Submit a solution for H-195823. Zoro and Seven Sword Style.

Time limit: 1500 ms

Real time limit: 5 s

Memory limit: 256M

Problem H: 195823. Zoro and Seven Sword Style.

THE CODE TEMPLATE IS IN THE NOTE BELOW.

Zoro got lost again, this time in the maze. Walking along a random corridor, he stumbles upon a mysterious door, which says that this is the exit fro the maze. The door mechanism works on specific functions for the linked list. But due to the fact that the door is very old, the functions have be erased. Zoro discovered an ancient stone paneglyph nearby, which lists about each function:

1. inserts - add a node on position p.
2. remove - remove the node from position p.
3. print - print all values of list separated by a space.
4. replace - move the node from position p1 and to position p2. Position p2 is considered at the moment after its removal.
5. reverse - reverse the entire list.
6. cyclic_left - do a cyclic shift to the left x times.
7. cyclic_right - do a cyclic shift to the right x times.

Also, there are indicated the commands that need to be executed in order for the door to open. It is known that each command calls a specif function. Help Zoro to restore functions.

Input format

Each line of input starts with integer which indicates command:

- If command 0, exit the program.
- If command 1, then the same line of input contains numbers x $(0 \leq x \leq 10^6)$ and p $(0 \leq p)$. Add a new node with value x to the position p. It guaranteed that p does not exceed the length of the list.
- If command 2, then the same line of input contains number p $(0 \leq p)$. Delete the node from position p. It is guaranteed that p is less than the length the list.
- If command 3, print the whole list. Print -1 if list is empty.
- If command 4, then the same line of input contains numbers p1 and p2 $(0 \leq p1, p2)$. Move node from position p1 to position p2. Position p2 is counte from the moment when we have already retrieved the node from position p1. It is guaranteed that p1 and p2 are less than the length of the list.
- if command 5, reverse whole list.
- If command 6, then the same line of input contains number x. Make left cyclic shift x $(0 \leq x)$ times. It is guaranteed that x is less than the length of th list.
- If command 7, then the same line of input contains number x. Make right cyclic shift x $(0 \leq x)$ times. It is guaranteed that x is less than the length the list.

Subtasks

1. (20%) Implement each function in $O(N^2)$ or faster.
2. (20%) Implement functions inserts, remove, print and replace in $O(N)$.
3. (20%) Implement functions inserts, remove, print and reverse in $O(N)$.
4. (20%) Implement functions inserts, remove, print, cyclic_left and cyclic_right in $O(N)$.

Output format

For each command print, print all values of list separated by a space

For each command print, print all values of list separated by a space.

Note

Each function except print must return the head of the linked list.

CODE TEMPLETES

C++ : https://pastebin.com/BAG1n8Kp

Python : https://pastebin.com/9mwkZnEh

Java : https://pastebin.com/jfhpYWYR

Just leave it to luck

— Roronoa Zoro, *One Piece*

Examples

Input

```
1 0 0
3
1 1 0
3
1 2 2
3
4 0 0
3
4 0 1
3
1 3 2
3
4 2 0
3
4 3 1
3
4 2 3
3
0
```

Output

```
0
1 0
1 0 2
1 0 2
0 1 2
0 1 3 2
3 0 1 2
3 2 0 1
3 2 1 0
```

Input

```
1 0 0
1 1 1
1 2 2
1 3 3
3
5
3
1 4 0
5
3
0
```

Output

```
0 1 2 3
3 2 1 0
0 1 2 3 4
```

Input

```
1 0 0
1 1 1
1 2 2
1 3 3
3
7 0
3
7 1
3
6 1
3
6 2
3
1 4 2
3
6 4
3
7 3
3
```

```
0
```

Output

```
0 1 2 3
0 1 2 3
3 0 1 2
0 1 2 3
2 3 0 1
2 3 4 0 1
1 2 3 4 0
3 4 0 1 2
```

Submit a solution

Language: g++ - GNU C++ 11.4.0

File Choose File No file chosen

Send! Send!

Previous submissions of this problem

Run ID	Time	Size	Problem	Language	Result	Failed test	View source	View report
1507	538:39:11	2960	H	g++	OK	N/A	View	View

A B C D E F H I K L