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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 6_COD_Question 1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

John and Mary are collaborating on a project that involves data analysis. They each have a set of age data, one sorted in ascending order and the other in descending order. However, their analysis requires the data to be in ascending order.

Write a program to help them merge the two sets of age data into a single sorted array in ascending order using merge sort.

Input Format

The first line of input consists of an integer N, representing the number of age values in each dataset.

The second line consists of N space-separated integers, representing the ages of participants in John's dataset (in ascending order).

The third line consists of N space-separated integers, representing the ages of participants in Mary's dataset (in descending order).

Output Format

The output prints a single line containing space-separated integers, which represents the merged dataset of ages sorted in ascending order.

Refer to the sample output for formatting specifications.

Sample Test Case

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

Answer

```
#include <stdio.h>

# You are using Python
def merge_sorted_arrays(asc_list, desc_list):
    desc_list.reverse()  # Reverse Mary's dataset to make it ascending
    merged_list = sorted(asc_list + desc_list)  # Merge and sort the list
    return merged_list

# Read input
N = int(input())  # Number of values in each dataset
john_data = list(map(int, input().split()))  # John's dataset (ascending order)
mary_data = list(map(int, input().split()))  # Mary's dataset (descending order)

# Merge and sort
sorted_data = merge_sorted_arrays(john_data, mary_data)

# Print output
print(" ".join(map(str, sorted_data)))

int main() {
    int n, m;
    scanf("%d", &n);
    int arr1[n], arr2[n];
```

```
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr1[i]);
    }
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr2[i]);
    }
    int merged[n + n];
    mergeSort(arr1, n);
    mergeSort(arr2, n);
    merge(merged, arr1, arr2, n, n);
    for (int i = 0; i < n + n; i++) {
        printf("%d ", merged[i]);
    }
    return 0;
}
```

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