2026/2027 SOUTHERN CALIFORNIA REGIONAL INTERNATIONAL COLLEGIATE PROGRAMMING CONTEST

Problem 8
Gossips

Your classmates love gossiping. Each one of them has their favorite gossip buddy, to whom they tell everything they have heard. The problem is, their buddy will immediately run and tell *their* gossip buddy (who cares that it is all "Top Secret, do not tell *anyone*."). This leads to a risk where you tell your buddy a secret piece of gossip, one that only you know, just to hear it a few days later from someone other than your own gossip buddy. This makes you feel utterly betrayed. Your classmates feel the same way if and when this happens to them.

Knowing your classmates and their gossip buddies, you are to write a program to identify who is at risk of feeling utterly betrayed one day.

The first line of input is the number of classmates as an integer n ($2 \leq n \leq 10^5$). The next n lines describe your classmates. Each line contains two strings consisting of at least one and at most five uppercase English letters (A–Z), separated by a single space. The first string is the name of your classmate, and the second the name of their gossip buddy. You are guaranteed that all the names of your classmates are unique. You are also guaranteed that any person named as a gossip buddy will appear in the input as your classmate (and therefore you know their gossip buddy). No classmate has themselves as a gossip buddy.

Print a line with a number x, the number of classmates at risk of feeling utterly betrayed. Follow that with x lines giving the names of these classmates in alphabetical order.

Sample Input 1

```
4
TOM JERRY
JERRY TOM
ADAM TOM
ANGIE JERRY
```

Output for Sample Input 1

```
0
```

Sample Input 2

```
3
LAURA JACOB
JACOB ANDY
ANDY LAURA
```

Output for Sample Input 2

```
3
ANDY
JACOB
LAURA
```