Input

The single line contains the integers n (1 ⩽ n ⩽ 1000) — the number of hospitals or med students.
The following 2*n lines contain the preference list of each hospital and student.

Output

Print pairs of the stable matching.

```
def stable_matching(n, preferences,student_str,hospital_str):
    matches = {}

    # 将每个学生标记为未匹配
    unmatched_students = set(range(n))

    while unmatched_students:
        student = student_str[unmatched_students.pop()]
        student_preferences = preferences[student_str.index(student)]

        for hospital in student_preferences:
            # 如果医院未被匹配，则将学生与医院匹配
            if hospital not in matches:
                matches[hospital] = student
                break
            else:
                # 检查学生与当前医院和已匹配学生的偏好关系
                current_student = matches[hospital]
                hospital_preferences =
preferences[n+hospital_str.index(hospital)]

                if hospital_preferences.index(student) <
hospital_preferences.index(current_student):
                    # 如果当前学生在偏好列表中排名更高，则替换匹配
                    unmatched_students.add(current_student)
                    matches[hospital] = student
                    break
    for ans in matches:
        print('(', matches[ans], ',', ans, ')', sep='')
    return


n = int(input())
```

```python
preferences = []
student_str = []
hospital_str = []


for _ in range(n):
    temp=input()
    student_str.append(temp.split(":")[0])
    preferences.append(temp.split(":")[1].split(">"))
for _ in range(n):
    temp=input()
    hospital_str.append(temp.split(":")[0])
    preferences.append(temp.split(":")[1].split(">"))

stable_matching(n, preferences,student_str,hospital_str)
```

```
/Users/kkkai/PycharmProjects/pythonProject5/venv/bin/python /Users/kkkai/PycharmProjects/pythonProject5/main.py
2
A:X>Y
B:X>Y
X:A>B
Y:A>B
(A,X)
(B,Y)
```

```
/Users/kkkai/PycharmProjects/pythonProject5/venv/bin/python /Users/kkkai/PycharmProjects/pythonProject5/main.py
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
(A,X)
(B,Y)
(C,Z)

进程已结束，退出代码为 0
```