United International **University**

Department of **C**omputer **S**cience and **E**ngineering

CSE 2216 (I): Data Structures and Algorithms I Laboratory

Trimester: Summer 2023

Class Performance 1, Total Marks: **20**, Total Time: **1 hour 30 minutes**

Any examinee found adopting unfair means will be expelled from the trimester/program as per UIU disciplinary rules.

[7 marks] Question 1: Mr. Diego is an IT company manager. He wants to rate his employee based on the employee's performance over the last N working days. Now he wants you to do the task for him. You are given an array of N integers called workload, where workload[i] represents the number of hours an employee worked on an i^{th} day. The employee must be evaluated using the following criteria:

- Rating = the maximum number of consecutive working days when the employee has worked more than 5 hours.

Input

- The first line contains an integer *N d*enoting the number of working days, where N>8.
- The second line contains a space-separated integer array *workload* where *workload[i]* represents the number of hours an employee worked on an i^{th} day.

Output

Print the employee rating.

Sample Input

12

[2, 3, 7, 8, 7, 6, 3, 8, 12, 11, 12, 10]

Sample output

5

Explanation

[2, 3, **7, 8, 7**, 6, 3, **8, 12, 11, 12, 10**]

2^{nd} one is the Longest Interval containing =>> [8,12,11,12,10]

Therefore, 5.

[8 marks] Question 2: A new deadly virus has infected a large population of the world. A brilliant scientist has discovered a new virus that can cure this disease. A vaccine produced from this virus has various strengths depending on the points. A person is cured only if points in the vaccine batch are more than midichlorians count of a person. A doctor receives a new set of reports which contains midichlorians count of each infected patient, Mr. Diego stores all the vaccine doctor has and their midichlorians count. You need to determine if the doctor can save all patients with his vaccines. The number of vaccines and patients is equal.

Input

The first line contains the number of vaccines *N*. Second line contains *N* integers, which are strengths of vaccines. The third line contains *N* integers, which are midichlorians count of patients.

Output

Print a single line containing 'YES' or 'NO'.

Sample Input

5

123 146 454 542 456

100 328 248 689 200

Sample Output

No

Sample Input

2

[201, 101]

[100, 200]

Sample Output

YES

**** midichlorians countè midichlorians count measures one's potentiality with force.

[5 marks] Question 3: You have been given an *A* array consisting of *N* integers. All the elements in this array are guaranteed to be unique. For each position *i* in the array *A* you need to find the position A[i] should be present in, if the array was a sorted array. You need to find this for each *i* and print the resulting solution.

Input Format:

The first line contains a single integer *N* denoting the size of array *A*. The next line contains *N* space-separated integers denoting the elements of array *A*.

Output Format:

Print *N* space-separated integers on a single line, where *i* th integer denotes the position of A[i] if this array were sorted.

Sample Input

5

3 4 9 8 2

Sample Output

2 3 5 4 1