

Rajalakshmi Engineering College

Name: Sankara Gomathi R
Email: 240701470@rajalakshmi.edu.in
Roll no: 240701470
Phone: 7530026101
Branch: REC
Department: I CSE FE
Batch: 2028
Degree: B.E - CSE

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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 6_CY_Updated

Attempt : 1
Total Mark : 30
Marks Obtained : 0

Section 1 : Coding

1. Problem Statement

Aryan is participating in a coding competition where he needs to sort a list of numbers using an efficient sorting algorithm. He decides to use Merge Sort, a divide-and-conquer algorithm, to achieve this. Given a list of n elements, Aryan must implement merge sort to arrange the numbers in ascending order.

Help Aryan by implementing the merge sort algorithm to correctly sort the given list of numbers.

Input Format

The first line of input contains an integer n , the number of elements in the list.

The second line contains n space-separated integers representing the elements

of the list.

Output Format

The output prints the sorted list of numbers in ascending order, separated by a space.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5

80 40 20 50 30

Output: 20 30 40 50 80

Answer

-

Status : Skipped

Marks : 0/10

2. Problem Statement

Ravi is given an array of integers and is tasked with sorting it in a unique way. He needs to sort the elements in such a way that the elements at odd positions are in descending order, and the elements at even positions are in ascending order. Ravi decided to use the Insertion Sort algorithm for this task.

Your task is to help ravi, to create `even_odd_insertion_sort` function to sort the array as per the specified conditions and then print the sorted array.

Example

Input:

10

25 36 96 58 74 14 35 15 75 95

Output:

96 14 75 15 74 36 35 58 25 95

Input Format

The first line of input consists of a single integer, N, which represents the size of the array.

The second line contains N space-separated integers, representing the elements of the array.

Output Format

The output displays the sorted array using the even-odd insertion sort algorithm and prints the sorted array.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 4

3 1 4 2

Output: 4 1 3 2

Answer

-

Status : Skipped

Marks : 0/10

3. Problem Statement

Marie, the teacher, wants her students to implement the ascending order of numbers while also exploring the concept of prime numbers.

Students need to write a program that sorts an array of integers using the merge sort algorithm while counting and returning the number of prime integers in the array. Help them to complete the program.

Input Format

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

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

Output Format

The first line of output prints the sorted array of integers in ascending order.

The second line prints the number of prime integers in the array.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 7

5 3 6 8 9 7 4

Output: Sorted array: 3 4 5 6 7 8 9

Number of prime integers: 3

Answer

-

Status : Skipped

Marks : 0/10