

# Doubly Linked List

Time Limit : 1 sec, Memory Limit : 131072 KB

## Doubly Linked List

Your task is to implement a double linked list.

Write a program which performs the following operations:

- insert x: insert an element with key x into the front of the list.
- delete x: delete the first element which has the key of x from the list. If there is not such element, you need not do anything.
- deleteFirst: delete the first element from the list.
- deleteLast: delete the last element from the list.

## Input

The input is given in the following format:

```
n
command1
command2
...
commandn
```

In the first line, the number of operations  $n$  is given. In the following  $n$  lines, the above mentioned operations are given in the following format:

- insert x
- delete x
- deleteFirst
- deleteLast

## Output

Print all the element (key) in the list after the given operations. Two consecutive keys should be separated by a single space.

## Constraints

- The number of operations  $\leq 2,000,000$
- The number of delete operations  $\leq 20$
- $0 \leq \text{value of a key} \leq 10^9$
- The number of elements in the list does not exceed  $10^6$
- For a delete, deleteFirst or deleteLast operation, there is at least one element in the list.

## Sample Input 1

```
7
insert 5
insert 2
insert 3
insert 1
delete 3
insert 6
delete 5
```

## Sample Output 1

```
6 1 2
```

**Sample Input 2**

```
9
insert 5
insert 2
insert 3
insert 1
delete 3
insert 6
delete 5
deleteFirst
deleteLast
```

**Sample Output 2**

```
1
```

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Source: [https://onlinejudge.u-aizu.ac.jp/problems/ALDS1\\_3\\_C](https://onlinejudge.u-aizu.ac.jp/problems/ALDS1_3_C)