**Algorithms Advanced with C#: Exam**

**1. Trains Part Two**

Dick Simnel has promised you a huge promotion if you can solve that next problem.

You need to come up with a solution for the shortest spare parts distribution system. You have the map with the train depots on it all you need to do is find the shortest way to deliver part from the depot in which they have it, to the depot that requires it.

## Input

* The input will come from the console on several lines:
  + The **first line** holds an integer **n** – the number of depots
  + On the **second line**, you will receive the number **m** – the number of train tracks between all the depots
  + On the **third** **line** the depot that has the part and the one that needs the part **{start} {end}**
  + At the next **m** **lines**, you will receive the network in the format: **{a} {b} {distance}**

## Output

* On the first line print the shortest way to deliver the part.
* On the second line print the total distance of the way.

## Constraints

* Number of depots will be an integer in the range [**0**…**10000**]
* Number of train tracks will be an integer in the range [**0…10000**]
* The distance is always an integer [**0…10000**]
* All depots will be numbered from **0** to **N - 1**.
* You can consider that if there is a train track between two depots you can travel in both directions

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 6  6  0 4  0 1 13  1 2 12  2 4 1  2 3 43  4 5 21  5 0 1 | 0 5 4  22 |
| 8  9  4 0  0 1 1  0 7 2  7 6 3  6 5 3  5 0 4  1 2 5  2 3 5  2 4 6  4 5 7 | 4 5 0  11 |

“It was like ... like wizardry, but without the wizards and the mess.”  
― **Terry Pratchett,**[**Raising Steam**](https://www.goodreads.com/work/quotes/16202400)