

New labyrinth attraction is open in New Lostland amusement park. The labyrinth consists of  $n$  rooms connected by  $m$  passages. Each passage is colored into some color  $c_i$ . Visitors of the labyrinth are dropped from the helicopter to the room number 1 and their goal is to get to the labyrinth exit located in the room number  $n$ .

Labyrinth owners are planning to run a contest tomorrow. Several runners will be dropped to the room number 1. They will run to the room number  $n$  writing down colors of passages as they run through them. **The contestant with the shortest sequence of colors is the winner of the contest.** If there are several contestants with the same sequence length, the one with the *ideal path* is the winner. **The path is the ideal path if its color sequence is the lexicographically smallest among shortest paths.**

Andrew is preparing for the contest. He took a helicopter tour above New Lostland and made a picture of the labyrinth. Your task is to help him find the ideal path from the room number 1 to the room number  $n$  that would allow him to win the contest.

**Note:** A sequence  $(a_1, a_2, \dots, a_k)$  is lexicographically smaller than a sequence  $(b_1, b_2, \dots, b_k)$  if there exists  $i$  such that  $a_i < b_i$ , and  $a_j = b_j$  for all  $j < i$ .

## Input

The input file contains several test cases, each of them as described below.

The first line of the input file contains integers  $n$  and  $m$  — the number of rooms and passages, respectively ( $2 \leq n \leq 100000, 1 \leq m \leq 200000$ ). The following  $m$  lines describe passages, each passage is described with three integer numbers:  $a_i, b_i$ , and  $c_i$  — the numbers of rooms it connects and its color ( $1 \leq a_i, b_i \leq n, 1 \leq c_i \leq 10^9$ ). Each passage can be passed in either direction. Two rooms can be connected with more than one passage, there can be a passage from a room to itself. It is guaranteed that it is possible to reach the room number  $n$  from the room number 1.

## Output

For each test case, the output must follow the description below.

The first line of the output file must contain  $k$  — the length of the shortest path from the room number 1 to the room number  $n$ . The second line must contain  $k$  numbers — the colors of passages in the order they must be passed in the ideal path.

## Sample Input

```
4 6
1 2 1
1 3 2
3 4 3
2 3 1
2 4 4
3 1 1
```

## Sample Output

```
2
1 3
```