BLM1011
Introduction to Computer Science
Assignment - 2
(Due 08/12/2018 – 23:59h)

Q1

There are several bus lines and bus stops in a city. Suppose that you are given the number of buses (N), the number of bus stops (M) in whole city, and a matrix (NxM) consisting of 1s and 0s. 1s represent the stops of a bus line.

Design an algorithm
- which sorts and list the bus lines based on the number of their bus stops in descending way.
- which finds the most and least busy bus stops
- which finds the most identical two bus lines in the city.

EXAMPLE

Input:

Number of Bus Lines   N:5
Number of Bus Stops   M:6

Bus Stops

	1	2	3	4	5	6
1	1	0	0	0	0	1
2	0	1	1	1	0	0
3	0	1	0	0	0	1
4	1	0	1	0	1	1
5	1	1	1	1	1	1

Bus Lines

Output:

a. Bus Line 5: 6 stops
    Bus Line 4: 4 stops
    Bus Line 2 : 3 stops
    Bus Line 1 : 2 stops
    Bus Line 3 : 2 stops

b. The most busy bus stop : Stop 6
    The least busy bus stop : Stop 4 and Stop 5

c. The most identical bus lines : Bus Line 4 and Bus Line 5

BLM1011
Specifications for Assignments

Submission

- Assignments submitted after submission deadline (at most 2 days late) will be evaluated over 50. Do not send any e-mail 3 days after submission deadline.

- Collaboration on any assignment is strictly prohibited. Submitted assignments are automatically checked for similarities. Infractions will be given a zero for the entire assignment.

- Assignments MUST be submitted by e-mail. Every student must send his/her assignment to the following e-mail address.

   amac@yildiz.edu.tr

- Subject of the e-mail MUST contain course name, Assignment # and student number in specified format written below;

Example Subject :

Content

1. An archive (zip, rar) file which contains only **ONE report file** and **ONE source file**. The question number indicates the number of source files.

2. The report file should include

   1. Question - A brief description for each question
   2. Solution - An explanation for each solution
   3. Flowchart – The flowchart for the algorithm
   4. Source Code - The source code (use Notepad++ or the equivalent to have colored codes)
   5. Analysis - Numerous (at least 5, if necessary more) screenshots to show that your program runs correctly

About Source Code

The source file must include **comments** which explain the code.

The code should be **well-designed**.

About Comments
o   Important algorithmic parts must be commented.
o   You must write a heading comment describing you and the program

3. The name of the submitted files must contain student number

Example: zip/rar filename :   13011001.rar

The zip/rar should contain

pdf filename: 13011001.pdf
Source filename: 13011001.c
// No separate jpg, bmp, etc. files

- Do not forget to prepare a cover page which should include
  - Course Name
  - Course Group
  - Instructor Name
  - Assignment Number
  - Delivery Date of the Assignment
  - Student Id
  - Student Name and Surname
  - Signature

- You can draw your flowchart either by your hand or by computer. Just work clean !!!

ATTENTION

- Do not use double filename extensions. For example, xxx.zip.rar, xxx.c.exe, … etc. Otherwise your mail will be blocked by spam filter and your assignment will not be evaluated.

- Assignments that don't comply with submission rules will **NOT** be evaluated. **"NO EXCEPTION"**