

Colorful String

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

You are given a string s of length $2n$, which consists only of zeros and ones. At the beginning, all the characters are colored in black. You can choose any n characters from the string and color them in red.

After that, you form two new strings, the first one is the characters colored in black, and the second one is the characters colored in red. Note that both resulting strings have a length of n .

Your task is to determine whether it is possible to color in such a way that the resulting two strings differ in each position.

Input

The first line contains one number n ($1 \leq n \leq 1,000$).

The second line contains $2n$ characters s_1, \dots, s_{2n} ($s_i \in \{0, 1\}$).

Output

Print «Yes» if the coloring described in the condition exists, or «No» otherwise.

Scoring

In this problem, there are conditional blocks. If your solution works correctly for certain constraints, it will receive a certain number of points. Note that the evaluation is still in the testing phase.

1. (50 points): $n \leq 20$;
2. (50 points): without additional constraints.

Examples

standard input	standard output
3 100101	Yes
4 10010100	No

Note

In the first test, the input string "100101" in which all the digits are colored in black. It is possible to color the digits at positions 1, 4, 5 in red. The newly formed strings will be "001" and "110". They differ in each position.