**Algorithms with Java: Exam Preparation**

This document defines the exam preparation for ["Algorithms – Fundamentals (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/2515/Exam-Preparation).

# Le Tour de Sofia

Pierre is training for the famous bicycle tour of Sofia. He is a cyclist, the laziest at that, and he is planning a workout route…the shortest one.

You are given all **junctions** and all **one-way streets** in Sofia. Help Pierre find the **length of the shortest route starting at a given junction and ending back there**. If there is no such route print the **numbers of junctions reachable from the start**.

## Input

* The **first line** holds an integer **n** – the number of junctions
* On the **second line**, you will receive the number **m** – the number of streets
* On the **third** **line**, **s** - the start of the route
* At the next **m** **lines**, you will receive the streets in the format: **{from junction} {to junction}**

## Output

* If there is a route from the start and back to it, print the length of the route
* If there is no such a route, print the count of reachable junctions from the start

## Constraints

* Number of junctions will be an integer in the range [**0**…**10000**]
* Number of streets will be an integer in the range [**0…10000**]
* All junctions will be numbered from **0** to **N - 1**.
* Time limit: **100 ms**. Allowed memory: **20 MB**

## Examples

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | **Output** | **Visual** | **Comment** |
| 7  10  0  0 2  2 1  1 0  3 0  3 1  2 4  3 4  4 5  5 6  6 3 | 3 |  | The shortest route starting at 0 is:  0 🡪 2 🡪 1 🡪 0  It has length of 3 |
| 3  2  1  0 1  1 2 | 2 |  | There is no route for Pierre. Junctions that can be reached: 1, 2 |