Shortest Path I

Difficulty	1 sec Time Limit	256000KB Memory	100 Score

80/80 XP   ⚠ 30/30

Description

There are n cities and m roads. The capital is located at 1. Your task is to determine the length of the shortest route from the capital to every city.

Input Format

The first input line has two integers n and m: the number of cities and road connections. The cities are numbered 1, 2, ..., n, and city 1 is Capital.

After that, there are m lines describing the roads. Each line has three integers a, b and c: a road begins at city a, ends at city b, and its length is c. Each road is a one-way road.

You can assume that it is possible to travel from Capital to all other cities.

Output Format

Print n integers: the shortest route lengths from Capital to cities 1, 2, ..., n.

Constraints

$1 \le n \le 10^5$

$1 \le m \le 2 \times 10^5$

$1 \le a, b \le n$

$1 \le c \le 10^9$

Sample Input 1

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

C++14   00:00:00   12 px

```cpp
13      for(int i=1;i<=n;i++){
14          dis[i]=1e18;
15          vis[i]=0;
16      }
17      dis[1]=0;
18      priority_queue<pp>pq;
19      pq.push(MP(-0,1));
20      while(!pq.empty()){
21          pp v=pq.top();
22          //v=dis,node
23          pq.pop();
24          if(vis[v.second]==1){
25              continue;
26          }
27          vis[v.second]=1;
28          for(auto i:g[v.second]){
29              lli weight=i.second;
30              lli neigh=i.first;
31              if(dis[neigh]>dis[v.second]+weight){
32                  dis[neigh]=dis[v.second]+weight;
33                  pq.push(MP(-dis[neigh],neigh));
34              }
35          }
```

Sample Tests   Manual Tests

Test Case 1 ✓

✓ ACCEPTED

Input

```
3 4
```

Console   Run on Sample