COSC 1047 – Spring 2017 – Assignment 3b
Due: See D2L

This assignment is designed to give you some experience writing Java objects using FileIO. This assignment is done using Eclipse. Import the .zip file that is provided on D2L and when it is complete, export it again as a .zip. All submissions should be done through D2L. You can submit and resubmit as many times as you want up to the due date and time. If you have any problems submitting, email me – alangille@cs.laurentian.ca - in a timely manner. **Make sure your name, student number and a brief description of your program appear at the top of each file in comments. Also make sure that you use comments to clarify your code for marking.** *Failure to do either of these tasks may result in a mark deduction.*

Note: It is imperative that you import the a3b-w17.zip file from D2L properly or you won't be able to work in the proper project environment. Although the screen shots are a bit outdate these instructions are correct:

http://agile.csc.ncsu.edu/SEMaterials/tutorials/import_export/

Submit solutions to question 1 only.

Question 1. (`question1.java, 20 marks`)

(15 marks) Write a program that prompts the user to enter a filename (use a Scanner to get the filename). The program then outputs to the screen the number of lines, words and characters in the file.

```
C:\Users\aaron\Desktop\>java question1
Enter input file name: text1.txt
32 lines
159 words
810 characters.
```

(5 marks) Collect the filename using a JFileChooser instead of using a Scanner. (Not shown here.) Also prompt the user to enter a string to search for in the file. In your output, state how many lines contained the requested string and display the lines and their line number.

```
C:\Users\aaron\Desktop\>java question1
Enter input file name: text1.txt
Enter a string to search for: and
33 lines
159 words
810 characters.

Your requested word - and - was found 8 times.
6: And what to do and how to be
10: But there in the sandpile at Sunday school.
21: Wash your hands before you eat.
23: Warm cookies and cold milk are good for you.
25: Learn some and think some
26: And draw and paint and sing and dance
27: And play and work everyday some.
31: Hold hands and stick together.
```

Question 2. (`AverageIO.java, 20 marks`) (20 marks) Write a program that collects an input filename and an output filename. The input file contains lines with two double numbers per line separated by a ':'. Write the sum and average of each line in the input file to the output file. Use a Scanner to collect the filenames from the user. Test your program using `numbers.txt` for input.

```
C:\Users\aaron\Desktop\>java AverageIO
Enter input file name: numbers.txt
Enter output file name: output.txt
Processing complete.
```

After completion, my program produces `sum.txt` with contents:

```
27.52 13.76
0.48  0.24
-17.299999999999997      -8.649999999999999
29.4  14.7
2047.9      1023.95
0.0011      5.5E-4
6.57  3.285
24.660000000000004       12.330000000000002
111.86099999999999       55.930499999999995
768.0 384.0
```

(5 marks) Modify your program so that it can also deal with invalid data in the file. Use exceptions to respond to values that are missing or that cannot be converted to numbers by putting an appropriate message in the output file. Use moreNumbers.txt to test. Here are the contents of my output.txt file:

```
27.52 13.76
0.48  0.24
Error converting numbers.
29.4  14.7
2047.9      1023.95
0.0011      5.5E-4
6.57  3.285
Missing column(s).
111.86099999999999       55.930499999999995
768.0 384.0
```