

Sequence

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 1024 megabytes

Given a 01-sequence $s_1, s_2, \dots, s_n$ of length n , define

$$p_i = \sum_{j=1}^i [s_i \neq s_j]$$

where $[]$ is the Iverson bracket (1 if the condition holds, 0 otherwise).

You are given the integer n and the multiset $\{p'_1, p'_2, \dots, p'_n\}$ of the values $\{p_1, p_2, \dots, p_n\}$.

Count the number of sequences s that satisfy the condition.

Output the answer modulo 998244353.

It is guaranteed that there exists at least one string satisfying the conditions.

Input

The first line contains a single integer n ($1 \leq n \leq 10^5$).

The second line contains n integers $p'_1, p'_2, \dots, p'_n$ ($0 \leq p'_i \leq n - 1$) — the multiset.

Output

Print a single integer — the number of valid binary strings modulo 998 244 353.

Examples

standard input	standard output
1 0	2
3 0 1 1	4