

# Black and white

Given are **B** black and **W** white points in the plane. Your task is to find whether these two sets can be separated by a straight line. In other words: is it possible to divide the plane into two halfplanes, one containing only black points and the other one containing only white ones? The separating line is not allowed to pass through any of the given points.

## Input

The first line of the input contains two integers **B** and **W** ( $1 \leq B, W \leq 50,000$ ).

Each of the next **B** lines contains the coordinates of one black point. Finally each of the last **W** lines contains the coordinates of one white point.

All coordinates are integers not exceeding  $10^9$  in their absolute value and no two points are equal.

## Output

Output a single line with the string "Yes" if at least one separating line exists and "No" otherwise.

## Example

input	output
4 3 -1 0 1 0 0 1 0 -3 0 0 1 1 2 2	No