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# Persistent Queue

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          1 second  
Memory limit:       256 megabytes

Given a set of operations and a queue  $Q$ , you should process operations in order. Each operation is one of the following types:

- **enqueue**  $x$ : add  $x$  to the end of the last version of the queue.
- **dequeue**: remove the front element of the last version. If the queue is empty, do nothing.
- **print**  $v$ : print the elements of the queue at version  $v$ . If the queue is empty, print **empty**.

The initial version is 0 which represents an empty queue. **dequeue** and **enqueue** operations create new versions which are enumerated sequentially starting from 1.

## Input

The first line contains a single integer  $q$  ( $1 \leq q \leq 10000$ ) — the number of operations.

Then  $q$  lines follow, each describing an operation as mentioned above. The enqueued elements will be 32-bit signed integers.

There will be at most 100 operations of type **print**.

## Output

For each query of type **print**  $v$ , print one line containing the elements of the queue at version  $v$  separated by spaces.

## Example

standard input	standard output
14	empty
print 0	1 2 3 4 5
enqueue 1	1 2 3 4 5
enqueue 2	2 3 4 5
enqueue 3	1 2 3 4 5
enqueue 4	2 3 4 5
enqueue 5	2 3 4 5 6
print 5	
dequeue	
print 5	
print 6	
enqueue 6	
print 5	
print 6	
print 7	

## Note

**dequeue** operations always create new versions even if nothing was dequeued (the queue was already empty).