P3509 [POI 2010] ZAB-Frog

题目描述

On the bed of one particularly long and straight Byteotian brook there lie n rocks jutting above the water level. Their distances from the brook's spring are $p_1 < p_2 < \cdots < p_n$ respectively. A small frog sitting on one of these is about to begin its leaping training. Each time the frog leaps to the rock that is the -th closest to the one it is sitting on. Specifically, if the frog is sitting on the rock at position p_i, then it will leap onto such p_j that:

$$|\{p_a : |p_a - p_i| < |p_j - p_i|\}| \leq k \text{ and } |\{p_a : |p_a - p_i| \leq |p_j - p_i|\}| > k$$

If p_j is not unique, then the frog chooses among them the rock that is closest to the spring. On which rock the frog will be sitting after m leaps depending on the rock is started from?

输入格式

The first line of the standard input holds three integers, n, k and m ($1 \leq k < n \leq 1\,000\,000, 1 \leq m \leq 10^{18}$), separated by single spaces, that denote respectively: the number of rocks, the parameter k, and the number of intended leaps. The second line holds n integers p_j ($1 \leq p_1 < p_2 < \cdots < p_n \leq 10^{18}$), separated by single spaces, that denote the positions of successive rocks on the bed of the brook.

输出格式

Your program should print a single line on the standard output, with n integers $r_1, r_2, \cdots, r_n$ from the interval $[1, n]$ in it, separated by single spaces. The number r_i denotes the number of the rock that the frog ends on after making m leaps starting from the rock no. i (in the input order).

输入输出样例 #1

输入 #1

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5 2 4
1 2 4 7 10
```

输出 #1

```
1 1 3 1 1
```

说明/提示

样例 #1 解释：

The figure presents where the frog leaps to (in a single leap) from each and every rock.