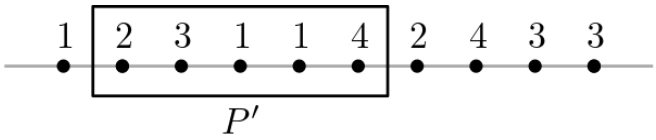
Problem B
Double Rainbow
Time Limit: 1 Second

Let P be a set of n points on the x-axis and each of the points is colored with one of the colors $1,2,\ldots,k$. 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`.

The following shows sample input and output for two test cases.

Sample Input 1	Output for the Sample Input 1
10 4 1 2 3 1 1 4 2 4 3 3	5

Sample Input 2	Output for the Sample Input 2
6 3 1 1 2 2 3 3	0