**WIA1002/WIB1002/WXES1117 Data Structure**

**Lab 1 : Ice Breaking (My letter)**

Submission dateline: **26 February 2016 before 12:00am on Spectrum.**

**Question 1**

Your task is to write a letter to me(your respective lecturer) that has two parts.

**Part 1:**

In the first part of your letter, you will introduce yourself. An example is as below:

|  |
| --- |
| Monday, 24 February 2016.  My name is XXXX (your name) with matrix number, XXXXX (your matrix number). I am majoring in XXXX (your majoring). This is my first/second/third (specify) time taking the Data Structure subject. At the moment, I am feeling XXXX(your emotion) about taking this subject. This is because XXXX (describe the cause of your emotion about taking DS).  I acquired XXXX (your grade) for my previous Programming 1 course. It’s not too bad. So, I think I can manage to get XXXX (the expected grade) for this DS subject this term. In order to do well in the subject, I will XXXX (what will you do). Wish me luck!!! |

1. Create a text file that introduces you to me. Name this file as yourname\_matrixNum.txt (i.e., Unaizah\_WXX12345.txt). The content of the first part of your letter can be adapted from the example given above. (However, you are free to write on your own, so long you retain the information). Write/type directly on a Notepad and save them as a text file format (.txt).

1. Create a program to read the file (yourname\_matrixNum.txt). Display the contents of the file in the output console. [Project name : MyLetter\_matrixNum]

**Part 2:**

In the second part of the letter, you will append your letter (from part one) dated the day of the last lecture class of DS (10 June 2016). Assuming you fast forward to the future, reflect and describe:

* How you performed in the class?
* Are you happy with your performance?
* What has learning DS taught you / what did you learn from DS?
* Is there any change to your target grade?
* What you did well during the course?
* What could have been done better during the course?

**Part 3:**

Write the second part of the letter using the input from Console (Do not type on the txt file directly). To do this, you are required to modify your program above (2) by importing a Scanner class to read input from the keyboard. Your description outlined above should be appended (not overwritten) to the first part of your letter. Display the contents of the letter (part 1 and part 2) in the output console. The final letter should be something like below:

|  |
| --- |
| Monday, 24 February 2016.  My name is XXXX (your name) with matrix number, XXXXX (your matrix number). I am majoring in XXXX (your majoring). This is my first/second/third (specify) time taking the Data Structure subject. At the moment, I am feeling XXXX(your emotion) about taking this subject. This is because XXXX (describe the cause of your emotion about taking DS).  I acquired XXXX (your grade) for my previous Programming 1 course. It’s not too bad. So, I think I can manage to get XXXX (the expected grade) for this DS subject this term. In order to do well in the subject, I will XXXX (what will you do). Wish me luck!!!  Monday, 10 June 2016  It’s me again. Finally, it’s the end of the term and the DS class has finished! I think I did XXX (your performance) in this course. ………. |

**Part 4:**

Your submission zipped as [*Letter\_yourName\_matrixNum.zip*] should include the following :

* 1. Text file : yourname\_matrixNum.txt
  2. Project folder : ReadMyLetter\_matrixNum

**Question 2**

1. Write a program to read a text file (text1.txt) that has a sequence of characters that are delimited (separated) by a *special character* (i.e., comma, semi colons, spaces, etc.). The number of characters can vary from 1 to N. Your task is to :
   1. For each line, calculate the number of characters retrieved from the text without the special characters.
   2. Display all characters from the text without the *special characters*.
2. Repeat (1) to read integer numbers (text2.txt).
3. Repeat (1) to read real numbers (text3.txt).
4. Repeat (1) to read alphabets separated by numbers (text4.txt)

Example of text1.txt

|  |
| --- |
| A,c,c,o,m,p,l,i,s,h,m,e,n,t  B,r,i,l,l,i,a,n,t  C,r,e,a,t,i,v,e  D,e,t,e,r,m,i,n,a,t,i,o,n  E,n,c,o,u,r,a,g,i,n,g  F,o,c,u,s |

Example of text2.txt

|  |
| --- |
| 15, 2, 9, 78, 33, 61  198, 523, 91, 42, 13, 77  34, 45 |

Example of text3.txt

|  |
| --- |
| 4.33; 2.51; 6.11; 2.33; 6.31  1.95; 3.67; 2.22  6.84; 5.04; 9.56; 0.92 |

Example of text4.txt

|  |
| --- |
| abc123def456ghi789jkl |