COMP251 Writing Assignment, Part 2:
Extending the technical report to include experimental results
(100 points)

Scenario: Your Good Software Company (GSC) manager has asked you to expand your Part 1 technical report to include experimental results summarizing the computational efficiency of integer and floating-point arithmetic on the machines GSC uses for data analytics. Fortunately, GSC's data analytics computers are identical to the Apple iMac computers in the Tome labs. The extended report is intended for the same programming team audience as Part 1, but now the manager wants the programming team to see some real experimental results comparing the speed of addition and multiplication of four Java datatypes (int, long, float, and double) on the machines that will be used for running the data analytics software.

Details: Design one or more experiments that will produce the information requested. Implement your design in a Java program and record the results of running your program on one of the Tome iMacs. Add new material to your technical report, describing the experiment, the results, and providing explanations of the results based on your understanding of computer arithmetic and the Tome iMacs' architecture. Include your Java code as an appendix to the report. Edit the entire report so that it is still a coherent, unified document. The total length, excluding appendices, should be 7-9 singlespaced pages. Other requirements are the same as for Part 1.

Rubric: The same rubric as for Part 1 will apply, but extra weight will be given to the new material added in Part 2.

Suggestions: It is again recommended to visit the writing center. In addition, you may find it helpful to read the textbook's Chapter 11 on "Performance Measurement and Analysis." This chapter provides interesting background, and it will give you a feeling for some of the issues involved in benchmarking computer performance, but it contains no specific knowledge required for the assignment.