Jack goes to Rapture

locked

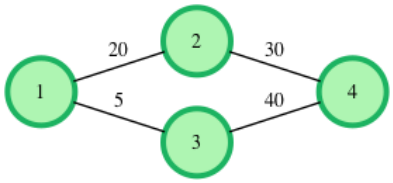
Jack has just moved to a new city called Rapture. He wants to use the public public transport system. The fare rules are as follows:

1. Each pair of connected stations has a fare assigned to it regardless of direction of travel.
2. If Jack travels from station A to station B, he only has to pay the difference between (the fare from A to B) and (the cumulative fare paid to reach station A), [*fare(A,B) - total fare to reach station A*]. If the difference is negative, travel is free of cost from A to B.

Jack is low on cash and needs your help to figure out the most cost efficient way to go from the first station to the last station. Given the number of stations g_nodes (numbered from 1 to g_nodes), and the fares (weights) between the g_edges pairs of stations that are connected, determine the lowest fare from station 1 to station g_nodes.

Example
$g\_nodes = 4$
$g\_from = [1, 1, 2, 3]$
$g\_to = [2, 3, 4, 4]$
$g\_weight = [20, 5, 30, 40]$

The graph looks like this:



Travel from station $1 \rightarrow 2 \rightarrow 4$ costs 20 for the first segment ($1 \rightarrow 2$) then the cost differential, an additional $30 - 20 = 10$ for the remainder. The total cost is 30.

Travel from station $1 \rightarrow 3 \rightarrow 4$ costs 5 for the first segment, then an additional $40 - 5 = 35$ for the remainder, a total cost of 40.

The lower priced option costs 30.

Function Description
Complete the *getCost* function in the editor below.

getCost has the following parameters:

- *int g_nodes:* the number of stations in the network
- *int g_from[g_edges]:* end stations of a bidirectional connection
- *int g_to[g_edges]:* $g\_from[i]$ is connected to $g\_to[i]$ at cost $g\_weight[i]$
- *int g_weight[g_edges]:* the cost of travel between associated stations

Prints
- *int or string:* the cost of the lowest priced route from station 1 to station g_nodes or `NO PATH EXISTS`. No return value is expected.

Input Format

The first line contains two space-separated integers, g_nodes and g_edges, the number of stations and the number of connections between them.
Each of the next g_edges lines contains three space-separated integers, g_from, g_to and g_weight, the connected stations and the fare between them.

Constraints

- $1 \leq g\_nodes \leq 50000$
- $1 \leq g\_edges \leq 500000$
- $1 \leq g\_weight[i] \leq 10^7$