Baltic OI '07 P3 - Sound

Time limit: 0.6s Python: 3.0s **Memory limit:** 32M Python: 512M

Baltic Olympiad in Informatics: 2007 Day 1, Problem 3

In digital recording, sound is described by a sequence of numbers representing the air pressure, measured at a rapid rate with a fixed time interval between successive measurements. Each value in the sequence is called a *sample*.

An important step in many voice-processing tasks is breaking the recorded sound into chunks of non-silence separated by silence. To avoid accidentally breaking the recording into too few or too many pieces, the silence is often defined as a sequence of m samples where the difference between the lowest and the highest value does not exceed a certain threshold c.

Write a program to detect silence in a given recording of n samples according to the given parameter values m and c.

Input Specification

The first line of the file contains three integers: n $(1 \leq n \leq 1\,000\,000)$, the number of samples in the recording; m $(1 \leq m \leq 10\,000)$, the required length of the silence; and c $(0 \leq c \leq 10\,000)$, the maximal noise level allowed within silence.

The second line of the file contains n integers a_i $(0 \leq a_i \leq 1\,000\,000$ for $1 \leq i \leq n)$, separated by single spaces: the samples in the recording.

Output Specification

The output should list all values of i such that $\max(a[i \ldots i+m-1]) - \min(a[i \ldots i+m-1]) \leq c$. The values should be listed in increasing order, each on a separate line.

If there is no silence in the input, write `NONE` on the first and only line of the output.

Sample Input

```
7 2 0
0 1 1 2 3 2 2
```

Sample Output

```
2
6
```