E. Max and Min

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

Two kittens, Max and Min, play with a pair of non-negative integers x and y. As you can guess from their names, kitten Max loves to maximize and kitten Min loves to minimize. As part of this game Min wants to make sure that both numbers, x and y became negative at the same time, and kitten Max tries to prevent him from doing so.

Each kitten has a set of pairs of integers available to it. Kitten Max has n pairs of non-negative integers (a_i, b_i) $(1 \le i \le n)$, and kitten Min has m pairs of non-negative integers (c_j, d_j) $(1 \le j \le m)$. As kitten Max makes a move, it can take any available pair (a_i, b_i) and add a_i to x and b_i to y, and kitten Min can take any available pair (c_j, d_j) and subtract c_j from x and d_j from y. Each kitten can use each pair multiple times during distinct moves.

Max moves first. Kitten Min is winning if at some moment both numbers a, b are negative **simultaneously**. Otherwise, the winner of the game is kitten Max. Determine which kitten wins if both of them play optimally.

Input

The first line contains two integers, n and m $(1 \le n, m \le 100\,000)$ — the number of pairs of numbers available to Max and Min, correspondingly.

The second line contains two integers x, y $(1 \le x, y \le 10^9)$ — the initial values of numbers with which the kittens are playing.

Next n lines contain the pairs of numbers a_i, b_i $(1 \le a_i, b_i \le 10^9)$ — the pairs available to Max.

The last m lines contain pairs of numbers c_j, d_j $(1 \le c_j, d_j \le 10^9)$ — the pairs available to Min.

Output

Print «`Max`» (without the quotes), if kitten Max wins, or "`Min`" (without the quotes), if kitten Min wins.

Examples

input
2 2 42 43 2 3 3 2 3 10 10 3
output
Min

input
1 1 1 1 3 4 1 1
output
Max

Note

In the first test from the statement Min can respond to move $(2, 3)$ by move $(3, 10)$, and to move $(3, 2)$ by move $(10, 3)$. Thus, for each pair of Max and Min's moves the values of both numbers x and y will strictly decrease, ergo, Min will win sooner or later.

In the second sample test after each pair of Max and Min's moves both numbers x and y only increase, thus none of them will become negative.