PREPARATION

Lynn's report day is gonna come soon, so she has to read documents to prepare for it. However, she found out that whenever she read a document, she has to read the other documents that are linked to the current document, and so on.

Fortunately, she found a website that lists all the links to documents she will need. However, a problem might appear between 2 documents. That is, if Lynn reads document A depends on document B, but B also depends on A, it will make the task impossible to complete and waste time (because Lynn just wants to read each document only once, and she will stop reading if she meets a document a second time)! There can be more than two documents trapped in this situation.

Given the list of document pairs, the first document's ID will depend on the second one. Help Lynn measure if she can read all the documents or not.

1 Input

- The first line contains an integer T (T = 100) indicating the number of test cases.
- On the first line in each test case, there will be the integers N ($2 \leq N \leq 100$ or $2 \leq N \leq 10^4$) and M ($1 \leq M \leq 300$ or $1 \leq M \leq 3.10^4$), indicating the number of documents and the dependencies. In each of the following M lines, there will be two integers A ($1 \leq A$) and B ($B \leq N$ and $A \neq B$), indicating that document A depends on document B. There might be repeated dependencies!

2 Output

For each case, print YES if Lynn can read all documents and NO otherwise.

3 Example

Input:

```
3
2 1
1 2
2 2
1 2
2 1
4 4
2 3
3 4
4 2
1 3
```

Output:

```
YES
NO
NO
```