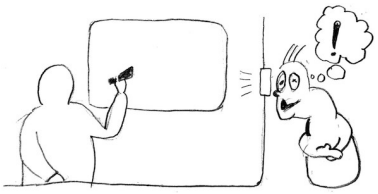
Sequence

Adam wrote down a sequence of K consecutive positive integers starting with N on a blackboard. When he left, Billy came in and erased all but one digit from each number, thus creating a sequence of K integers between 0 and 9.



Task

Given the final sequence left on the blackboard, find the smallest value of N with which it could have occured.

Input

The first line of the input contains a single integer K — the length of the sequence. The second line contains K integers B_1, B_2, ..., B_K — Billy's sequence, in the order in which it is written on the blackboard.

Output

The output should consist of a single line with the smallest value of N with which this sequence could have occured.

Example

Input	Output	Comments
6 7 8 9 5 1 2	47	$N = 47$ would correspond to Adam's sequence being $< 47\ 48\ 49\ 50\ 51\ 52 >$ from which Billy's sequence can indeed be obtained. As no smaller value of N would work, the answer is 47.

Scoring

Subtask 1 (10 points). $1 \leq K \leq 1000$, correct answer does not exceed 1000

Subtask 2 (30 points). $1 \leq K \leq 1000$

Subtask 3 (25 points). $1 \leq K \leq 100\,000$, all elements of the given sequence are equal

Subtask 4 (35 points). $1 \leq K \leq 100\,000$

Constraints

Time limit: ? s.

Memory limit: ? MB.