Railroad

Mouse Stofl wants to visit his friend mouse Peter by train and looks for a connection such that he can minimize the number of train changes. He notices that on this day there will be construction work on the whole train network and some trains might be canceled. Mouse Stofl now asks himself for which trains it is the case that, if the train is canceled, he would no longer be able to reach his destination using the same number of train changes (given there is only one canceled train at a given time). Such a train is called an essential train.

Mouse Stofl enters and leaves a train only at the starting or ending train station of a train line. Each train line will travel back to the start once it arrived at its destination and change directions again when it returned to its start.

Input

The first line contains four integers N, M, S, E, the number of train stations N, the number of train lines M, the starting train station S where mouse Stofl lives and the final train station E where his friend Peter lives.

Each of the following M lines contains three integers s_i, e_i, d_i ($1 \leq s_i, e_i \leq N$, $1 \leq d_i \leq 10^9$), separated by a space, the starting station s_i, the final station e_i of the i th train line and the time d_i it takes for the corresponding route.

The train stations are numbered from 1 to N and the train lines are numbered from 1 to M.

Output

The first line contains the number of essential train lines L.

Each of the following L lines contains one integer l_i, the number of the i th essential train line. The output should be sorted, i.e. $l_i < l_j$ for all $i < j$.

Constraints

- for 25 points: $1 \leq N, M \leq 1\,000$
- for 100 points: $1 \leq N, M \leq 10^6$

For all test cases there is at most one train line between any pair of train stations.

Samples

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

There are exactly two routes with only two train changes: $1 \to 2 \to 5 \to 8$ *using train lines* 5, 9 *and* 6, *taking* 12*min, and* $1 \to 2 \to 4 \to 8$ *using train lines* 5, 4, *and* 7, *taking* 17*min. Both of those routes use train line* 5, *therefore* 5 *is essential. If* 4, 6, 7 *or* 9 *were canceled, there would be an alternative route with only two train changes.*

Input	Output
4 3 1 4 1 2 3 2 3 4 3 4 5	3 1 2 3

The only route from 1 *to* 4 *is* $1 \to 2 \to 3 \to 4$, *taking* 12*min. Therefore, all train lines are essential.*