

Problem Statement

There are N tweets on the page and each tweet can be opened by clicking on it, to see some statistics related to that tweet. Initially all the tweets are closed. Clicking on an open tweet closes it and clicking on a closed tweet opens it. There is also a button to close all the open tweets. Given a sequence of K clicks by Jack, Evan has to guess the total number of open tweets just after each click. Please help Evan in this game.

The first line contains two integers N K , the number of tweets (numbered 1 to N) and the number of clicks respectively ($1 \leq N, K \leq 1000$). Each of the following K lines has one of the following.

Input

- CLICK X , where X is the tweet number ($1 \leq X \leq N$)
- CLOSEALL

Output

Output K lines, where the i th line should contain the number of open tweets just after the i th click.

Example

Input:

```
3 6
CLICK 1
CLICK 2
CLICK 3
```

CLICK 2
CLOSEALL
CLICK 1

Output:

1
2
3
2
0
1