Jumbled Journey

Hanoi – the capital city of Vietnam has n intersections, connected by m two-way roads. The intersections are numbered from 1 to n, and the roads are numbered from 1 to m. The i-th road connects intersection u_i and intersection v_i with a length of w_i kilometers. The roads guarantee that it is possible to travel between any two intersections.

Tahp and Mei are competing for a position at a delivery company. To evaluate their abilities, the company has designed a problem: There is a package that needs delivering between n intersections, each intersection receives the package exactly once, and these deliveries are made on different days. Formally, the schedule can be represented as a permutation p of integers from 1 to n, the detailed schedule over the days is as follows:

- On day 1, the package is delivered from intersection p_1 to intersection p_2.
- On day 2, the package is delivered from intersection p_2 to intersection p_3.

  ...
- On day i, the package is delivered from intersection p_i to intersection p_{i+1}.

  ...
- On day $n - 1$, package is delivered from intersection p_{n-1} to intersection p_n.

However, the schedule is not fixed and may be changed during the process. Hence, the risk is difficult to predict. In this problem, Tahp is responsible for choosing the permutation p, determining the order of the deliveries. Mei must then determine the optimal delivery *route* for each day. A *route* from u to v is a sequence of intersections $u = x_0, x_1, \ldots, x_k = v$, where each pair of consecutive intersections (x_i, x_{i+1}) is connected by a road. Tahp's target is to **maximize** the *risk of the schedule*, while Mei's aim is to **minimize** it.

The company evaluates the risk of the schedule using the following criteria:

- The *risk of a road* is its length.
- The *risk of a route* is the **highest risk** of a road along that route.
- The *risk of a schedule* is the **sum of the risk** over all delivery routes on each day.

You are required to find the risk of the schedule and a corresponding delivery schedule which achieves that risk, assuming both Tahp and Mei make optimal choices.

Input

The first line contains a single integer t $(1 \le t \le 5 \cdot 10^5)$ representing the number of test cases. The description of each test case is as follows:

- The first line contains two integers n and m $(2 \le n \le 5 \cdot 10^5; n - 1 \le m \le 5 \cdot 10^5)$ – the number of intersections and the number of roads.
- The j-th line of the next m lines contains three integers u_j, v_j, w_j $(1 \le u_j, v_j \le n; 1 \le w_j \le 10^9)$ describing the j-th road.

It is guaranteed that:

- the sum of n over all test cases does not exceed $5 \cdot 10^5$,
- the sum of m over all test cases does not exceed $5 \cdot 10^5$, and
- it is possible to travel between any two intersections using the given roads.

Output

For each test case, print two lines:

- The first line contains the risk of the schedule.
- The second line contains the permutation $p_1, p_2, \ldots, p_n$ that Tahp has chosen to achieve the above risk.

If there are multiple solutions, print any of them.

Sample Input 1	Sample Output 1
3 4 6 1 2 2 1 3 2 1 4 3 2 3 5 2 4 3 3 4 2 2 1 1 2 3 5 4 1 2 1 2 3 2 3 4 5 4 5 2	6 3 2 4 1 3 2 1 20 2 4 1 5 3