## Shortest Path - Problem Y

There are n vertices and m edges between them. Determine the shortest path from the first vertex to all other vertices.

### Input

The first input line has two integers n and m the number of vertices and edges. The vertices are numbered 1, ..., n. After the first line, there are m lines describing the edges. Each line has three integers, a, b, and c. Representing an undirected edge between vertices a and b of weight c. You can assume that it is possible to travel from vertex 1 to all other vertices, note that the edges are undirected and all weights are integers.

### Output

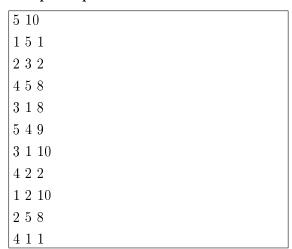
Print n integers: the shortest routes from vertex 1 to vertices 1, 2, ..., n, with each integer followed by a whitespace.

#### Constraints

```
\begin{aligned} &1 \leq n \leq 10^5 \\ &1 \leq m \leq 2 \cdot 10^5 \\ &1 \leq a,b \leq n \end{aligned}
```

 $1 \le c \le 10^9$ 

# Example Sample Input



#### Sample Output

0 3 5 1 1