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# Dividing Stamps

Problem Code: **DIVIDING**

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Are you fond of collecting some kind of stuff? Mike is crazy about collecting stamps. He is an active member of *Stamp Collecting Community*(SCC).

SCC consists of **N** members which are fond of philately. A few days ago Mike argued with the others from SCC. Mike told them that all stamps of the members could be divided in such a way that i'th member would get i postage stamps. Now Mike wants to know if he was right. The next SCC meeting is tomorrow. Mike still has no answer.

So, help Mike! There are **N** members in the SCC, i'th member has **C<sub>i</sub>** stamps in his collection. Your task is to determine if it is possible to redistribute **C<sub>1</sub> + C<sub>2</sub> + ... + C<sub>n</sub>** stamps among the members of SCC thus that i'th member would get i stamps.

### Input

The first line contains one integer **N**, denoting the number of members of SCC.

The second line contains **N** integers **C<sub>i</sub>**, denoting the numbers of the stamps in the collection of i'th member.

### Output

The first line should contain **YES**, if we can obtain the required division, otherwise **NO**.

### Constraints

$1 \leq N \leq 100\,000$ ;

$1 \leq C_i \leq 10^9$ .

### Examples

**Input :**

5  
7 4 1 1 2

**Output :**

YES

**Input :**

5  
1 1 1 1 1

**Output :**

NO

All submissions for this problem are available.

Author: 6★ [kostya\\_by](#)

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Editorial: <https://discuss.codechef.com/problems/DIVIDING>

Tags: [cakewalk](#), [cook44](#), [kostya\\_by](#), [math](#), [simple](#)

Date Added: 24-02-2014

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: CPP14, C, JAVA, PYTH 3.6, PYTH, CS2, ADA, PYP3, TEXT, PAS fpc, RUBY, PHP, NODEJS, GO, TCL, HASK, PERL, SCALA, BASH, JS, PAS gpc, BF, LISP sbcl, CLOJ, LUA, D, CAML, ASM, FORT, FS, LISP clisp, SCM guile, PERL6, CLPS, WSPC, ERL, ICK, NICE, PRLG, ICON, PIKE, SCM qobi, ST, NEM

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