

# Queues

In this problem, you have to implement queues in C/C++. There are operations that you must implement.

1) Enqueue : Takes an element and adds it to the back of the queue.

2) Dequeue: Removes the first element in the queue.

3) Is\_Empty : Returns true if the queue is empty, false otherwise.

Note: Using standard library implementation is NOT allowed and will be considered cheating. The penalty shall be applied as it given in the handout is for cheating cases.

## Input

First line contains t: the number of test cases. Each test case has lines.

The first line contains q, the number of queries. q lines follow.

Each query is has one or two space separated integers. The first is the opcode. 1 for Enqueue, 2 for Dequeue and 3 for Is\_Empty.

If the opcode is 1, then there is another argument x that denotes the element to be enqueued. The opcodes 2 and 3 are not followed by any number.

## Output

The output is as follows:

For the Dequeue operation output the element that has been dequeued. If the queue is empty and a dequeue operation is asked, print "Empty" (without quotes).

For the Is\_Empty operation output True/False.

For the Enqueue operation, print the element enqueued.

## Constraints

$1 \leq t \leq 10$

$1 \leq q \leq 1000000$

$1 \leq x \leq 10^9$

## Example

**Input:**

```
1
7
1 3
1 4
2
```

3  
2  
2  
3

**Output:**

3  
4  
3  
False  
4  
Empty  
True

## Explanation

The first line of the input says that there is only 1 test case.

The second line says there will be 7 queries.

The third line is 1 3 which means that we must enqueue 3 to the queue; the output is 3. Fourth line says that we enqueue 4 to the queue; the output is 4.

The fifth line asks for a dequeue operation and the output should be 3. The sixth line asks whether the queue is empty or not and the answer is False.