Collection of numbers   P14998_en

Concurso On-line 6 (OIE08) (2008)

Your task is to write a program that mantains a collection of integer numbers, possibly repeated, and that does the operation according to the indications of the user:

- S x: Stores a copy of the number x given.

- C: Consults the greatest number of the collection.

- D: Deletes the greatest number of the collection (one of them, if it is repeated).

- I x: Increases the greatest number (one of them, if it is repeated) in x units.

- D x: Decreases the greatest number (one of them, if it is repeated) in x units.

Input

The input consists of a sequence of orders as the described ones, each one in a line.

Output

For each done query, your program must print in a line the greatest number in that moment. Also, it must print an error line for each operation (except the store operation) when the collection does not have any number, following the format of the instance.

Hint: Notice that the collection can have repeated elements. Moreover, is necessary that your solution is very fast: if you have never used heaps (*priority_queue*) or (*map*), you should take advantage to learn. Perhaps asking in the forum... (when the contest ends, of course).

Sample input

```
C
G 10    C
G -7    C
G 20    C
I 3     C
D 15    C
E       C
G 30    C
D 37    E     C
E       C
E
I 1
C
E
D 3
G 4
C
```

Sample output

```
error: no elements
10
10
20
23
10
8
30
-7
-7
error: no elements
error: no elements
error: no elements
error: no elements
4
```

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Problem information

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