Lion Territory

Time limit: *1000 ms*
Memory limit: *128 MB*

In your last trip to Africa, you had the luck to encounter k lions. The savanna can be encoded as an $n \times m$ ($1 \leq n, m \leq 10^3$) matrix, and the i^{th} lion was located at cell (r_i, c_i).

The (claimed) territory of the i^{th} lion spans over all the cells at Manhattan distance at most d_i from its location. It is possible that territories overlap.

Your task it to identify the lion that is located on most of other lions' territories.

Standard input

The first line contains three integers n, m and k.

The next k lines contain r_i, c_i and d_i, representing the row, column and distance for the i^{th} lion.

Standard output

Print two integers representing the smallest index of the lion that is situated on most of other lion' territories and the number of territories.

Constraints and notes

- $1 \leq n, m \leq 10^3$
- $1 \leq k \leq n * m$
- $1 \leq r_i \leq n$
- $1 \leq c_i \leq m$
- $0 \leq d_i \leq 10^3$
- It is possible that 2 or more lions are located in the same cell

Input	Output	Explanation
5 4 4 2 1 3 3 1 2 3 4 2 2 4 2	4 2	Lion 4 is situated on the territory of lions 1 and 3.