8 Regional Amalgamations

As a part of Ash and Pikachu's farewell tour, he wants to have a series of dinner parties with his friend groups from various regions. One can surmise that being a 10-year-old with 25 years of experience gives one quite a large and geographically separated friend circle. To save everyone time and money, he has decided to visit each region and host a party for the friends he made there.

Unfortunately for Ash, being a perpetual 10-year-old has resulted in not enough Brain RAM. While he has a list of friends, he has forgotten who belongs in which friend However, he can use the information about which friend knows which other friend to reconstruct the different region-based friend circles.

A "friend circle" for this problem is defined as a group of friends who, through a series of one-way relationships can trace their acquaintances back to the "first" of the group considered.

Reconstruct the friend circle based on a list of one-way acquaintances. In a one-way acquaintance, the first friend knows the second friend, but you have no information if the second friend knows the first. You need to find out how many dinner parties need to be organized, and who will be at each one.

8.1 Input

The first line of input is 2 integers 'N' and 'M', representing the number of friends and the number of one-way acquaintances respectively. The next 'M' lines represent a one-way acquaintance each, where the first friend knows the second friend. The friend names will be single words and space separated.

8.2 Output

The first line of output is a single number that represents the number of dinner parties. Each following line is a line of people at each party. The lines should be printed in increasing lexicographic order. Each line's friend names should also be printed in increasing lexicographic order, space-separated.

8.3 Sample Input/Output

Input	Output
7 8	3
Brock Misty	Brock Misty Psyduck
Misty Psyduck	Dawn Piplup Quilava
Psyduck Misty	Joy
Brock Dawn	
Dawn Piplup	
Piplup Quilava	
Quilava Dawn	
Brock Joy	