COMP 3522 Lab #2: Let's dive in!

Christopher Thompson, Jeffrey Yim
cthompson98@bcit.ca, jyim3@bcit.ca

Due Sept 20th 11:59pm

Welcome!

Welcome back! In today's lab, you will use random numbers to populate a new file. Then you will use IO to read the file and perform a quick statistical analysis. Fun for all shall be had!

1 Requirements

Please complete the following:

1. Create a new project in CLion. Let's call it Lab2. Choose C++ Executable for the project type and ensure you select C++14 as the Language Standard.
2. Examine the project files that are created. Note there is a file called main.cpp that contains a main method stub. Remember that CLion uses cmake, which is a build tool similar to ant. cmake uses a file called CMakeLists.txt. Did you remember to set the correct compiler flags?
3. Add this project to version control and GitHub. From the VCS menu in CLion select Import into Version Control | Create Git Repository... to add the project to a repo.
4. Add the project to GitHub by returning to the VCS menu and selecting Import into Version Control | Share Project on GitHub. Call it Lab2, make sure it's private, and add a first commit comment. It's fine to add all the files for your first commit.
5. Visit GitHub and ensure your repository appears. Add me as a collaborator. In GitHub, I am known as jeffbcit. You'll recognize my avatar.
6. Modify the output printed to the screen, and commit and push your new version.
7. Write a program that creates a file called Readings.txt. Inside the file, your program must create a list. The list is composed of integer double pairs. There is one pair per line. The integers are in sequence (0, 1, 2, 3, ...) beginning with zero and ending with some random value between 512 and 1024. The doubles should be random values between 50.000 and 90.000. The doubles only have 3 decimal places. The file should look like this (of course your doubles will be random, and there will be more than 5 readings):

   ```
   0 56.347
   1 78.231
   2 89.999
   3 68.002
   4 55.128
   ```

8. Write a program that opens the file called Readings.txt. The program must read the contents of the file and produce a report that looks like this to the screen:

```
There are XXX readings in the file.
The average reading is YYY.YYY.
The highest reading is ZZZ.ZZZ.
The lowest reading is AAA.AAA.
The median reading is BBB.BBB.
```

9. Ensure you commit and push your work frequently. You will not earn full marks if you don't.
10. Do NOT submit this Lab via D2L/The Learning Hub, submit it via GitHub
11. After you submit your Lab to GitHub, send me a private message on Slack telling me you're finished, along with your student number, gitName, and collaboration url. ie: "Jeff I uploaded my work to gitHub. My student number is A00XXXXXX and my gitName is YYYYY, my git collaboration url is: ZZZZZZZZZZZZZZZ"
12. That's it. Make sure you've invited me as a collaborator and let's mark it! (Due end of day Friday Sept 21st)

2 Grading

This lab will be marked out of 10. For full marks this week, you must:

1. (2 points) Commit and push to GitHub after each non-trivial change to your code
2. (3 points) Successfully write and test a program that creates a Readings.txt file exactly as described in the Requirements
3. (3 points) Successfully write and test a program that opens and consumes the Readings.txt file exactly as described in the Requirements
4. (2 points) Write code that is commented and formatted correctly using good variable names, efficient design choices, atomic functions, thorough tests.