Lottery

Ivancho rarely tries his luck but a few of his friends have told him about the new alien lottery. The goal is to guess the permutation of the numbers from 1 to М, where you know a few of each number’s successor. A successor to G is a number that is on the right of G in the permutation. We will call there relations tooltips.

After a few failed tries Ivancho seeks help from you to write a program **lottery** which finds the permutation.

**Input:** On the first row of the input file **lottery.in** is given an integer N – the number of the tooltips. The following N rows contains one tooltip each. A tooltip is represented by two numbers A and B where A stands on the left of B in the permutation.

**Output:** The output file **lottery.out** should contain each number from 1 to М exactly once, forming the right permutation. The numbers should be separated with white spaces.

**Remark:** Each test has exactly one solution matching the rules.

The input data is always valid.

**Limits:**

N <= 1300

М <= 400

**Time limit**: 0.2 sec

**Memory limit**: 256 MB

Preliminary tests: 4

Final tests: 10

**Example test:**

|  |  |
| --- | --- |
| **lottery.in** | **lottery.out** |
| **7**  **2 1**  **2 4**  **2 5**  **1 3**  **1 5**  **3 4**  **4 5** | **2 1 3 4 5** |