Problem C. C

Time limit	2000 ms
Mem limit	131072 kB
OS	Linux

A priority queue is a data structure which maintains a set S of elements, each of with an associated value (key), and supports the following operations:

- $insert(S, k)$: insert an element k into the set S
- $extractMax(S)$: remove and return the element of S with the largest key

Write a program which performs the $insert(S, k)$ and $extractMax(S)$ operations to a priority queue S. The priority queue manages a set of integers, which are also keys for the priority.

Input

Multiple operations to the priority queue S are given. Each operation is given by "insert k", "extract" or "end" in a line. Here, k represents an integer element to be inserted to the priority queue.

The input ends with "end" operation.

Output

For each "extract" operation, print the element extracted from the priority queue S in a line.

Constraints

- The number of operations $\leq 2,000,000$
- $0 \leq k \leq 2,000,000,000$

Sample Input 1

```
insert 8
insert 2
extract
insert 10
extract
insert 11
extract
```

```
extract
end
```

Sample Output 1

```
8
10
11
2
```