3 Questions Total Marks: 300.0

3 Programming Questions

1. Perpendicular Lines + 100.0

2. Black and White + 100.0

3. A Game on Array + 100.0

Question 2 Max. Marks 100.00

Black and White

You are given a graph G consisting of N nodes and M edges. Each node of G is either colored in black or white. Also, each edge of G has a particular wieight. Now, you need to find the least expensive path between node 1 and node N, such that difference of the number of **black** nodes and **white** nodes on the path is no more than 1.

It is guaranteed G does not consist of multiple edges and self loops.

Input Format:

The first line contains two space separated integers N and M. Each of the next M lines contains 3 space separated integers u, v, l which denotes that there is an edge from node u to node v having a weight l. The next line contains N space separated integers where each integer is either 0 or 1. If the i^{th} integer is 0 it denotes that i^{th} node is black , otherwise it is white.

Constraints

$1 \leq N \leq 1000$

$1 \leq M \leq 10000$

$1 \leq l \leq 1000$

$1 \leq u, v \leq N, u \neq v$

Output Format

Output a single integer denoting the length of the optimal path fulfilling the requirements. Print -1 if there is no such path.

Sample Input	Sample Output
6 6 1 2 1 2 3 1	7