

PROBLEM 1

# Soccer Match

**Time and memory limits:** 1 second, 256 MB

Your favourite soccer team (codenamed Team 1) hasn't been doing too well lately. To cheer yourself up, you are watching a replay of their latest match against Team 2. You can stop watching the game at any point but, to end on a high, you only want to do so when your team is in the lead.

During the game, the two teams scored a combined total of  $N$  goals. You are given the sequence of  $N$  goals in the order that they were scored and your task is to determine whether there was any point during the game where Team 1 had scored more goals than Team 2. If so, you can stop watching the game while your favourite team is in the lead!

## Subtasks and constraints

Your program will be graded using many secret tests. Every test follows some rules:

- $1 \leq N \leq 200\,000$ .

The secret tests are divided into subtasks. Your program must correctly solve **every test** within a subtask to earn the marks for that subtask:

- For Subtask 1 (30 marks),  $N = 1$ .
- For Subtask 2 (50 marks),  $N \leq 1000$ .
- For Subtask 3 (20 marks), no special rules apply.

## Input

Your solution must read input and print output. We recommend using the solution templates (which you can find on the competition website) to help you with input and output.

The input follows a specific format:

- The 1st line contains the integer  $N$ .
- The 2nd line contains  $N$  integers, describing the goals in the order that they were scored. A 1 represents a goal for Team 1 (your favourite team) and a 2 represents a goal for Team 2.

## Output

Your program must output YES if there was any point during the game where Team 1 had more goals than Team 2, and NO otherwise.

**Sample input 1**

1  
1

**Sample output 1**

YES

**Sample input 2**

4  
2 1 2 1

**Sample output 2**

NO

**Sample input 3**

7  
2 2 1 1 1 2 2

**Sample output 3**

YES

**Explanation**

- In the 1st sample case, Team 1 scores the only goal of the game and goes into the lead. Therefore, the answer is YES.
- In the 2nd sample case, Team 1 is only ever tied with or behind Team 2 and so the answer is NO.
- In the 3rd sample case, Team 1 is in the lead after the 5th goal is scored and so the answer is YES.