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ITMO Academy: pilot course » Binary Search » Step 4 » Practice

→ **Submit?**

Language: GNU G++20 13.2 (64 bit, win ⌄)

Choose file: [Choose File] No file chosen

[Submit]

B. Minimum Average Path

time limit per test: 2 seconds❓
memory limit per test: 512 megabytes
input: standard input
output: standard output

The road network consists of n junctions and m one-way roads, with each road leading from a lower-numbered junction to a higher-numbered junction. Each road has a number. Your task is to find a path from junction 1 to junction n at which the arithmetic mean of the numbers corresponding to the edges is minimal possible.

Input

The first line contains integers n and m ($2 \le n \le 10^5, 1 \le m \le 10^5$). The next m lines contain triples of numbers a_i, b_i, c_i ($1 \le a_i < b_i \le n, 0 \le c_i \le 100$), which means that there is a road leading from the junction a_i to the junction b_i, which corresponds to the number c_i. For each pair of junction, there is at most one road that connects them. It is guaranteed that there is a path from junction 1 to junction n.

Output

On the first line print the number of edges in the selected path k. On the next line print $k + 1$ integers, indices of junctions visited by the selected path.

Examples

input	Copy
4 3
1 2 1
2 3 0
2 4 1	

output	Copy
2
1 2 4	

input	Copy
3 3
1 2 1
2 3 2
1 3 1	

output	Copy
1
1 3	