Easy!

Description

Now, Yen-Jen, the master of ICPC, wants to challenge you an easy problem about queue!

As we all know, "queue" is a data structure which can support the following two operations:

1. push: insert an element in the data structure
2. pop: delete the earliest inserted element that has not yet deleted in the data structure

Now, Yen-Jen wants to support another cool function on this queue. He wants the queue can display the maximum element after each operation. If the queue is empty, then the maximum element is zero!

Initially, the queue is empty. Now, given N operations, you must output the maximum element after each operation.

Input

The first line in the input contains one integer N denotes the number of operations.

In the next N lines, which the i^{th} line denotes the i^{th} operation. Each line is one of the following formats:

- 1 x : push x into the queue
- 2 : pop an element in the queue. It is guaranteed that there is at least one element in the queue.

Note that the queue is initially empty.

- $1 \leq N \leq 2 \times 10^5$
- $1 \leq x \leq 10^9$

Output

Output N lines, the i^{th} is the maximum element in the queue after doing operation 1 to i.

Sample Input

```
6
1 155136
1 880301
2
1 87
2
2
```

Sample Output

```
155136
880301
880301
880301
87
0V
```