# Problem B. Strange Permutations

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|---|---|
| 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<br>3 4 1 2 | 8 |

## Note

The 8 permutations are:

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