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 digits.

Task

Given the final sequence left on the blackboard, find the smallest value of N with which the initial sequence might have started.

Input

The first line of the input contains a single integer K -- the length of the sequence. The second line contains K integers $B_1, B_2, \ldots, B_K$ --- Billy's sequence ($0 \leq B_i \leq 9$), 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 the initial sequence might have started.

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

Subtask 2 (33 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 (33 points): $1 \leq K \leq 100\,000$.

Constraints

Time limit: 1 s.

Memory limit: 256 MB.