

Submit a solution for C-111632. Christmas Gifts

Time limit: 1 s
Real time limit: 5 s
Memory limit: 256M

Problem C: 111632. Christmas Gifts

Christmas is coming! Everyone is preparing gifts for their families. The Damir's family is also preparing for this. The Damir's family has many childre so the parents decided to buy n various gifts. Parents decided to number these gifts - i-th as a_i . They hang them on Christmas tree in socks, following the form binary search tree. In particular, they insert i-th gift with the value a_i following the rules of binary search tree.

As you know, Damir is the smallest among the whole family. Therefore, parents for the holiday allowed him to pick up his gift first. Damir knew that I gift has number k, but he mistakenly assumed that all the gifts below his gift were also intended for him. Now, parents are confused and want to fill out what gifts Damir wants to grab for himself.

Input format

The first line contains one integers n ($1 \le n \le 10^3$) - the number of gifts. The second line contains n integers a_i . ($1 \le a_i \le 10^3$) The third line contain one integer k ($1 \le k \le 10^3$). It is guaranteed that the array has the number k.

Output format

You should output this subtree in pre-order (root, left subtree, right subtree).

Examples

Input

5 4 2 7 1 3 2

Output

2 1 3

Notes

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