

## Leaves

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          2 seconds  
Memory limit:       64 megabytes

L has a binary tree with each leaf node  $u$  labeled  $a_u$ .

If we traverse the entire tree in order (left child, then right child), we can place all the leaf nodes in a sequence.

Now, L will perform the following operation **exactly**  $m$  times:

1. Choose a non-leaf vertex  $a$ .
2. Swap the left child and right child of vertex  $a$ .

After these operations, L wants you to determine the lexicographically minimum sequence that he can achieve.

## Input

The first line of the input contains two integers  $n$  and  $m$  ( $0 \leq m \leq \frac{n-1}{2}, n \leq 1000, 2 \nmid n$ ).

Then  $n$  lines, the  $i$ -th line starts with an integer  $type \in \{1, 2\}$ .

- if  $type = 1$ , then two integers  $l_i, r_i$  ( $i < l_i, r_i$ ), indicating the left and right child of  $i$ , respectively.
- if  $type = 2$ , then a single integer  $a_i$  ( $1 \leq a_i \leq 10^9$ ), indicating the label of this leaf.

## Output

Output a line contains  $\frac{n+1}{2}$  integers, indicating the optimal sequence.

## Examples

standard input	standard output
3 0 1 2 3 2 1 2 2	1 2
7 1 1 2 3 1 4 5 1 6 7 2 4 2 2 2 3 2 1	2 4 3 1
7 2 1 2 3 1 4 5 1 6 7 2 4 2 2 2 3 2 1	1 3 4 2