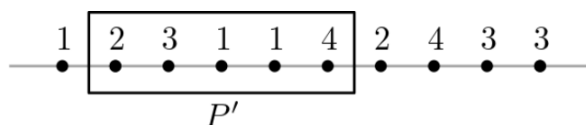




## Problem B. Double Rainbow

Input file: *standard input*  
Output file: *standard output*  
Time limit: 1 second  
Memory limit: 1024 megabytes

Let  $P$  be a set of  $n$  points on the  $x$ -axis and each of the points is colored with one of the colors  $1, 2, \dots, k$ . For each color  $i$  of the  $k$  colors, there is at least one point in  $P$  which is colored with  $i$ . For a set  $P'$  of consecutive points from  $P$ , if both  $P'$  and  $P \setminus P'$  contain at least one point of each color, then we say that  $P'$  makes a *double rainbow*. See the below figure as an example. The set  $P$  consists of ten points and each of the points is colored by one of the colors 1, 2, 3, and 4. The set  $P'$  of the five consecutive points contained in the rectangle makes a double rainbow.



Given a set  $P$  of points and the number  $k$  of colors as input, write a program that computes and prints out the minimum size of  $P'$  that makes a double rainbow.

### Input

Your program is to read from standard input. The input starts with a line containing two integers  $n$  and  $k$  ( $1 \leq k \leq n \leq 10\,000$ ), where  $n$  is the number of the points in  $P$  and  $k$  is the number of the colors. Each of the following  $n$  lines consists of an integer from 1 to  $k$ , inclusively, and the  $i$ -th line corresponds to the color of the  $i$ -th point of  $P$  from the left.

### Output

Your program is to write to standard output. Print exactly one line. The line should contain the minimum size of  $P'$  that makes a double rainbow. If there is no such  $P'$ , print 0 instead.

### Examples

standard input	standard output
10 4 1 2 3 1 1 4 2 4 3 3	5
6 3 1 1 2 2 3 3	0