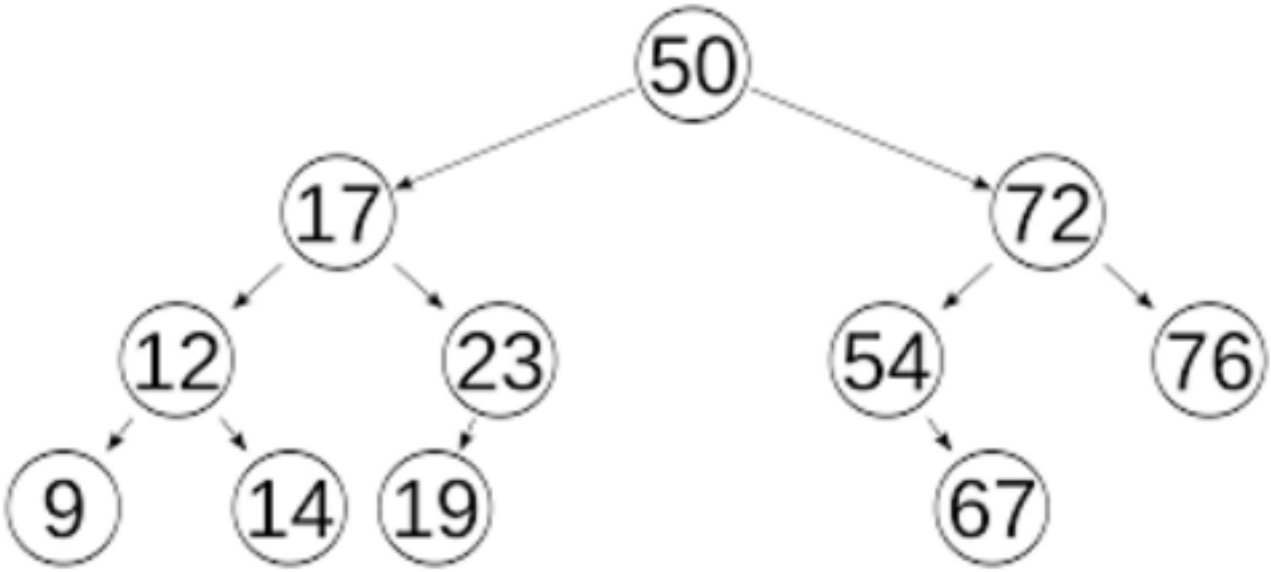
DSA Lab 8 | Set 1 | RightBST

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Given a set of unique integers representing pre-order traversal, create a binary-search tree (BST). The BST should support the following queries:

1. DeleteNode: Deletes the node with the given value. You may assume that a node with the given value exists in the tree.
2. PrintRightProfile: Gives right profile of the tree. A right profile of a binary tree gives the list of nodes, starting from the root, that may be visible when viewed from right side of the tree.

Consider the given binary search tree:



Right profile for this tree would be 50, 72, 76, 67.

Input

The first line contains two space separated integers N and Q, indicating the number of nodes in the tree initially and number of queries respectively.
The second line contains N space separated integers ($1 \leq value \leq N$), indicating the node values of the BST when traversed in pre-order.
The next Q lines indicate the query in each line. The query will be in the following format:

- `1 val` : Where 1 indicates the DeleteNode query and value is an integer value of the node to delete.
- `2` : Where 2 indicates the PrintRightProfile query.

Easy: $1 \leq N \leq 10$, $1 \leq Q \leq 10$
Advanced: $1 \leq N \leq 1000$, $1 \leq Q \leq 1000$

Output

Output should contain an output for every Query number 2.
Query 2 should print single space separated integers indicating node values in right profile of the BST.

Note

Sample Input:
9 3
7 2 1 4 3 5 6 9 8
2
1 8
2

Sample Output:
7 9 8 5 6
7 9 4 5 6

For deleting a node with two children, kindly use the minimum value in the right subtree.