Queues of a supermarket (2) P83396_en

Simulate the behavior of the queues of a supermarket. Initially, there are n queues $(1, 2, \ldots, n)$, each one with some customers. Afterwards, two events can happen:

- A costumer arrives to a queue: If the queue is between 1 and n, the customer goes to the end of that queue. Otherwise, the event is ignored.
- A customer leaves a queue: If the queue is between 1 and n, and that queue is not empty, the oldest customer of that queue leaves it. Otherwise, the event is ignored.

Input

Input starts with the number of queues n (a strictly positive natural number). Follow n lines, one per queue, each one with its customers (a word) and their ages (a real number). Follow an empty line and the description of several events, one per line: the word "`ENTERS`" followed by the customer, the customer's age, and the queue; or the word "`LEAVES`" followed by the queue. All the customers have different ages.

Output

First, print the name of the customers that leave the queues, in the order that they departed. Afterwards, print the final content of the n queues, using the order in which the customers would leave. Follow the format of the example.

Sample input 1

```
4
Cristina 10 Tomas 27
Francesc 70 Damia 25.5 Domenec 80

Teresa 19 Toni 83 Carles 24

LEAVES 1
LEAVES 1
ENTERS Amalia 30 4
LEAVES 2
LEAVES 1
ENTERS Leo 22 1
ENTERS Maria 20 3
LEAVES 4
LEAVES 4
LEAVES 3
ENTERS Carme 18 4
LEAVES 2
LEAVES -1
LEAVES 2
```

Sample output 1

```
DEPARTS
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Tomas
Cristina
Domenec
Toni
Amalia
Maria
Francesc
Damia

FINAL CONTENTS
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queue 1: Leo
queue 2:
queue 3:
queue 4: Carles Teresa Carme
```

Problem information

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