

Count distinct elements in every window

Given an array of integers and a number K. Find the count of distinct elements in every window of size K in the array.

Example 1:

Input:

N = 7, K = 4

A[] = {1,2,1,3,4,2,3}

Output: 3 4 4 3

Explanation: Window 1 of size k = 4 is

1 2 1 3. Number of distinct elements in this window are 3.

Window 2 of size k = 4 is 2 1 3 4. Number of distinct elements in this window are 4.

Window 3 of size k = 4 is 1 3 4 2. Number of distinct elements in this window are 4.

Window 4 of size k = 4 is 3 4 2 3. Number of distinct elements in this window are 3.

Example 2:

Input:

N = 3, K = 2

A[] = {4,1,1}

Output: 2 1

Your Task:

Your task is to complete the function **countDistinct()** which takes the array A[], the size of the array(N) and the window size(K) as inputs and returns an array containing the count of distinct elements in every contiguous window of size K in the array A[].

Expected Time Complexity: O(N).

Expected Auxiliary Space: O(N).

Constraints:

$1 \leq K \leq N \leq 10^5$

$1 \leq A[i] \leq 10^5$, for each valid i