N. Great Vova Wall (Version 1)

time limit per test: 2 seconds
memory limit per test: 256 megabytes

Vova's family is building the Great Vova Wall (named by Vova himself). Vova's parents, grandparents, grand-grandparents contributed to it. Now it's totally up to Vova to put the finishing touches.

The current state of the wall can be respresented by a sequence a of n integers, with a_i being the height of the i-th part of the wall.

Vova can only use 2×1 bricks to put in the wall (he has infinite supply of them, however).

Vova can put bricks **horizontally** on the neighboring parts of the wall of equal height. It means that if for some i the current height of part i is the same as for part $i + 1$, then Vova can put a brick there and thus increase both heights by 1. Obviously, Vova can't put bricks in such a way that its parts turn out to be off the borders (to the left of part 1 of the wall or to the right of part n of it).

The next paragraph is specific to the version 1 of the problem.

Vova can also put bricks vertically. That means increasing height of any part of the wall by 2.

Vova is a perfectionist, so he considers the wall completed when:

- all parts of the wall has the same height;
- the wall has no empty spaces inside it.

Can Vova complete the wall using any amount of bricks (possibly zero)?

Input

The first line contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the number of parts in the wall.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the initial heights of the parts of the wall.

Output

Print "YES" if Vova can complete the wall using any amount of bricks (possibly zero).

Print "NO" otherwise.

Examples

input	Copy
5 2 1 1 2 5	

output	Copy
YES	

input	Copy
3 4 5 3	

output	Copy
YES	

input	Copy
2 10 10	

output	Copy
YES	

input	Copy
3 1 2 3	

output	Copy
NO	

Note

In the first example Vova can put a brick on parts 2 and 3 to make the wall $[2, 2, 2, 2, 5]$ and then put 3 bricks on parts 1 and 2 and 3 bricks on parts 3 and 4 to make it $[5, 5, 5, 5, 5]$.

In the second example Vova can put a brick vertically on part 3 to make the wall $[4, 5, 5]$, then horizontally on parts 2 and 3 to make it $[4, 6, 6]$ and then vertically on part 1 to make it $[6, 6, 6]$.

In the third example the wall is already complete.

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022
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→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #2 (STL 1)
Finished
Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
285955836	Oct/14/2024 22:47	Accepted