

## B. PFAST Inc.

time limit per test: 2 seconds  
 memory limit per test: 256 megabytes  
 input: standard input  
 output: standard output

When little Petya grew up and entered the university, he started to take part in ACM contests. Later he realized that he doesn't like how the ACM contests are organised: the team could only have three members (and he couldn't take all his friends to the competitions and distribute the tasks between the team members efficiently), so he decided to organize his own contests PFAST Inc. — Petr and Friends Are Solving Tasks Corporation. PFAST Inc. rules allow a team to have unlimited number of members.

To make this format of contests popular he organised his own tournament. To create the team he will prepare for the contest organised by the PFAST Inc. rules, he chose several volunteers (up to 16 people) and decided to compile a team from them. Petya understands perfectly that if a team has two people that don't get on well, then the team will perform poorly. Put together a team with as many players as possible given that all players should get on well with each other.

### Input

The first line contains two integer numbers  $n$  ( $1 \leq n \leq 16$ ) — the number of volunteers, and  $m$  ( $0 \leq m \leq \frac{n \cdot (n-1)}{2}$ ) — the number of pairs that do not get on. Next  $n$  lines contain the volunteers' names (each name is a non-empty string consisting of no more than 10 uppercase and/or lowercase Latin letters). Next  $m$  lines contain two names — the names of the volunteers who do not get on. The names in pair are separated with a single space. Each pair of volunteers who do not get on occurs exactly once. The strings are case-sensitive. All  $n$  names are distinct.

### Output

The first output line should contain the single number  $k$  — the number of people in the sought team. Next  $k$  lines should contain the names of the sought team's participants in the lexicographical order. If there are several variants to solve the problem, print any of them. Petya might not be a member of the sought team.

### Examples

| input   |
|---|
| 3 1<br>Petya<br>Vasya<br>Masha<br>Petya Vasya |
| output  |
| 2<br>Masha<br>Petya                           |

| input                          |
|--------------------------------|
| 3 0<br>Pasha<br>Lesha<br>Vanya |
| output                         |
| 3<br>Lesha<br>Pasha<br>Vanya   |

### → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

### Codeforces Beta Round #86 (Div. 2 Only)

[Finished](#)
[Practice](#)


### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

### → Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

### → Submit?

Language: GNU G++11 5.1.0

Choose file: [Choose File](#) No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.



[Submit](#)

### → Problem tags

[bitmasks](#) [brute force](#)

No tag edit access

[→ Contest materials](#)

- Announcement 
- Tutorial 

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The only programming contests Web 2.0 platform

Server time: Jun/02/2016 07:00:12<sup>UTC+6</sup> (p1).

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