

## B. Heidi and Library (medium)

time limit per test: 10 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Whereas humans nowadays read fewer and fewer books on paper, book readership among marmots has surged. Heidi has expanded the library and is now serving longer request sequences.

### Input

Same as the easy version, but the limits have changed:  $1 \leq n, k \leq 400\,000$ .

### Output

Same as the easy version.

### Examples

input
4 100 1 2 2 1
output
2

input
4 1 1 2 2 1
output
3

input
4 2 1 2 3 1
output
3