**Labeling Balls**

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| **Time Limit:** 1000MS |  | **Memory Limit:** 65536K |
|  |  |  |

**Description**

Windy has *N* balls of distinct weights from 1 unit to *N* units. Now he tries to label them with 1 to *N* in such a way that:

1. No two balls share the same label.
2. The labeling satisfies several constrains like "The ball labeled with *a* is lighter than the one labeled with *b".*

Can you help windy to find a solution?

**Input**

The first line of input is the number of test case. The first line of each test case contains two integers, *N* (1 ≤ *N* ≤ 200) and *M* (0 ≤ *M* ≤ 40,000). The next *M* line each contain two integers *a* and *b*indicating the ball labeled with *a* must be lighter than the one labeled with *b*. (1 ≤ *a, b* ≤ *N*) There is a blank line before each test case.

**Output**

For each test case output on a single line the balls' weights from label 1 to label *N*. If several solutions exist, you should output the one with the smallest weight for label 1, then with the smallest weight for label 2, then with the smallest weight for label 3 and so on... If no solution exists, output -1 instead.

**Sample Input**

5

4 0

4 1

1 1

4 2

1 2

2 1

4 1

2 1

4 1

3 2

**Sample Output**

1 2 3 4

-1

-1

2 1 3 4

1 3 2 4

**Source**

[POJ Founder Monthly Contest – 2008.08.31](http://poj.org/searchproblem?field=source&key=POJ+Founder+Monthly+Contest+%E2%80%93+2008.08.31), windy7926778