

Foundations of Algorithms – IE2072

Sri Lanka Institute of Information Technology Assignment (30% of total assessments)

Due Date: 7th November 2022

Develop **C** or **Java** source codes for the following applications.

Question 1 (10 marks)

The weight of an array is defined as the difference between the maximum and minimum element of the array. For example, the weight of the array [3, 7, 1, 2] is $(7 - 1) = 6$, the weight of the array [2] is $(2 - 2) = 0$, the weight of an empty array is 0. Your task is to find the weight of a given array.

Input Format:

First line contains the size of the array

Second line contains the array

Output Format:

Ex:

Sample Input	Sample Output
4	6
3, 7, 1, 2	

Question 2 (20 marks)

You are given two binary strings **A** and **B** of equal length. You have a type of operation in which you can swap any two elements of string **B**. Your task is to find the minimum number of operations required to convert string **B** into string **A**. If it is not possible, print **-1**.

Input Format:

First line contains string **A**.

Second line contains string **B**.

Output Format:

Print the minimum number of operations required to convert string **B** into string **A**. If it is not possible, print **-1**.

Ex:

Sample Input	Sample Output
1110	1
1101	

Submit your **original source codes and the **document which contains the source codes and screenshots of the outputs**.**

The link will be available in courseweb on or before the deadline mentioned.

Copied source codes will get 0 mark without any clarifications.

The absence for the viva session (will be scheduled after the deadline) will also get 0 marks.