- **EASY**
- **Max Score: 30 Points**

Count distinct elements in Sliding window

Given an array `arr` of integers and a number `K`.

Find the count of distinct elements in every window of size `K` in the array.

Input Format

Input consists of two lines.

First line contains an integer `n` which is the size of the array and an integer `K` which is the size of the window.

Next line contains `n` spaced integers of the array.

Output Format

Print the distinct elements in each window of size `K` in the array separated by space.

Example 1

Input

```
7 4
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

```
3 2
4 1 1
```

Output

```
2 1
```

Explanation

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

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

Constraints

```
1 <= k <= n <= 10^5
```

```
1 <= arr[i] <= 10^3
```

My code

```java
// in java
import java.util.*;
import java.lang.*;
import java.io.*;

public class Main
{
    static void count(int arr[],int n,int k)
    {
            HashMap<Integer,Integer>hm=new HashMap<>();

            for(int i=0;i<k;i++)
                {
                    hm.put(arr[i],hm.getOrDefault(arr[i],0)+1);
                }
            System.out.print(hm.size()+" ");
            int i=0,j=k;
            while(j<n)
                {
                    hm.put(arr[j],hm.getOrDefault(arr[j],0)+1);
                    hm.put(arr[i],hm.getOrDefault(arr[i],0)-1);
                    if(hm.get(arr[i])==0)
                        hm.remove(arr[i]);
                     System.out.print(hm.size()+" ");
                    i++;
                    j++;
                }
    }
    public static void main (String[] args) throws java.lang.Exception
```

```java
    {
        //your code here
        Scanner s=new Scanner(System.in);
        int n=s.nextInt();
        int k=s.nextInt();
        int arr[]=new int[n];
        for(int i=0;i<n;i++)
        arr[i]=s.nextInt();
       count(arr,n,k);
    }
}
```