Entrepreneurship

This question is graded for 1%.

Problem Statement:

Tom decides to start up a pizza restaurant in his neighbourhood together with his mum Mrs Pellegrine, noticing a paucity of competitors in the industry. To facilitate planning, Tom only accepts orders one day in advance. Orders are written down in batches to make the cooking process more convenient as pizzas are often baked in batches.

However, Tom faces a few problems. With soaring raw material costs and import constraints, the number of pizzas he can make a day is limited. Moreover, Mrs Pellegrine has grievances against quite a few people in the neighbourhood. Mrs Pellegrine is unwilling to make pizzas for those people, but she does not want to make it obvious. Hence, if any order within a batch is from a person she has grudges against, she will cancel the entire batch. Mrs Pellegrine only checks on the orders from time to time, and hence it is possible for Mrs Pellegrine to cancel more than one batch of orders at a time. Mrs Pellegrine only cancels batches that were most recently added.

After all the orders for the next working day are in, Tom wants to count the amount of money they will earn the next day (barring any contingencies). All the information about the next day's orders is written in a logbook by Mrs Pellegrine. Note that orders must be processed in the order they were given, and that if there are insufficient pizzas left to fulfil a particular order, the entire order will not be processed. Tom would like to seek some help for this task. Would you be able to help him?

Input:

The first line of the input consists of two space separated integers N (1 <= N <= 10000) and M (0 <= M <= 2^{31} - 1). N refers to the number of commands on the order sheet, and M refers to the maximum number of pizzas he can sell. inputs

Commands on the order sheet can be of the form ADD <Q> <D>, where Q (1 <= Q <= 100) is the number of orders in the batch, and D is the direction to read the orders in. D can be either "L" or "R". If D is "L", the first order for the batch is on the left, and the last order is on the right. If D is "R", the first order for the batch is on the right, and the last order is on the left. The command will be followed by a line of 2Q space separated numbers indicating the number of pizzas, P (1 <= P <= 2^{31} – 1), and the average pizza price, A (0.0 < A < 100.0) for each order in the sequence that the orders were placed. Note that even if D is "R", P and A are still read in from left to right. A will have a maximum of one decimal place.

Commands can also be of the form CANCEL <B>, where B is the number of recently added batches to cancel. It is guaranteed that Mrs Pellegrine will not cancel more batches than what is available. Batches can be cancelled even if there are no orders fulfilled within the batch.

Output:

Display the total revenue the pizza restaurant will earn from the next day's orders **rounding** to 1 decimal place.

Sample Input 1:

```
4 10
ADD 4 L
1 10 2 8.5 3 12.3 2 7.7
ADD 2 R
10 8 40 5
CANCEL 1
ADD 3 L
5 5.5 2 20 1 45
```

Sample Output 1:

```
119.3
```

Sample Input 2:

```
4 10
ADD 4 L
1 10 2 8.5 3 12.3 2 7.7
ADD 2 R
10 8 40 5
CANCEL 1
ADD 3 R
5 5.5 2 20 1 45
```

Sample Output 2:

```
124.3
```

Extension:

If the list of people that Mrs Pellegrine has grudges against and the people placing each order are provided, how can you check whether a batch of orders should be cancelled?