NAOI TST - Day 1
Problem 3 : Rectangles

Given N rectangles on a plane, where the rectangle sides are parallel to the coordinate axes, determine a point B such that the segment AB crosses the maximum number of rectangles.

Constraints

- The rectangles may overlap, coincide, or be drawn inside one another.
- Each rectangle has integer coordinates (x_{bl}, y_{bl}) for the bottom-left corner and (x_{tr}, y_{tr}) for the top-right corner.
- The maximum values for coordinates are given by x_{max} and y_{max} with $0 < x_{max}, y_{max} \leq 10^9$.
- A segment starts at $A(0, 0)$ and ends at $B(x_B, y_B)$ where:
  - B has integer coordinates.
  - B belongs to either the segment $[(0, y_{max}), (x_{max}, y_{max})]$ or the segment $[(x_{max}, 0), (x_{max}, y_{max})]$.
- A rectangle is considered crossed if at least one of its sides or vertices is crossed by segment AB.

Task

Write a program that determines a point B such that the segment AB crosses the maximum number of rectangles.

Input Specification

- The first line contains three integers: x_{max}, y_{max}, N.
- The next N lines each contain four integers: $x_{bl}, y_{bl}, x_{tr}, y_{tr}$.

Output Specification

- One line with three integers: the maximum number of crossed rectangles, followed by the coordinates x_B, y_B.
- If multiple solutions exist, any one of them can be printed.

Sample Input

```
Input (rect.in):
22 14 8
1 8 7 11
18 10 20 12
17 1 19 7
12 2 16 3
16 7 19 10
8 4 12 11
7 4 9 6
10 5 11 6
```

Sample Output

```
5 22 12
```

Remark: Another possible solution is 5 22 11.