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► [How To?](#)

► [Week 1](#)

▼ [Week 2](#)

[Computational Complexity. Linear Data Structures](#)

[2nd Week Problems](#)

[due Nov 14, 2016 22:00 CET](#)

[2nd Week Problems: Training](#)

[2nd Week: Editorials](#)

► [Week 3](#)

► [Week 4](#)

► [Week 5](#)

Week 2 > 2nd Week Problems > Queue with Minimum

Queue with Minimum

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Queue with Minimum

2.0/2.0 points (graded)

Input file:	queuemin.in
Output file:	queuemin.out
Time limit:	2 seconds
Memory limit:	256 megabytes

Implement a queue which supports push and pop operations, and additionally a minimum query, which returns a minimum among the elements in the queue. For every minimum query, output its result.

Input

The first line of the input file contains a single integer number N ($1 \leq N \leq 10^6$) – the number of commands. N lines follow, each line contains exactly one command. There are the following commands:

- $+ x$: push x to the queue. Every x will be an integer such that $|x| \leq 10^9$. The symbol $+$ and the number will be separated by exactly one white space.
- $-$: pop an element from the queue. It is guaranteed that this operation will never be executed on an empty queue.
- $?$: query a minimum element in the queue. It is guaranteed that this operation will never be executed on an empty queue. There will be at least one such query.

Output

Output the results of the minimum queries on the queue, one per line, in the order they were performed.

Example

queuemin.in	queuemin.out

10	1
+ 1	10
+ 10	2
?	2
-	
?	
+ 2	
?	
+ 1234	
-	
?	
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Topic: 04: 2nd Week Problems / Queue with Minimum

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