



Hello, 2024101067.

HEAPIFY

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Problem Statement

You are required to implement a min heap. You are given Q queries. The queries can be of the following types:

- **1 X** This query type inserts the element X into the min heap.
- **2** This query type removes the minimum element from the min heap.
- **3** This query type prints the minimum element of the minimum heap.

Clarification

All testcases are valid. You won't be asked to delete or print the min element from a empty heap.

Input Format

Each test case consists of q queries. The description of the test cases is as follows:

- The first line of each test case will contain one integer q representing the number of queries.
- Following would be q lines of queries, each having an integer a , specifying the type of the query and integers x , if query is of 1st type.

Output Format

Print the minimum element in the heap whenever the query is of 3rd type in separate line.

Constraints

 $-1e9 \leq x \leq 1e9$ Hello, **2024101067**.

Sample Testcase

Input

```
7
1 4
1 5
3
1 8
1 6
2
3
```

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Output

```
4
5
```

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? Clarifications

[Request clarification](#)

No clarifications have been made at this time.