







Rank
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Permutation Possibility





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A permutation of a sequence, $S = \{s_0, s_1, \dots, s_{m-1}\}$, is a sequence consisting of some rearrangement of the m elements of S. For example, all the permutations of $S = \{1, 2, 3\}$ are $\{1, 2, 3\}$, $\{1, 3, 2\}$, $\{2, 1, 3\}$, $\{2, 3, 1\}$, $\{3, 1, 2\}$, and $\{3, 2, 1\}$.

Mark writes sequence S on a piece of paper and asks Lisa to insert zero or more integers *anywhere* in the sequence so that it becomes a permutation of $\{1, 2, ..., n\}$ (i.e., a sequence of distinct integers from 1 to n) for any integer n.

Given S, print YES if Lisa's task is possible; otherwise, print NO instead.

Input Format

The first line contains a single integer denoting m.

The second line contains m space-separated integers describing the respective values of $s_0, s_1, \ldots, s_{m-1}$.

Constraints

- $1 \le m \le 100$
- $1 \le s_i \le 10^5$

Output Format

If Lisa can insert integers into the sequence to make it a permutation of $\{1, 2, \dots, n\}$ for any n, print YES; otherwise, print NO instead.

Sample Input 0

3 1 2 3

Sample Output 0

YES

Explanation 0

Sequence $S = \{1, 2, 3\}$ is already a sequence of n = 3 distinct integers. Because Lisa's task is complete without adding any elements, we print YES.

Sample Input 1

3 2 2 1

Sample Output 1

NO

Explanation 1

The sequence $S = \{2, 2, 1\}$ cannot be converted into a permuted sequence of n distinct integers because no amount of added integers will change that the number 2 appears twice in the sequence. Thus, we print NO.

Sample Input 2

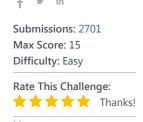
3 4 1 6

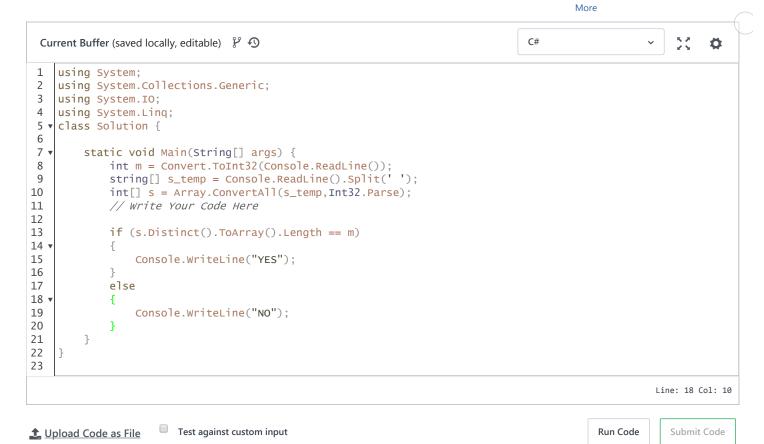
Sample Output 2

YES

Explanation 2

Given $S = \{4, 1, 6\}$, Lisa can insert 2, 3, and 5 into S to turn it into a sequence of n = 6 distinct integers. Thus, we print YES.





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