# QHEAP1

This question is designed to help you get a better understanding of *basic heap* operations.
You will be given queries of $3$ types:

- "$1\ v$" - Add an element $v$ to the heap.
- "$2\ v$" - Delete the element $v$ from the heap.
- "$3$" - Print the minimum of all the elements in the heap.

***NOTE**: It is guaranteed that the element to be deleted will be there in the heap. Also, at any instant, only distinct elements will be in the heap.*

**Input Format**

The first line contains the number of queries, $Q$.
Each of the next $Q$ lines contains a single query of any one of the $3$ above mentioned types.

**Constraints**
$1 \leq Q \leq 10^5$
$-10^9 \leq v \leq 10^9$

**Output Format**

For each query of type $3$, print the minimum value on a single line.

**Sample Input**

```
5
1 4
1 9
3
2 4
3
```

**Sample Output**

```
4
9
```

**Explanation**

After the first $2$ queries, the heap contains $\{4, 9\}$. Printing the minimum gives $4$ as the output. Then, the $4^{th}$ query deletes $4$ from the heap, and the $5^{th}$ query gives $9$ as the output.