



HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

E. Sorting Books

time limit per test: 2 seconds memory limit per test: 256 megabytes input: standard input output: standard output

One day you wanted to read something, so you went to your bookshelf to grab some book. But when you saw how messy the bookshelf was you decided to clean it up first.



There are n books standing in a row on the shelf, the i-th book has color a_i .

You'd like to rearrange the books to make the shelf look beautiful. The shelf is considered beautiful if all books of the same color are next to each other.

In one operation you can take one book from any position on the shelf and move it to the right end of the shelf.

What is the minimum number of operations you need to make the shelf beautiful?

Input

The first line contains one integer n ($1 \le n \le 5 \cdot 10^5$) — the number of books.

The second line contains n integers a_1, a_2, \ldots, a_n $(1 \leq a_i \leq n)$ — the book colors.

Output

Output the minimum number of operations to make the shelf beautiful.

Examples

| input | Сору |
|----------------|------|
| 5 1 2 2 1 3 | |
| output | Сору |
| 2 | |

| input | Сору |
|----------------|------|
| 5 1 2 2 1 1 | |
| output | Сору |
| 1 | |

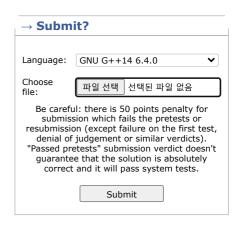
Note

In the first example, we have the bookshelf [1, 2, 2, 1, 3] and can, for example:

- 1. take a book on position 4 and move to the right end: we'll get [1, 2, 2, 3, 1];
- 2. take a book on position 1 and move to the right end: we'll get [2, 2, 3, 1, 1].

In the second example, we can move the first book to the end of the bookshelf and get $\left[2,2,1,1,1\right]$.

Codeforces Round #699 (Div. 2). Contest is running 01:32:39 Contestant



| → Score table | | |
|--|---------------|--|
| | Score | |
| <u>Problem A</u> | 446 | |
| <u>Problem B</u> | 669 | |
| <u>Problem C</u> | 1338 | |
| <u>Problem D</u> | 1784 | |
| <u>Problem E</u> | 2230 | |
| <u>Problem F</u> | 2676 | |
| Successful hack | 100 | |
| Unsuccessful hack | -50 | |
| Unsuccessful submission | -50 | |
| Resubmission | -50 | |
| * If you solve problem on 00:27 from the | first attemnt | |

2021. 2. 6. Problem - E - Codeforces

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