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AAD Practical 1

Institute of Computer Technology
B. Tech Computer Science and Engineering

Sub: Algorithm Analysis and Design

Practical 1

There are 2 chefs, namely chef 1 and chef 2 in the MasterChef competition. The judge is going to judge on the basis of 3 categories: presentation, taste and hygiene to prepare the dishes. The marking is scaling from 1 to 100. The rating for chef 1 challenge is the triplet a = (a[0], a[1], a[2]), and the rating for Chef 2 challenge is the triplet b = (b[0], b[1], b[2]), where 0 index is presentation, 1 index is taste and 2 index is hygiene. The task is to find their comparison points by comparing a[0] with b[0], a[1] with b[1], and a[2] with b[2]. If a[i] > b[i], then Chef 1 is awarded 1 point. If a[i] < b[i], then Chef 2 is awarded 1 point. If a[i] = b[i], then neither person receives a point. Comparison points are the total points a person earned. Given a and b, determine their respective comparison points. Design the algorithm for the same and implement using the programming language of your choice. Make comparative analysis for various use cases & input size.

Sample Input 1
27 48 70
89 26 7

Sample Output 1
2 1

Explanation 1
Comparing the 0th elements, 27<89 so Chef 2 receives a point.
Comparing the 1st and 2nd elements, 48>26 and 70>7 so Chef 1 receives two points. The return array is [2,1].

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Code :

```
from YSL_io import *
from array import *



def compare(a, b):
p1 = 0
p2 = 0
for one in range(len(a)):
for two in range(len(b)):
if one == two:
if a[one] > b[two]:
p1 = p1 + 1
elif a[one] < b[two]:
p2 = p2 + 1
else:
pass
return p1, p2

# a1 = int(inputGRN('\nEnter presentation score of Chef-1 : '))
# a2 = int(inputGRN('Enter taste score of Chef-1 : '))
# a3 = int(inputGRN('Enter hygiene score of Chef-1 : '))

# b1 = int(inputMGNTA('\nEnter presentation score of Chef-2 : '))
```

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```
# b2 = int(inputMGNTA('Enter taste score of Chef-2 : '))
# b3 = int(inputMGNTA('Enter hygiene score of Chef-2 : '))

# a = array('I', [a1, a2, a3])
# b = array('I', [b1, b2, b3])

n = int(inputORNG('\nEnter number of categories to compare : '))
a = array('I', range(n))
b = array('I', range(n))

print()
for i in range(n):
a[i] = int(inputGRN(f'Enter category-{i + 1} score of Chef-1 : '))
print()
for i in range(n):
b[i] = int(inputMGNTA(f'Enter category-{i + 1} score of Chef-2 : '))

p1, p2 = compare(a, b)

print('\nTotal score of Chef-1 : ', end='')
printORNG(p1)

print('Total score of Chef-2 : ', end='')
printORNG(p2)
```

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Output :