

Construction Company

Input file: *standard input*
Output file: *standard output*
Time limit: 12 seconds
Memory limit: 1024 mebibytes

The New Year holidays are over, and your construction company is getting back to work. Unfortunately, some employees are still celebrating...

Today, a sober and b drunk workers came to work for you. Each worker will be available for the whole day. Your company also received m orders for today. Each order is specified by the start and the end of the time span to perform it: $[st, fn]$. Such an order requires a single worker to work on it from moment st to moment fn , inclusive. A worker can complete multiple orders if their time spans do not intersect. Additionally, each order has one of the two types: a simple order can be completed by any worker, while a complex order requires a sober worker.

Will your company be able to handle today's orders?

Input

The first line contains an integer t , the number of test cases ($1 \leq t \leq 2000$). For each test case:

The first line contains three integers: a , b , and m ($0 \leq a, b, m \leq 10\,000$).

Then m lines follow. Each line contains three integers, $type$, st , and fn , describing a simple (if $type = 1$) or complex ($type = 2$) order with the time span $[st, fn]$ ($type \in \{1, 2\}$; $1 \leq st \leq fn \leq 2 \cdot m$). For example, a line `1 2 4` describes a simple order which requires three moments, from second to fourth, both ends included.

The sum of m over all test cases is at most 10 000.

Output

For each test case, print a single line with the answer: "Yes" or "No" (case-insensitive).

Example

<i>standard input</i>	<i>standard output</i>
1 1 1 2 1 1 2 2 2 4	Yes