Copy Paste 3???

time limit per test: 2 seconds (5 seconds for Python)
memory limit per test: 500 megabytes
input: standard input
output: standard output

points: 100 · problem code: spa1

You are given a directed graph with n nodes and m edges. What is the shortest-path distance from node 1 to every other node?

Input

The first line contains the integers n and m.

The following m lines contain integers a, b, and c indicating a directed edge from node a to node b with weight c. There may be multiple edges between the same pair of nodes.

The nodes are numbered 1 through n.

It is guaranteed that there is a path from 1 to every other node and that there are no negative cycles.

Output

Print one line with $n-1$ integers: the shortest-path distances to nodes 2, 3, ..., n, in that order, separated by spaces.

Constraints

- $2 \leq n \leq 1000$
- $1 \leq m \leq 5000$
- $1 \leq a, b \leq n$
- $-10^9 \leq c \leq 10^9$

Example 1

Input

```
3 3
1 2 2
1 3 1
3 2 -1
```

Output

```
0 1
```

Explanation

The shortest path to node 3 is the direct edge of weight 1. The shortest path to node 2 is $1 \to 3 \to 2$ with total weight 0.

Example 2

Input

```
10 15
1 2 7
2 3 7
3 4 4
4 5 6
5 6 3
6 7 8
7 8 9
8 9 8
9 10 5
10 1 1
8 10 3
4 6 1
6 9 2
4 5 3
6 10 3
```

Output

```
7 14 18 21 19 27 36 21 22
```