

B. USB vs. PS/2

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Due to the increase in the number of students of Berland State University it was decided to equip a new computer room. You were given the task of buying mice, and you have to spend as little as possible. After all, the country is in crisis!

The computers bought for the room were different. Some of them had only USB ports, some — only PS/2 ports, and some had both options.

You have found a price list of a certain computer shop. In it, for m mice it is specified the cost and the type of the port that is required to plug the mouse in (USB or PS/2). Each mouse from the list can be bought at most once.

You want to buy some set of mice from the given price list in such a way so that you maximize the number of computers equipped with mice (it is not guaranteed that you will be able to equip all of the computers), and in case of equality of this value you want to minimize the total cost of mice you will buy.

Input

The first line contains three integers a , b and c ($0 \leq a, b, c \leq 10^5$) — the number of computers that only have USB ports, the number of computers, that only have PS/2 ports, and the number of computers, that have both options, respectively.

The next line contains one integer m ($0 \leq m \leq 3 \cdot 10^5$) — the number of mice in the price list.

The next m lines each describe another mouse. The i -th line contains first integer val_i ($1 \leq val_i \leq 10^9$) — the cost of the i -th mouse, then the type of port (USB or PS/2) that is required to plug the mouse in.

Output

Output two integers separated by space — the number of equipped computers and the total cost of the mice you will buy.

Example

input
2 1 1 4 5 USB 6 PS/2 3 PS/2 7 PS/2
output
3 14

Note

In the first example you can buy the first three mice. This way you will equip one of the computers that has only a USB port with a USB mouse, and the two PS/2 mice you will plug into the computer with PS/2 port and the computer with both ports.