sliding your phone in some direction, your phone automatically capture each frame and merge them into a very long photo.

Usually people use this feature to take pictures of amazing views. However you are a student in data structure course, you are going to take pictures of an integer sequence. You see a beautiful long integer sequence $a_1, a_2, \cdots, a_n$ and you know that at most k integers can stay in a single frame of your smartphone camera. You are curious about how many distinct integers are there in each frame.

In other words, given an integer sequence $a_1, a_2, \cdots, a_n$, please output the number of distinct integers in each subarray with length k.

Input

The first line contains two integers n and k.

The second line contains n integers $a_1, a_2, \cdots, a_n$.

Restrictions

- $1 \leq k \leq n \leq 10^6$
- $1 \leq a_i \leq 10^9$ for $i = 1, 2, \cdots, n$

Output

For each subarray with length k from the leftmost to the rightmost, please output the number of distinct integer in it.

Sample Input 1

```
6 3
4 8 8 7 6 3
```

Sample Output 1

```
2 2 3 3
```

Submissions

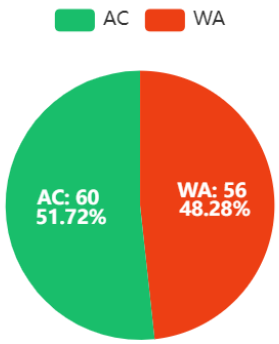
Rankings

View Contest

Information

ID	3
Time Limit	3000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	ta_redleaf
Level	Hidden
Score	100
Tags	Show

Statistic Details



You have solved the problem

Submit for Sample Test

Submit

Contest has ended

Sample Test Input

```
6 3
4 8 8 7 6 3
```

Sample Test Output