Problem A
Project Matching

Input file: *testdata.in*
Time limit: 5 seconds

Problem Description

One department of computer science has ten project teams (no. A1-A10), and ten faculty advisers (no. B1-B10). Each project team contains several students. Each adviser must advise a project team. Each project team needs an adviser. The matching results must be done according to the preferences of the advisers and project teams. The preference and matching rules are described as follow.

- Each project team provides a preference order to the advisers. The preference order of project team contains the identifications of ten advisers. For example, the preference order of A1 may be (5, 2, 9, 4, 10, 8, 3, 6, 7, 1). The adviser B5 is the first priority. Each adviser also provides a preference order to the project teams. The preference order of adviser contains the identifications of project team. For example, the preference order of B5 may be (7, 2, 1, 6, 10, 8, 3, 5, 4, 9). The project team A7 is the first priority.

- The preference order of project team must be considered to match the guidance relationship between project team and adviser at first. For example, if only project team A8 chooses B7 as its first priority adviser, B7 will be the adviser of A8. If there are more than two project teams (e.g. A8 and A9) that choose the same adviser B7 as their first priority, the matching results are made by the preference order of adviser B7. And if 9 is in front of 8 in the preference order of adviser B7, the adviser of project team A9 must be B7.

- If the project team (e.g. A8) choose the first priority adviser that is already matched by another project team, the project team A8 must choose the second priority adviser, and so on.

Input Format

The input file will contain multiple test cases. Each test case contains 20 lines. The first 10 lines are the preference orders of 10 project teams. The second 10 lines are the preference orders of the 10 advisers. The cells of the preference order are separated by one space.

Output Format

For each test case, output the ten matching results in which the project team and the adviser separated by commas. The matching results are sorted by the project teams.

Sample Input

```
5 2 9 4 10 8 3 6 7 1
5 10 8 4 9 3 2 6 1 7
6 2 9 8 10 3 1 7 5 4
10 2 6 8 7 9 3 1 4 5
6 3 9 2 10 8 4 5 7 1
5 2 7 9 8 4 1 6 3 10
10 2 7 4 5 8 3 6 9 1
7 3 9 8 10 2 1 6 5 4
3 2 6 8 7 9 10 1 4 5
6 2 9 8 10 3 4 5 7 1
1 2 7 6 3 8 10 9 4 5
2 7 3 6 10 9 1 5 4 8
8 5 1 9 10 7 3 2 4 6
7 10 3 6 2 8 9 4 5 1
7 2 1 6 10 8 3 5 4 9
5 3 1 4 10 8 2 7 6 9
7 2 1 5 8 10 3 6 9 4
1 2 6 10 7 8 3 9 4 5
6 4 1 10 3 8 7 5 2 9
```

```
2 9 4 5 10 8 1 6 3 7
```

Sample Output

```
A1,B9
A2,B5
A3,B1
A4,B10
A5,B6
A6,B4
A7,B2
A8,B7
A9,B3
A10,B8
```