Problem B. Build Stairs

Time limit 2000 ms
Mem limit 1048576 kB

Problem Statement

There are N squares arranged in a row from left to right. The height of the i-th square from the left is H_i.

For each square, you will perform either of the following operations once:

- Decrease the height of the square by 1.
- Do nothing.

Determine if it is possible to perform the operations so that the heights of the squares are non-decreasing from left to right.

Constraints

- All values in input are integers.
- $1 \leq N \leq 10^5$
- $1 \leq H_i \leq 10^9$

Input

Input is given from Standard Input in the following format:

N
H_1 H_2 ... H_N

Output

If it is possible to perform the operations so that the heights of the squares are non-decreasing from left to right, print `Yes` ; otherwise, print `No` .

Sample 1

Input	Output
5 1 2 1 1 3	Yes

You can achieve the objective by decreasing the height of only the second square from the left by 1.

Sample 2

Input	Output
4 1 3 2 1	No

Sample 3

Input	Output
5 1 2 3 4 5	Yes

Sample 4

Input	Output
1 1000000000	Yes