



# Super Kth LIS



by harshil7924

Problem

Submissions

Leaderboard

Discussions

Editorial

Given an array of  $N$  integers  $(a_0, a_1, \dots, a_{N-1})$ , find all possible increasing subsequences of maximum length,  $L$ . Then print the lexicographically  $K^{th}$  longest increasing subsequence as a single line of space-separated integers; if there are less than  $K$  subsequences of length  $L$ , print  $-1$ .

Two subsequences  $[a_{p_0}, a_{p_1}, \dots, a_{p_{L-2}}, a_{p_{L-1}}]$  and  $[a_{q_0}, a_{q_1}, a_{q_2}, \dots, a_{q_{L-2}}, a_{q_{L-1}}]$  are considered to be *different* if there exists at least one  $i$  such that  $p_i \neq q_i$ .

## Input Format

The first line contains 2 space-separated integers,  $N$  and  $K$ , respectively.

The second line consists of  $N$  space-separated integers denoting  $a_0, a_1, \dots, a_{N-1}$  respectively.

## Constraints

- $1 \leq N \leq 10^5$
- $1 \leq K \leq 10^{18}$
- $1 \leq a_i \leq N$

## Scoring

- $1 \leq N \leq 10^3$  for 30% of the test data.
- $1 \leq N \leq 10^5$  for 100% of the test data.

## Output Format

Print a single line of  $L$  space-separated integers denoting the lexicographically  $K^{th}$  longest increasing subsequence; if there are less than  $K$  subsequences of length  $L$ , print  $-1$ .

**Note:**  $L$  is the length of longest increasing subsequence in the array.

## Sample Input 0

```
5 3
1 3 1 2 5
```

## Sample Output 0

```
1 3 5
```

## Sample Input 1

```
5 2
1 3 2 4 5
```

## Sample Output 1

1 3 4 5

### Explanation

Sample Case 0:

The longest possible increasing subsequences in lexicographical order are:

1. [1, 2, 5]
2. [1, 2, 5]
3. [1, 3, 5]

Notice that the first and second subsequences appear the same; they are actually both *different* because the **1** in the first subsequence comes from array element  $a_0$ , and the **1** in the second subsequence comes from array element  $a_2$ . Because  $K = 3$ , we print the  $3^{rd}$  one ([1, 3, 5]) as a single line of space-separated integers.

Sample Case 1:

The longest possible increasing subsequences in lexicographical order are:

1. [1, 2, 4, 5]
2. [1, 3, 4, 5]

Because  $K = 2$ , we print the  $2^{nd}$  one ([1, 3, 4, 5]) as a single line of space-separated integers.

[f](#) [t](#) [in](#)



Submissions: 74

Max Score: 90

Difficulty: Advanced

Rate This Challenge:

☆☆☆☆☆

[More](#)Current Buffer (saved locally, editable)  

Java 7



```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

 Upload Code as File☐ Test against custom input

Run Code

Submit Code

Join us on IRC at [#hackerrank](#) on freenode for hugs or bugs.

[Contest Calendar](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)