

## Problem B: Facebook Friends

Marcelo has few friends on Facebook and he is eager to meet more. You are given a list of pairs of names representing pairs of Facebook friends. Your goal is to compute the list of suggestions of people for Marcelo to friend. This list must contain all people that have at least two common friends with Marcelo, but are different from Marcelo and are not yet Marcelo's friends.

### Input Specification

The first line of input contains an integer specifying the number of data sets. Each data set starts with one line containing an integer specifying the number of pairs in this set (at most 500). Each following line of this data set contains one pair of friends. The name of each friend is an arbitrary non-empty string of at most 10 characters, not including space. The list is unordered, might contain duplicates, and any pair of friends may be listed in any order (for example, “John Mary” or “Mary John”).

### Output Specification

For each data set print the number of suggested friends (could be 0) followed by the list of suggested friends in the alphabetic order, one per line.

Sample Input	Output for Sample Input
2 7 Mary John Marcelo Mary Eve Marcelo John Kale Eve Brian Brian Mary John Eve 12 Mary John Marcelo Mary Eve Marcelo John Mary Eve Jack Brian John John Adam Mary Andy Adam Marcelo Andy Adam Adam Brenda Adam Jack Jack Mary	2 Brian John 3 Andy Jack John