

Ice Cream Queue 4

1 second, 64 MB, no STL containers

An ice cream shop provides fabulous ice cream. The customers arrive at the shop are served from the youngest to the oldest ones. More specifically, when the shop takes a new customer, the youngest one among the waiting customers is called to get an ice cream. **If there are customers with the exact same age, the one arriving at the shop first is served first.**

There are two possible events.

- A number of customers arrive at the shop. They will be in the queue. Each customer is a member and has a unique integer ID. Each customer also specify her/his age in minutes. The customs in this group arrive at the shop in this order.
- The youngest customer in the queue is served. If there are customers with the same youngest age, the one arriving first is served. This type of events only happens when there is at least one customer in the queue.

Write a program that simulate the ice cream queue.

Input

The first line of the input contains an integer M ($1 \leq M \leq 100,000$) denoting the number of events. The next M lines specify the event information in the following format.

Each event line starts with an integer T specifying the event type.

If $T=1$, customers arrive. On the same line, an integer N ($1 \leq N \leq 100$), the number of arriving customers, follows. The next N pairs of integers specify the customer ID's of each customer and the age of that customer. More specifically, each pair consists of the customer ID (from 1 to 1,000,000) and the age in minutes (from 1 to 40,000,000). They also arrive at the shop in this order.

If $T=2$, the youngest customer in the queue is served. If there are more than one customers with the same youngest age, the one arriving first is served.

The total number of customers will not be larger than 100,000.

Output

For each line where $T=2$, your program should output the customer ID of the customer.

Example

Input	Output
7	3
1 2 4 100 3 40	6
2	4
1 3 8 100 6 20 2 150	8
2	
2	
2	
1 6 10 1 20 1 30 1 40 1 50 1 60 1	

Notes: This is a practice task for implementing data structures. Therefore, you are not allowed to use any STL container classes. However, other supporting classes for STL are OK. E.g., you can use `pair`.