

## 04. Good Omens

Well you know those people who always say they are going to change the world. Yep they are everywhere but this time it is different you are working for one such person. She of course is mad with charity and you have to develop program which helps her maximize the goods distributed to those in need.

The company you work for is of course huge and has many storages for charity giving, which operate inside dangerous areas where goods distribution to those in need is highly risky operation. But no matter what the work is work and it must be done.

There is a war all around those storages so distribution of goods **costs different amount** spent for for protection. You are given a task to find the **minimum path which connects all the storages in such a way that the goods can be distributed in the most efficient way**. Of course you may go from one storage to the other and back **as long as they are connected**.

### Input

The input will come from the console:

- On the first line the number of storages **N**
- On the second line the number of distribution paths between the storages **M**
- On each **M** line the data describing the distribution paths:

**{storage} {storage} {securityExpenses}**

### Output

- On the first line print the storages which are part of the network in the format:

**{[storage <=> storage] [storage <=> storage] ... [storage <=> storage]}**

- On the second line print the **protection cost for the entire region**.

### Constraints

- All input lines will be **valid integers you do not need to check that, however there may be whitespaces**.
- The range of the integers will be in the range **[1...2500]**.
- The storages number will be in the range **[1...2500]**.

### Examples

Input	Output
3 2 1 2 1 2 3 1	[1 <=> 2] [2 <=> 3] 2
9 11 5 3 1 5 4 3	[5 <=> 3] [3 <=> 4] [4 <=> 1] [1 <=> 2] [9 <=> 6] [6 <=> 7] [7 <=> 8] 10

3	4	1
4	1	1
1	2	1
1	3	4
3	2	4
6	7	2
7	8	3
8	9	4
9	6	1

*"The presence of those seeking the truth is infinitely to be preferred to the presence of those who think they've found it."*