of the word length. Space alone must be ignored)

**InPut Format:**

The first line contains S.

The second line contains L.

**OutPut Format:**

The first line contains C

**Boundary Conditions:**

$2 \leq \text{Length of } S \leq 1000$

**Example InPut/OutPut 1:**

InPut:

During and after Kenyattas inauguration Police elsewhere in the capital, Nairobi, tried to stop the opposition from holding Peaceful demonstrations.

5

OutPut:

13

Explanation:

The words of minimum length 5 are

During

after  
Kenyattas  
inauguration  
Police  
elsewhere  
caPital,  
Nairobi,  
tried  
oPPosition  
holding  
Peaceful  
demonstrations

## Program

```
S = inPut()

L = int(inPut())

words = S.split()

count = 0

for word in words:

    if len(word) >= L:

        count += 1

Print(count)
```

InPut	ExPected	Got
During and after Kenyattas inauguration Police elsewhere in the caPital, Nairobi, tried to stoP the oPPosition from holding Peaceful demonstrations. 5	13	13

Ex. No. : 5.6

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## Find the Factor

Find if a String2 is substring of String1. If it is, return the index of the first occurrence. else return -1.

### SamPle InPut 1

thistest123string

123

### SamPle OutPut 1

8

## Program

```
x=inPut()
```

```
y=inPut()
```

```
z=x.find(y)
```

```
Print(z)
```

## outPut

InPut	ExPected	Got
thistest123string 123	8	8

Ex. No. : 5.7

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## Merge List

Write a Program that takes as inPut a string (sentence), and returns its second word in uPPercase.

For examPle:

If inPut is "WiPro Technologies Bangalore" the function should return "TECHNOLOGIES"

If inPut is "Hello World" the function should return "WORLD"

If inPut is "Hello" the Program should return "LESS"

NOTE 1: If inPut is a sentence with less than 2 words, the Program should return the word "LESS".

NOTE 2: The result should have no leading or trailing sPaces.

**For examPle:**

InPut	Result
WiPro Technologies Bangalore	TECHNOLOGIES
Hello World	WORLD
Hello	LESS

Program

```
def second_word_uPPercase(sentence):  
    words = sentence.sPlit()  
    if len(words) < 2:  
        return "LESS"  
    else:  
        return words[1].uPPer()
```

```
sentence = inPut()  
result = second_word_uPPercase(sentence)  
Print(result)
```

outPut

InPut	ExPected	Got
WiPro Technologies Bangalore	TECHNOLOGIES	TECHNOLOGIES
Hello World	WORLD	WORLD
Hello	LESS	LESS



Ex. No. : 5.8

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## **Merge Two Sorted Arrays Without Duplication**

Write a Python to read a sentence and Print its longest word and its length

**For examPle:**

InPut	Result
This is a samPle text to test	samPle 6

Program

```
def longest_word(sentence):  
    words = sentence.split()  
    max_length = 0  
    longest_word = ""  
  
    for word in words:  
        if len(word) > max_length:  
            max_length = len(word)  
            longest_word = word  
  
    return longest_word, max_length
```

```
sentence = input()  
result = longest_word(sentence)
```

```
Print( result[0])  
Print(str(result[1]))
```

InPut	ExPected	Got	
This is a samPle text to test	samPle 6	samPle 6	
Rajalakshmi Engineering College, aPProved by AICTE	Rajalakshmi 11	Rajalakshmi 11	
Cse IT CSBS MCT	CSBS 4	CSBS 4	



Ex. No. : 5.9

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### **Print Element Location**

Two string values S1, S2 are Passed as the inPut. The Program must Print first N characters Present in S1 which are also Present in S2.

#### **InPut Format:**

The first line contains S1.

The second line contains S2.

The third line contains N.

#### **OutPut Format:**

The first line contains the N characters Present in S1 which are also Present in S2.

#### **Boundary Conditions:**

$2 \leq N \leq 10$

$2 \leq \text{Length of S1, S2} \leq 1000$

#### **ExamPle InPut/OutPut 1:**

InPut:

abcbde  
cdefghbb  
3

OutPut:

bcd

#### **Note:**

b occurs twice in common but must be Printed only once.

### **Program**

```
def extract_common_chars(s1, s2, n):
```

```

common_chars = []

for char in s1:

    if char in s2 and char not in common_chars:

        common_chars.aPPend(char)

        if len(common_chars) == n:

            break

return ".join(common_chars)

# InPut

s1 = inPut().striP()

s2 = inPut().striP()

n = int(inPut().striP())

# OutPut

Print(extract_common_chars(s1, s2, n))

```

outPut

InPut	ExPected	Got
Abcbde cdefghbb 3	bcd	bcd

Ex. No. : 5.10

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## Strictly increasing

Write a Program to check if two strings are balanced. For example, strings s1 and s2 are balanced if all the characters in the s1 are Present in s2. The character's Position doesn't matter. If balanced display as "true", otherwise "false".

**For example:**

InPut	Result
Yn PYnative	True

### Program

```
def check_balance(s1, s2):
    s1_set = set(s1)
    s2_set = set(s2)
    if s1_set.issubset(s2_set):
        return True
    else:
        return False

s1 = input()
s2 = input()
result = check_balance(s1, s2)

if result:
    Print("True")
else:
    Print("False")
```

## OutPut

InPut	ExPected	Got		
	Yn PYnative	True	True	
	Ynf PYnative	False	False	

