All Bridges Are Destroyed

Timelimit: 3 sec

Problem description

Oh, no! Instead of only destroying the bridge at Turmstrasse, all streets have been destroyed and now all places are disconnected. If that was not bad enough, the new term is going to begin soon and the students want to tour all buildings of the RWTH. Luckily, you are a well known city designer and know how much time it costs to build a street between two buildings. Find a way to connect all buildings in minimal time so that the students can enjoy their freshman rally. This means that you should be able to reach any building starting from any other building by using only the streets constructed. The total building time is the sum of the building times of all streets that you decide to build.

Input

The input consists of:

- One line with two integers n ($1 \leq n \leq 10^5$) and m ($1 \leq m \leq 2 \cdot 10^5$) that describe the number of places in Aachen and the number of constructable streets in Aachen.

- m lines follow, each containing three strings v_i, w_i, s_i and an integer t_i ($1 \leq t_i \leq 10^9$), where s_i is the name of the street that connects v_i and w_i, and t_i is the time that it takes to construct street i. All strings consist only of letters and dashes. Their lengths are at most 80.

Output

Output two integers k and t, the number of streets to construct and the total time that it takes to build these streets. This is followed by k lines containing the names of the k streets that need to be build. The street names can be listed in any arbitrary order and if multiple solutions exist you can present any of them.

Sample input/output

Input	Output
5 5	4
Mensa Krankenhaus Melatenerstrasse 20	75
Mensa Informatikzentrum Ahornstrasse 10	Ahornstrasse
Informatikzentrum Westbahnhof Mies-van-der-Rohe-Strasse 25	Melatenerstrasse
Westbahnhof Audimax Seffenter-Weg 20	Seffenter-Weg
Informatikzentrum Audimax Geheimtunnel 37	Mies-van-der-Rohe-Strasse

Here you need to build four streets and their total cost is 75.