

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 ($1 \leq n \leq 5 \cdot 10^5$) — the number of books.

The second line contains n integers a_1, a_2, \dots, 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	Copy
5 1 2 2 1 3	
output	Copy
2	

input	Copy
5 1 2 2 1 1	
output	Copy
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 $[2, 2, 1, 1, 1]$.

Codeforces Round #699 (Div. 2).

Contest is running
01:32:39
Contestant

Submit?

Language: GNU G++14 6.4.0

Choose file: 파일 선택 선택된 파일 없음

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

Score table

	Score
Problem A	446
Problem B	669
Problem C	1338
Problem D	1784
Problem E	2230
Problem F	2676
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 00:27 from the first attempt

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