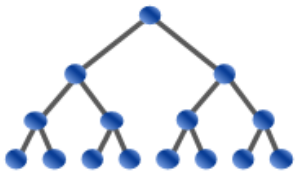
USA Computing Olympiad



USACO 2022 January Contest, Platinum
Problem 1. Minimizing Haybales

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Time Remaining: **3 hrs, 59 min, 55 sec**

Not submitted yet

English (en)

Bessie is bored and yet again causing trouble in Farmer John's barn. FJ has N ($1 \leq N \leq 10^5$) stacks of haybales. For each $i \in [1, N]$, the ith stack has h_i ($1 \leq h_i \leq 10^9$) haybales. Bessie does not want any haybales to fall, so the only operation she can perform is as follows:

- If two adjacent stacks' heights differ by at most K ($1 \leq K \leq 10^9$), she can swap the two stacks.

What is the lexicographically minimum sequence of heights that Bessie can obtain after some sequence of these operations?

****Note: the time and memory limits for this problem are 4s and 512MB, twice the defaults.****

INPUT FORMAT (input arrives from the terminal / stdin):

The first line of input contains N and K. The $i+1$-st line contains the height of the i-th haybale.

OUTPUT FORMAT (print output to the terminal / stdout):

Please print out N lines, the i-th containing the height of the i-th haybale in the solution.

SAMPLE INPUT:

```
5 3
7
7
3
6
2
```

SAMPLE OUTPUT:

```
6
7
7
2
3
```

One way that Bessie can swap the stacks is as follows:

```
   7 7 3 6 2
-> 7 7 6 3 2
-> 7 7 6 2 3
-> 7 6 7 2 3
-> 6 7 7 2 3
```

SCORING:

- In 10% of all input cases, $N \leq 100$
- In another 20% of all input cases, $N \leq 5000$
- In the remaining 70% of input cases, there are no additional constraints

Problem credits: Daniel Zhang and Benjamin Qi

Language: C

Source File: Choose File No file chosen

Submit Solution