Before attempting the problem, you are **required** to thoroughly read the reference material - https://www.hackerearth.com/practice/data-structures/queues/basics-of-queues/tutorial/.

Statement

Implement and operate a queue according to input. There are two operations to be implemented.

1. Enqueue

2. Dequeue

Input

The first line contains an integer N, the number of operations that follow. The operations are formatted as given below

Enqueue $E\ x$ - enqueue x.

Dequeue D - dequeue an element.

Output

For each operation, the output should be as given below.

Enqueue Print the new size of the queue.

Dequeue Print two space-separated integers, the deleted element (1 if queue is empty) and the new size of the queue.

Constraints

- $1 \leq N \leq 100$

- $1 \leq x \leq 100$

Sample

Sample Input	Sample Output
5	1
E 2	2 0
D	1 0
D	1
E 3	3 0
D	