Fun with Sequences (Act 5)

You are given S - a sequence of n integers $S = s_1, s_2, ..., s_n$. Please, compute if it is possible to split S into two parts: $s_1, s_2, ..., s_i$ and $s_{i+1}, s_{i+2}, ..., s_n$ ($1 <= i < n$) in such a way that the first part is strictly decreasing while the second is strictly increasing one.

Input data specification

In the first line you are given an integer $2<=n<=100$ and in the following line n integers $-100 <= s_i <= 100$.

Output data specification

One word Yes or No.

Example 1

Input:
5
-1 2 -1 1 -1

Output:
No

Example 2

Input:
6
3 1 -2 -2 -1 3

Output:
Yes

Example 3

Input:
6
2 2 1 0 1 2

Output:
No