
Weighted shortest path (2)

P13994_en

Write a program that, given a directed graph with positive costs at the arcs, and two vertices x and y , prints the path of minimum cost that goes from x to y .

Input

Input consists of several cases. Every case begins with the number of vertices n and the number of arcs m . Follow m triples u, v, c , indicating that there is an arc $u \rightarrow v$ of cost c , where $u \neq v$ and $1 \leq c \leq 1000$. Finally, we have x and y . Assume $1 \leq n \leq 10^4$, $0 \leq m \leq 5n$, and that for every pair of vertices u and v there is at most one arc of the kind $u \rightarrow v$. All numbers are integers. Vertices are numbered from 0 to $n - 1$. If y is reachable from x , you have the guarantee that there is a unique path.

Output

For every case, print the path of minimum cost that goes from x to y . If there is no path from x to y , state so.

Sample input

```
6 10
1 0 6
1 5 15
3 4 3
3 1 8
4 0 20
0 5 5
0 2 1
5 1 10
4 1 2
2 3 4
3 5

2 1
0 1 1000
1 0

3 3
0 2 100
0 1 40
1 2 70
0 2
```

Sample output

```
3 4 1 0 5
no path from 1 to 0
0 2
```

Problem information

Author : Salvador Roura

Generation : 2013-09-02 15:48:37

© Jutge.org, 2006–2013.

<http://www.jutge.org>