Problem L. Floyd-Warshall

Input file:	*standard input*
Output file:	*standard output*
Time limit:	5 seconds
Memory limit:	256 mebibytes

Radewoosh has n-vertex directed weighted graph. He needs to determine distances between all pairs of vertices. He decided to use Floyd-Warshall's algorithm for that.
Correct implementation of Floyd-Warshall's algorithm.

1: M – $n \times n$ matrix. Initially:

$$M_{i,j} = \begin{cases} 0, & \text{if } i = j \\ w_{i,j}, & \text{if there exists an edge from } i \text{ to } j \text{ with weight } w_{i,j} \\ \infty & \text{otherwise} \end{cases}$$

2: **for** $x = 1, 2, 3, \ldots, n$ **do**
3: **for** $y = 1, 2, 3, \ldots, n$ **do**
4: **for** $z = 1, 2, 3, \ldots, n$ **do**
5: $M_{y,z} \leftarrow \min(M_{y,z}, M_{y,x} + M_{x,z})$

Unfortunately Radewoosh messed up loops order and his algorithm became incorrect!

Incorrect implementation of Floyd-Warshall's algorithm.
M – $n \times n$ matrix defined as above.
for $y = 1, 2, 3, \ldots, n$ **do**
for $z = 1, 2, 3, \ldots, n$ **do**
for $x = 1, 2, 3, \ldots, n$ **do**
$M_{y,z} \leftarrow \min(M_{y,z}, M_{y,x} + M_{x,z})$

How many distances determined by Radewoosh's algorithm will be incorrect?

Input

The first line of input contains two integers n and m ($2 \le n \le 2\,000$, $1 \le m \le 3\,000$) denoting number of vertices and number of edges in our graph, respectively. Each of the following m lines contains three integers u_i, v_i, w_i ($1 \le u_i, v_i \le n$, $u_i \ne v_i$, $1 \le w_i \le 100\,000$) denoting that i-th edge goes from vertex u_i to vertex v_i and has weight w_i. No ordered pair (u_i, v_i) will be given more than once.

Output

Output should contain one number — number of ordered pairs of vertices which have its distance computed incorrectly by Radewoosh's algorithm.

Example

standard input	standard output
4 5 2 3 4 3 4 3 4 2 2 1 3 1 1 2 9	1

Explanation of sample test: Here we depict the following: initial matrix M, matrix generated by correct algorithm and matrix generated by Radewoosh's implementation. Incorrect version made one mistake — $M_{1,2}$.

i\j	1	2	3	4
1	0	9	1	∞
2	∞	0	4	∞
3	∞	∞	0	3
4	∞	2	∞	0

i\j	1	2	3	4
1	0	6	1	4
2	∞	0	4	7
3	∞	5	0	3
4	∞	2	6	0

i\j	1	2	3	4
1	0	9	1	4
2	∞	0	4	7
3	∞	5	0	3
4	∞	2	6	0