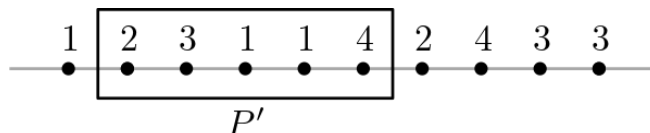


Double Rainbow

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. The names of your program file and report file are rainbow.cpp(c) and rainbow.pdf, respectively, and the time limit of your program is 1 second. There is no partial score.

Input

Your program is to read from standard input. The input starts with a line containing two integers n and k ($1 \leq k \leq n \leq 1,000,000$), 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

```
10 4
1
2
3
1
1
4
2
4
3
3
```

Output for the Sample Input 1

```
5
```

Sample Input 2

Output for the Sample Input 2

6 3 1 1 2 2 3 3	0
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