# Stable Matching

**Input**

The single line contains the integers $n$ $(1 \leq n \leq 1000)$ — the number of men or women. The following 2*n lines contain the preference list of each man and women.

**Output**

Print pairs of the stable matching.

**Examples**

**input**

```
2
A:X>Y
B:X>Y
X:A>B
Y:A>B
```

**output**

```
(A,X)
(B,Y)
```

**input**

```
3
A:X>Y>Z
B:Y>X>Z
C:X>Y>Z
X:B>A>C
Y:A>B>C
Z:A>B>C
```

**output**

```
(A,X)
(B,Y>
(C,Z)
```

**Deadline:**
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