Rajalakshmi Engineering College

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 3_MCQ

Attempt : 1
Total Mark : 25
Marks Obtained : 25

Section 1 : MCQ

1.   What is the output of the following Python code?

```
b = "Projects!"
print(b[2:5])
```

Answer

oje

Status : Correct   *Marks : 1/1*

2.   What will be the output of the following program?

```
numbers = [1, 2, 3, 4, 5]
numbers.append(6, 7)
print(numbers)
```

Answer

Compile Time Error

Status : Correct   *Marks : 1/1*

3.   What is the output of the following Python code?

```
word = "programming"
answer = word.index("gram")
print(answer)
```

Answer

3

Status : Correct   *Marks : 1/1*

4.   Suppose list1 is [2, 33, 222, 14, 25], What is list1[:-1]?

Answer

[2, 33, 222, 14]

Status : Correct   *Marks : 1/1*

5.   What is the output of the following Python code?

```
a = "Hello"
b = "World"
c = a + " " + b
print(c)
```

Answer

Hello World

Status : Correct   *Marks : 1/1*

6.   What is the output of the following Python code?

```
txt = "My Classroom"
```

```
print(txt.find("o"))
print(txt.index("o"))
```

Answer

99

Status : Correct   *Marks : 1/1*

7. What is the output of the following code?

```
my_list = [1, 2, 3]
my_list *= 2
print(len(my_list))
```

Answer

6

Status : Correct   *Marks : 1/1*

8. What is the output of the following code?

```
my_list = [3, 6, 1, 2, 5, 4]
print(sorted(my_list) == my_list.sort())
```

Answer

False

Status : Correct   *Marks : 1/1*

9. What will be the output of the following code?

```
my_list = [1, 2, 2, 3]
print(my_list.count(2))
```

Answer

2

Status : Correct   *Marks : 1/1*

10. Suppose list1 is [4, 2, 2, 4, 5, 2, 1, 0], Which of the following is the correct syntax for slicing operation?

Answer

all of the mentioned options

Status : Correct   *Marks : 1/1*

11. What is the result of the slicing operation lst[-5:-2] on the list lst = [1, 2, 3, 4, 5, 6]?

Answer

[2, 3, 4]

Status : Correct   *Marks : 1/1*

12. If you have a list lst = [1, 2, 3, 4, 5, 6], what does the slicing operation lst[-3:] return?

Answer

The last three elements of the list

Status : Correct   *Marks : 1/1*

13. What does the append() method do in Python?

Answer

Adds a new element to the end of the list

Status : Correct   *Marks : 1/1*

14. What is the output of the following Python code?

name = "John"
age = 25
message = "My name is %s and I am %d years old." % (name, age)
print(message)

Answer

My name is John and I am 25 years old.

Status : Correct   *Marks : 1/1*

15. What will be the output of the following code?

```
numbers = [1, 2, 3, 4, 5]
numbers.remove(6)
print(numbers)
```

Answer

ValueError: list.remove(x): x not in list

Status : Correct   *Marks : 1/1*

16. Which method in Python is used to create an empty list?

Answer

list()

Status : Correct   *Marks : 1/1*

17. What does the following code output?

```
lst = [10, 20, 30, 40, 50]
print(lst[-4:-1])
```

Answer

[20, 30, 40]

Status : Correct   *Marks : 1/1*

18. Which method is used to add multiple items to the end of a list?

Answer

extend()

19. Which of the following is a valid way to use the '%' operator to concatenate strings in Python?

Answer

"%s %s" % (string1, string2)

Status : Correct   *Marks : 1/1*

20. What is the output of the following Python code?

```python
word = "Python"
result = word[::-1]
print(result)
```

Answer

nohtyP

Status : Correct   *Marks : 1/1*

21. What is the output of the following Python code?

```python
text = "Python"
result = text.center(10, "*")
print(result)
```

Answer

Python

Status : Correct   *Marks : 1/1*

22. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1]?

Answer

25

Status : Correct   *Marks : 1/1*

23. What is the output of the following Python code?

```python
string1 = "Hello"
string2 = "World"
result = string1 + string2
print(result)
```

Answer

HelloWorld

Status : Correct   *Marks : 1/1*

24. What is the output of the following Python code?

```python
text = "   Python   "
answer = text.strip()
print(answer)
```

Answer

Python

Status : Correct   *Marks : 1/1*

25. What does negative indexing in Python lists allow you to do?

Answer

Access elements in the list from the end

Status : Correct   *Marks : 1/1*

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 3_CY

Attempt : 1
Total Mark : 30
Marks Obtained : 30

Section 1 : Coding

1.   Problem Statement

Raj wants to write a program that takes a list of strings as input and returns the longest word in the list. If there are multiple words with the same length, the program should return the first one encountered.

Help Raj in his task.

Input Format

The input consists of a single line of space-separated strings.

Output Format

The output prints a string representing the longest word in the given list.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: cat dog elephant lion tiger giraffe
Output: elephant

Answer

```python
# You are using Python
L=input().split()
s=""
for i in L:
    if(len(i)>len(s)):
        s=i
print(s)
```

Status : Correct   *Marks : 10/10*

2. Problem Statement

Gina is working on a data analysis task where she needs to extract sublists from a given list of integers and find the median of each sublist. For each median found, she also needs to determine its negative index in the original list.

Help Gina by writing a program that performs these tasks.

Note: The median is the middle value in the sorted list of numbers, or the first value of the two middle values if the list has an even number of elements.

Example

Input

10

1 2 3 4 5 7 8 9 10 11

3

1 5

2 6

3 10

Output

3 : -8

4 : -7

7 : -5

Explanation

For the first range (1 to 5), the sublist is [1, 2, 3, 4, 5]. The median is 3, and its negative index in the original list is -8.

For the second range (2 to 6), the sublist is [2, 3, 4, 5, 7]. The median is 4, and its negative index in the original list is -7.

For the third range (3 to 10), the sublist is [3, 4, 5, 7, 8, 9, 10, 11]. The median is 7, and its negative index in the original list is -5.

Input Format

The first line of input consists of an integer N, representing the number of elements in the list.

The second line consists of N space-separated integers representing the elements of the list.

The third line consists of an integer R, representing the number of ranges.

The next R lines each consist of two integers separated by space representing the start and end indices (1-based) of the ranges.

Output Format

The output consists of n lines, displaying "X : Y" where X is the median of the sublist and Y is the negative index in the original list.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10
1 2 3 4 5 7 8 9 10 11
3
1 5
2 6
3 10

Output: 3 : -8
4 : -7
7 : -5

Answer

```python
# You are using Python
n=int(input())
arr=list(map(int, input().split()))
q=int(input())
for i in range(q):
    l,r=map(int, input().split())
    sublist=arr[l-1:r]
    sublist.sort()
    length=len(sublist)
    if(length%2==1):
        median=sublist[length//2]
    else:
        median=sublist[(length//2)-1]
    index=arr.index(median)
    neg=index-n
    print(f"{median} : {neg}")
```

Status : Correct   *Marks : 10/10*

3. Problem Statement

Sarah is a technical writer who is responsible for formatting two important documents. Both documents contain a certain placeholder character that needs to be replaced with another character before they can be finalized. To ensure consistency in formatting, Sarah wants you to help her write a program that processes both documents by replacing the placeholder

character with the new one.

Sarah also prefers a neat and structured output, so she wants you to ensure that both modified documents are printed in a single line, separated by a space, using the format() function.

Example

Input:

Hello

World

o

a

Output:

Hella Warld

Explanation:

Here the character 'o' is replaced with 'a' in the concatenated string.

Input Format

The first line contains string1, the first document.

The second line contains string2, the second document.

The third line contains char1, the placeholder character that needs to be replaced.

The fourth line contains char2, the new character that will replace the placeholder.

Output Format

The output displays a single line containing the modified string1 and string2, separated by a space.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: Hello
World
o
a
Output: Hella Warld

Answer

```python
# You are using Python
s1=input()
s2=input()
s3=s1+" "+s2
c1=input()
c2=input()
print(s3.replace(c1,c2))
```

Status : Correct   **Marks : 10/10**

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 3_CY

Attempt : 1
Total Mark : 30
Marks Obtained : 30

Section 1 : Coding

1.   Problem Statement

Raj wants to write a program that takes a list of strings as input and returns the longest word in the list. If there are multiple words with the same length, the program should return the first one encountered.

Help Raj in his task.

Input Format

The input consists of a single line of space-separated strings.

Output Format

The output prints a string representing the longest word in the given list.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: cat dog elephant lion tiger giraffe
Output: elephant

Answer

```python
# You are using Python
L=input().split()
s=""
for i in L:
    if(len(i)>len(s)):
        s=i
print(s)
```

Status : Correct   *Marks : 10/10*

2. Problem Statement

Gina is working on a data analysis task where she needs to extract sublists from a given list of integers and find the median of each sublist. For each median found, she also needs to determine its negative index in the original list.

Help Gina by writing a program that performs these tasks.

Note: The median is the middle value in the sorted list of numbers, or the first value of the two middle values if the list has an even number of elements.

Example

Input

10

1 2 3 4 5 7 8 9 10 11

3

1 5

2 6

3 10

Output

3 : -8

4 : -7

7 : -5

Explanation

For the first range (1 to 5), the sublist is [1, 2, 3, 4, 5]. The median is 3, and its negative index in the original list is -8.

For the second range (2 to 6), the sublist is [2, 3, 4, 5, 7]. The median is 4, and its negative index in the original list is -7.

For the third range (3 to 10), the sublist is [3, 4, 5, 7, 8, 9, 10, 11]. The median is 7, and its negative index in the original list is -5.

Input Format

The first line of input consists of an integer N, representing the number of elements in the list.

The second line consists of N space-separated integers representing the elements of the list.

The third line consists of an integer R, representing the number of ranges.

The next R lines each consist of two integers separated by space representing the start and end indices (1-based) of the ranges.

Output Format

The output consists of n lines, displaying "X : Y" where X is the median of the sublist and Y is the negative index in the original list.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10
1 2 3 4 5 7 8 9 10 11
3
1 5
2 6
3 10

Output: 3 : -8
4 : -7
7 : -5

Answer

```python
# You are using Python
n=int(input())
arr=list(map(int, input().split()))
q=int(input())
for i in range(q):
    l,r=map(int, input().split())
    sublist=arr[l-1:r]
    sublist.sort()
    length=len(sublist)
    if(length%2==1):
        median=sublist[length//2]
    else:
        median=sublist[(length//2)-1]
    index=arr.index(median)
    neg=index-n
    print(f"{median} : {neg}")
```

Status : Correct   *Marks : 10/10*

3. Problem Statement

Sarah is a technical writer who is responsible for formatting two important documents. Both documents contain a certain placeholder character that needs to be replaced with another character before they can be finalized. To ensure consistency in formatting, Sarah wants you to help her write a program that processes both documents by replacing the placeholder

character with the new one.

Sarah also prefers a neat and structured output, so she wants you to ensure that both modified documents are printed in a single line, separated by a space, using the format() function.

Example

Input:

Hello

World

o

a

Output:

Hella Warld

Explanation:

Here the character 'o' is replaced with 'a' in the concatenated string.

Input Format

The first line contains string1, the first document.

The second line contains string2, the second document.

The third line contains char1, the placeholder character that needs to be replaced.

The fourth line contains char2, the new character that will replace the placeholder.

Output Format

The output displays a single line containing the modified string1 and string2, separated by a space.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: Hello
World
o
a
Output: Hella Warld

Answer

```python
# You are using Python
s1=input()
s2=input()
s3=s1+" "+s2
c1=input()
c2=input()
print(s3.replace(c1,c2))
```

Status : Correct   **Marks : 10/10**

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 3_PAH

Attempt : 1
Total Mark : 60
Marks Obtained : 60

Section 1 : Coding

1. Problem Statement

Imagine you are developing a text analysis tool for a cybersecurity company. Your task is to analyze input strings to categorize and count the characters into four categories: uppercase letters, lowercase letters, digits, and special characters. The company needs this tool to process log files and identify potential security threats.

Input Format

The input consists of the log entry provided as a single string.

Output Format

The output consists of four lines:

The first line contains an integer representing the count of uppercase letters in the format "Uppercase letters: {uppercase count}".

The second line contains an integer representing the count of lowercase letters in the format "Lowercase letters: {lowercase count}".

The third line contains an integer representing the count of digits in the format "Digits: {digits count}".

The fourth line contains an integer representing the count of special characters in the format "Special characters: {special characters count}".

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: Hello123

Output: Uppercase letters: 1
Lowercase letters: 4
Digits: 3
Special characters: 0

Answer

```python
# You are using Python
str=input()
u=0
l=0
d=0
s=0
for char in str:
    if char.isupper():
        u+=1
    elif char.islower():
        l+=1
    elif char.isdigit():
        d+=1
    else:
        s+=1
print(f"Uppercase letters: {u}")
print(f"Lowercase letters: {l}")
print(f"Digits: {d}")
print(f"Special Characters: {s}")
```

2.   Problem Statement

Kyara is analyzing a series of measurements taken over time. She needs to identify all the "peaks" in this list of integers.

A peak is defined as an element that is greater than its immediate neighbors. Boundary elements are considered peaks if they are greater than their single neighbor.

Your task is to find and list all such peaks using list comprehension.

Example

Input

1 3 2 4 1 5 7 6 10 2 8

Output

Peaks: [3, 4, 7, 10, 8]

Explanation

3 is a peak because it's greater than 1 and 2.

4 is a peak because it's greater than 2 and 1.

7 is a peak because it's greater than 5 and 6.

10 is a peak because it's greater than 6 and 2.

8 is a peak because it is an boundary element and it is greater than 2.

Input Format

The input consists of several integers separated by spaces, representing the measurements.

Output Format

The output displays "Peaks: " followed by a list of integers, representing the peak elements in the list.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 1 3 2 4 1 5 7 6 10 2 8
Output: Peaks: [3, 4, 7, 10, 8]

Answer

```python
# You are using Python
str=input()
m=list(map(int, str.split()))
peaks = [
    m[i] for i in range(len(m))
    if(i==0 and i+1 <len(m) and m[i]>m[i+1]) or (i==len(m)-1 and i-1>=0 and
m[i]>m[i-1]) or(0<i<len(m)-1 and m[i]>m[i-1]and m[i]>m[i+1])
    ]
print(f"Peaks: {peaks}")
```

Status : Correct   *Marks : 10/10*

3. Problem Statement

You are tasked with writing a program that takes n integers as input from the user and stores them in a list. After this, you need to transform the list according to the following rules:

The element at index 0 should be replaced with 0.For elements at even indices (excluding index 0), replace the element with its cube.For elements at odd indices, replace the element with its square.

Additionally, you should sort the list in ascending order before applying these transformations.

Input Format

The first line of input represents the size of the list, N.

The elements of the list are represented by the next N lines.

Output Format

The first line of output displays "Original List: " followed by the original list.

The second line displays "Replaced List: " followed by the replacement list as per the given condition.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 5
5
1
2
3
4
Output: Original List: [1, 2, 3, 4, 5]
Replaced List: [0, 4, 27, 16, 125]

Answer

```
n=int(input())
l=[int(input()) for _ in range(n)]
l.sort()
print("Original List: ",l)
for i in range(len(l)):
    if(i==0):
        l[i]=0
    elif(i%2==0):
        l[i]=l[i]**3
    else:
        l[i]=l[i]**2
print("Replaced List: ",l)
```

Status : Correct   *Marks : 10/10*

4. Problem Statement

Neha is learning string operations in Python and wants to practice using

built-in functions. She is given a string A, and her task is to:

Find the length of the string using a built-in function.Copy the content of A into another string B using built-in functionality.

Help Neha implement a program that efficiently performs these operations.

Input Format

The input consists of a single line containing the string A (without spaces).

Output Format

The first line of output prints the length of the given string.

The second line prints the copied string without an extra newline at the end.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: technology-23
Output: Length of the string: 13
Copied string: technology-23

Answer

```
# You are using Python
s=input()
l=len(s)
s1=""
s1=s
print(f"Length of the string: {l}")
print(f"Copied string: {s1}")
```

Status : Correct   *Marks : 10/10*

5.   Problem Statement

Gowri was doing her homework. She needed to write a paragraph about modern history. During that time, she noticed that some words were

repeated repeatedly. She started counting the number of times a particular word was repeated.

Your task is to help Gowri to write a program to get a string from the user. Count the number of times a word is repeated in the string.

Note: Case-sensitive

Input Format

The first line of input consists of a string, str1.

The second line consists of a single word that needs to be counted, str2.

Output Format

The output displays the number of times the given word is in the string.

If the second string str2 is not present in the first string str1, it prints 0.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: I felt happy because I saw the others were happy and because I knew I should feel happy
happy
Output: 3

Answer

```
s1=input()
s2=input()
words=s1
count=0

count=s1.count(s2)
print(count)
```

Status : Correct   ***Marks : 10/10***

6. Problem Statement

Accept an unsorted list of length n with both positive and negative integers, including 0. The task is to find the smallest positive number missing from the array. Assume the n value is always greater than zero.

Input Format

The first line consists of n, which means the number of elements in the array.

The second line consists of the values in the list as space-separated integers.

Output Format

The output displays the smallest positive number, which is missing from the array.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 6
-5 2 0 -1 -10 2
Output: 1

Answer

```python
# You are using Python
n=int(input())
arr=list(map(int, input().split()))
pos=[num for num in arr if num>0]

if not pos:
    print(1)
else:
    pos1=set(pos)
    missing=1
    while missing in pos1:
        missing+=1
    print(missing)
```

Status : Correct   **Marks : 10/10**