CTSC '15 P5 - Calendar Management

Time limit: 2.5s **Memory limit:** 256M

Problem Description

There are T days and multiple tasks on a calendar, each task has two attributes, a deadline t_i, and a profit p_i, meaning the task has to be completed by day t_i to earn a profit of p_i. Each task only takes one day to complete, the calendar needs to support the following two operations.

1. ADD t p: Add a task with deadline t and profit p
2. DEL t p: Delete the task with deadline t and profit p, if multiple exists, delete any one of those. The data gurantees at least one exists.

After every operation, output the maximum profit after T days.

Input Specifications

The first line are two integers T, Q, denoting the number of days on the calendar, and the number of operations

Output Specifications

Q lines, each line containing the maximum profit after T day after each operation.

Sample Input

```
5 10
ADD 1 5811
ADD 3 5032
DEL 3 5032
ADD 3 5550
ADD 5 3486
DEL 1 5811
DEL 3 5550
ADD 4 5116
ADD 3 9563
ADD 5 94
```

Sample Output

```
5811
10843
5811
11361
14847
9036
3486
8602
18165
18259
```

Data

$T, Q \leq 3 * 10^5$