

The story of our company

Winter Workshops, Day 1, Available memory 512 MB

02.01.2020 - 08.01.2020

Long time ago all the companies were just one person with an idea and no friends. Over time fusions and parties caused them to grow.

During each fusion people from more than one company decided to form one bigger company. This was only possible if no two people among previously different companies knew each other before. The friendship relationships were not affected by the fusion though.

During each party people from one company had fun together. The parties were crazy. Each time a party was held, all the people among the company got to know each other. However, the parties were **really** crazy. People were so frustrated with their colleagues obscene behaviour, that they did not want to be friends anymore with anyone whom they had known before the event. As a result, the friendship relationships within one company toggled.

You are a new employee who is about to join a company of N people where M pairs of people (X_i, Y_i) are friends. You want to have a head start, so you have already established that the i -th person has importance A_i . You'd like to get to know the right people as soon as possible, therefore you'd like to find a most important clique in the company – a group of people such that they are all friends with each other and their total importance is as large as possible.

Constraints

- $1 \leq N \leq 300$
- $1 \leq M \leq \frac{N \cdot (N-1)}{2}$
- $1 \leq X_i, Y_i \leq N$
- $1 \leq A_i \leq 10^6$
- You're guaranteed that the described company is created out of people with visions, fusions and parties.
- According to the process described above, no person could have worked in two different companies simultaneously.
- If there are many optimal solutions, you can output any of them.

Input

```
N M
A1 A2 .. AN
X1 Y1
X2 Y2
:
XM YM
```

Output

The first line of the output should consist of a single integer representing the maximum total importance of a clique.

The second line should consist of a single integer K representing the number of people in the chosen clique.
The third line should consist of K values representing the indices of the chosen people.

Examples

Input	Output
8 8 3 2 3 1 1 3 2 1 1 3 2 3 4 5 4 6 4 7 4 8 5 6 7 8	6 2 1 3
5 6 1 3 5 9 4 1 3 1 5 2 3 2 5 3 5 4 5	13 2 4 5
4 3 7 1 2 3 2 3 2 4 3 4	7 1 1

Scoring

Subtask	Constraints	Points
1	$N \leq 8$	13
2	$N \leq 17$	17
3	$N \leq 100$	30
3	no additional constraints	40