**Algorithms with Java: Exam 01-08-2020**

This document defines the exam for ["Algorithms – Advanced (Java)" course @ Software University](https://softuni.bg/trainings/2992/algorithms-advanced-with-java-june-2020). Please submit your solutions (source code) of all below described problems in [Judge](https://judge.softuni.bg/Contests/2524/Algorithms-Advanced-with-Java-Exam-01-August-2020).

1. **Food Programme**

You have a new job as a planner for the Food Programme.

Your task is to plan the new food delivery **from a given logistic center to those in need**. The only requirement is to **find** the **fastest** **way** **possible**. The road network will be represented as **zones** **(**numbers from **0…n-1)** and the time for **travelling** between each pair of towns will be **another integer**.

There may be many roads between different towns, consider this as a regular road network. As in normal non-regulated road you can move in the both directions.

## Input

* The **first line** holds an integer **n** – the number of zones
* On the **second line**, you will receive the number **m** – the number of roads
* On the **third** **line** the start and the destination **{start} {destination}**
* At the next **m** **lines**, you will receive the roads in the format: **{from} {to} {time}**

## Output

* Print on the **first** line the **path** for the delivery
* On the second line the **pre-calculated time**

## Constraints

* Number of zones will be an integer in the range [**0**…**10000**]
* Number of roads will be an integer in the range [**0…10000**]
* The time for travelling will be an integer in the range [**0…10000**]
* All zones will be numbered from **0** to **N - 1**.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 7  10  0 6  0 2 13  2 1 2  1 0 3  3 0 42  3 1 4  2 4 12  3 4 8  4 5 7  5 6 16  6 3 3 | 0 1 3 6  10 |
| 3  3  0 2  0 1 12  1 2 30  0 2 3 | 0 2  3 |

*“I learned very early the difference between knowing the name of something and knowing something.”*

*― Richard P. Feynman*