淡江大學電機工程學系 106 學年度韌體實驗題目

18. 【團體佇列/Queue】

　　有 t（$1 \leq t \leq 1000$）個團隊的人正在排一個長隊。每次新來一個人時,如果他有隊友在排隊,那麼這個新來的人會插隊到最後一個隊友的身後;如果沒有任何一個隊友排隊,則他會排到長隊的隊尾。

　　輸入每個團隊中所有隊員的編號,要求支援如下 3 種指令(前兩種指令可以穿插進行)。

◆　ENQUEUE x:編號為 x 的人進入長隊。

◆　DEQUEUE:排在長隊首的人離開長隊。

◆　STOP:停止模擬。

對於每個 DEQUEUE 指令,輸出離開長隊的人的編號。

輸入(註 1):
```
2
3 101 102 103
3 201 202 203
ENQUEUE 101
ENQUEUE 201
ENQUEUE 102
ENQUEUE 202
ENQUEUE 103
ENQUEUE 203
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
STOP
2
5 259001 259002 259003 259004 259005
6 260001 260002 260003 260004 260005 260006
ENQUEUE 259001
ENQUEUE 260001
ENQUEUE 259002
ENQUEUE 259003
ENQUEUE 259004
ENQUEUE 259005
DEQUEUE
```

DEQUEUE
ENQUEUE 260002
ENQUEUE 260003
DEQUEUE
DEQUEUE
DEQUEUE
DEQUEUE
STOP
0

輸出（註 2）:
Scenario #1
101
102
103
201
202
203

Scenario #2
259001
259002
259003
259004
259005
260001

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Input

The input file will contain one or more test cases. Each test case begins with the number of teams t $(1 \leq t \leq 1000)$. Then t team descriptions follow, each one consisting of the number of elements belonging to the team and the elements themselves. Elements are integers in the range 0..999999. A team may consist of up to 1000 elements.

Finally, a list of commands follows. There are three different kinds of commands:

- ENQUEUE x — enter element x into the team queue

- DEQUEUE — process the first element and remove it from the queue

- STOP — end of test case

The input will be terminated by a value of 0 for t.

Warning: A test case may contain up to 200000 (two hundred thousand) commands, so the implementation of the team queue should be efficient: both enqueing and dequeuing of an element should only take constant time.

Output

For each test case, first print a line saying 'Scenario #k', where k is the number of the test case. Then, for each 'DEQUEUE' command, print the element which is dequeued on a single line. Print a blank line after each test case, even after the last one.