

Problem COMCHAIN: Communication Chain

The renovation of the mensa (canteen) in Erlangen was not finished within the deadline and thus is not a shining example for other companies. One reason for the delay probably is bad communication.

To avoid this problem in future projects, we need a guarantee that all the construction workers get the information they need. There will be one worker, namely the foreman, where all the information is accumulated. However, the problem is, that the foreman is not willing to inform every single worker about the current status and tasks. Therefore, all workers build something similar to a communication chain.

For example, there are four workers $A, B, C,$ and D . The foreman is worker A . Then a *good* communication chain is: A distributes information to B , B distributes information to C , B distributes information to D . This communication chain is *good* because every worker gets all the information (sometimes indirect, see C and D). Note: the *chain* does not have to be exactly a chain while B distributes the information to two other workers. A *good* communication chain is defined as a communication chain that eventually distributes the information of the foreman to every worker.

The project manager is the same person, who controlled the renovation of the mensa. Please help him to answer whether his projects have *good* communication chains.

Input

The first line of the input gives the number of projects C ($0 \leq C \leq 100$). The first line of each project description holds the integers N and M : the number of construction workers in the current site ($0 < N \leq 1\,000$) and the number of information distributions ($0 \leq M \leq 100\,000$). Every worker has a unique index in the range $[0, N - 1]$. Each of the following M lines holds two integers a_i and b_i that describe one information distribution. This means that the worker with index a_i distributes information to the worker with index b_i ($0 \leq a_i, b_i < N, a_i \neq b_i$). No information distribution will appear more than once. The foreman is the craftsman with index 0. There will be a blank line after each project.

Output

For each test case, print one line containing the string “good” in case the communication chain is *good* and the string “bad” otherwise.

Sample Input 1

```
4
4 3
0 1
1 2
2 3

4 5
0 3
3 1
1 2
2 3
2 1

5 5
0 3
3 1
1 2
2 3
2 1

3 2
1 0
2 1
```

Sample Output 1

```
good
good
bad
bad
```