Problem 11: Queue Machine

Statement

Harry, Ron, and Hermione went to the Three Broomsticks pub to take a break from homework and fighting evil. Unfortunately, the service wasn't as excellent as they expected, So they contacted the manager to propose a better way to manage the pub, a queue machine that works as follows:

1 - Order a ticket: Add the number of ticket to the queue

Input : NEW

2 - Cancel the order: Delete the number of the order from the queue.

Input: CANCEL nb_of_order

3 - Consult the first customer in the queue: Print the first ticket of the queue.

Input: SHOW FIRST

output: nb_of_first_order_in_the_queue

4 - Consult the last customer in the queue: Print the last ticket of the queue.

Input: SHOW LAST

output: n_of_last_order_in_the_queue

5 - Consult all the customers in the queue: Print all tickets in the queue.

Input: SHOW ALL

output: Print all the queue

6 - Pass to the next costumer: Pop the first customer from the queue.

Input: NEXT.

Note:

- Print an empty queue as 0.
- There won't be any special cases like canceling an order while the queue is empty.

Input

The first line **n**, denoting the number of commands.

The next n lines, where each one contains a command.

Output

Based on the commands entered (check the command list).

Example

Input	Output
17 NEW NEW NEW SHOW ALL NEXT NEW NEW SHOW ALL NEXT CANCEL 4 SHOW FIRST NEW SHOW LAST NEXT NEXT NEXT SHOW ALL	1 2 3 2 3 4 5 3 6 0