Portals

Adam wrote down on a blackboard a sequence of K consequtive positive integers starting with N. 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 least possible value of N with which it could have occured.

Implementation

Write a function `recreate_sequence(K, B)` that takes the following parameters:

- K — the length of either sequence
- B — a one–dimensional array that describes Billy's sequence, in the order in which it is written on the blackboard: $\mathtt{A}[i]$ $(0 \leq i \leq \mathtt{K}-1)$ is a digit of $\mathtt{N}+i$

Function `recreate_sequence` has to return the least possible value of N with which this sequence could have occured.

Example

Let us consider the example where

$$\mathtt{K} = 6 \quad \mathtt{A} = \begin{matrix} 7 \\ 8 \\ 9 \\ 5 \\ 1 \\ 2 \end{matrix}$$

Then setting $\mathtt{N} = 47$ 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, your function has to return 47.

Scoring

Subtask 1 (? points). $1 \leq \mathtt{K} \leq 10$

Subtask 2 (? points). $1 \leq \mathtt{K} \leq 1000$, correct answer does not exceed 1000

Subtask 3 (? points). $1 \leq \mathtt{K} \leq 1000$

Subtask 4 (? points). $1 \leq \mathtt{K} \leq 100\,000$

Constraints

Time limit: ? s.

Memory limit: ? MB.