Wedding High Table   X78201_en

We are planning the set-up of the guests for the celebration dinner of the wedding of our beloved friends Gride and Broom. We want to make sure that, at the main table where they will sit, everyone knows everyone else. Also, we want to have as many guests as possible in that main table while obeying that condition. How many guests are we able to accomodate there?

Input

The input tells us who knows whom by listing all acquaintances: first comes a line with a non-negative integer m, then m lines follow, each containing two names and meaning that these two guests know each other. Names are made up of upper- or lower-case letters and are separated by one space. (Gride and Broom do not appear there; there is no need since they know everyone in their wedding.)

Output

The output is the number of guests (not counting the happy pair) that make up the largest possible main table, written in a line, and followed by the names, in string order, of the guests that configure that largest table, one per line.

Observations

1/ The time spent by your solution will be compared to that of a (not particularly smart) backtracking. However, too naïve algorithmics incur a serious risk of not being accepted due to slowness.
2/ Generally speaking, there could be cases where more than one solution would be possible. It is, however, guaranteed that, in all the public and private tests of this problem, the solution is unique.

Sample input 1

```
4
Imar Obrahim
Tahmoud Mamza
Imar Mamza
Imar Tahmoud
```

Sample input 2

```
15
Tammar Urie
Kassan Satma
Kassan Malik
Elivia Galak
Galak Urie
Galak Kassan
Kassan Urie
Kassan Maniel
Jamile Urie
```

Sample output 1

```
3
Imar
Mamza
Tahmoud
```

```
Kassan Tammar
Maniel Satma
Elivia Jamile
Galak Malik
Malik Urie
Elivia Malik
```

Sample output 2

```
4
Galak
```

```
Kassan
Malik
Urie
```

Problem information

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