Qheap 1

This question is designed to help you get a better understanding of basic heap operations.

There are 33 types of query:

- "1 v1 *v*" Add an element to the heap.
- "2 v2 *v*" Delete the element from the heap.
- "33" Print the minimum of all the elements in the heap.

NOTE: It is guaranteed that the element to be deleted will be there in the heap. Also, at any instant, only distinct elements will be in the heap.

Input Format

The first line contains the number of queries, Q*Q*.

Each of the next Q*Q* lines contains one of the 33 types of query.

Constraints

- 1≤Q≤1051≤*Q*≤105
- −109≤v≤109−109≤*v*≤109

Output Format

For each query of type 33, print the minimum value on a single line.

Sample test

inputcopy
5 1 4 1 9 3 2 4 3
outputcopy
4 9

Explanation for sample test

After the first 22 queries, the heap contains {4,9}{4,9}. Printing the minimum gives 44 as the output. Then, the 4th4*th* query deletes 44 from the heap, and the 5th5*th* query gives 99 as the output.