Strange Permutations

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

Given a permutation P of $\{1, 2, \cdots, n\}$, determine the number of $\{1, 2, \cdots, n\}$ permutations Q satisfying that $\forall i \in \{1, 2, \cdots, n-1\}, Q_{i+1} \neq P_{Q_i}$. Output the number modulo 998244353.

Input

The first line contains one integer $n\,(1 \leq n \leq 10^5)$, denoting the size of given permutation.

The second line contains n integers $P_1, P_2, \cdots, P_n\,(1 \leq P_i \leq n)$, denoting the given permutation.

It is guaranteed that $\{P_1, P_2, \cdots, P_n\} = \{1, 2, \cdots, n\}$.

Output

Output one line containing one integer, denoting the answer number modulo 998244353.

Example

standard input	standard output
4 3 4 1 2	8

Note

The 8 permutations are:

- $\{1, 2, 3, 4\}$
- $\{1, 4, 3, 2\}$
- $\{2, 1, 4, 3\}$
- $\{2, 3, 4, 1\}$
- $\{3, 2, 1, 4\}$
- $\{3, 4, 1, 2\}$
- $\{4, 1, 2, 3\}$
- $\{4, 3, 2, 1\}$