Collection of numbers   P50709_en

Write a program to keep a collection of integer numbers, perhaps with repetitions, while performing the following operations:

- 's' x : Stores a copy of the given number x.

- 'A' : Asks for the greatest number.

- 'R' : Removes the greatest number (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

Input consists of several operations.

Output

For every query, the current greatest number. Print also an error line for each operation (except storing) when the collection is empty.

Sample input

```
A
S 10    A
S -7    A
S 20    A
I 3     A
D 15    A
R       A
S 30    A
D 37    R     A
R       A
R       I 1
A
R
D 3
S 4     A
```

Sample output

```
error!
10
10
20
23
10
8
30
-7
-7
error!
error!
error!
error!
4
```

Problem information

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Generation : 2018-10-23 16:13:42