7027 Picking Da Vinci's successor

Da Vinci is about to retire from the post of Prime Minister of the French King in a month. It is going to be very difficult for the King to find his replacement. The King is worried about the junior ministers as to how they will work without a leader.

To instill in some values of team work among them, the King has asked all the N junior ministers to paint M walls together. The King feels that such a hands-on activity is a very good way to make the junior ministers come together and work as a team. The ministers are allowed to divide a wall into parts such that each part is painted by a different minister. No two ministers are allowed to paint the same wall at the same time.

It can be assumed that all the ministers paint the wall at the same rate. As this is just a training exercise, ministers may have other important jobs as well and they may not be free all the time to do the painting work. S is the start time and E is the end time between which a minister is free to paint the walls. Also, we know that for a minister, painting is a mundane job. It may happen that a minister gets bored while painting a wall, leaves it in between and starts painting another wall without wasting any time. The minister may later come back to finish the previous wall or he may ask one of the other ministers who he is friends with to finish painting the wall.

The King is really worried about the future of the kingdom which is going to have these ministers without a leader. He really wants these ministers to make smart decisions and perform well in any situation that they may face. Thus, he has decided to put some extra constraints on the wall painting exercise. The King knows the number of man hours H required for a wall to get painted completely. So, for each wall he has decided a duration with the start time A and the end time D during which the ministers should start and finish painting the wall.

As anxious the King is about testing his ministers, he is also worried that a failure in completing the task may harm their confidence. He wants to know whether his junior ministers would be able to finish the given task and meet the deadlines or not. You need to help the King to find this out.

Input

The first line of the input contains an integer T which is the number of test cases to follow. The first line of each test case consists of two space separated integers N and M. Each of the next N lines contains two space separated integers S and E. Next M lines contain three space separated integers A, D and H each.

Output

For each test case, output a separate line containing '`YES`' (quotes for clarity) if it is possible for the junior ministers to paint each of the walls during the designated time. Output '`NO`' (quotes for clarity) if it is not possible to do so.

Constraints:

- $1 \leq T \leq 510$
- $1 \leq N, M \leq 100$
- $0 \leq S, E, A, D, H \leq 10^7$

Explanation:

The first minister paints the first wall from time 1 - 2. Then he paints the second wall from time 2 - 3. Then he paints the first wall again from time 3 - 5. The second minister paints the second wall from time 3 - 4. Thus both the walls get painted fully.

Sample Input

```
1
2 2
1 5
3 4
1 5 3
2 4 2
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Sample Output

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YES
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