**Lab 2 Report**

*Your name here*

*Your netid here*

**To Submit Your Code:**

Create a tar file with your source code, a makefile, and a README file that explains how to build your lab and how to run it. Send that tarfile, via email, to comp412code@rice.edu

**To Submit Your Report:**

Answer the questions below. You may edit this document directly and submit via email — rename the file to your netid so that your filename does not clash with the filenames used by other students.

You may submit this document on paper by answering the questions and turning it in to my office, DH 2065. You can slide it under the door if I am not there.

Be sure to write down your name and your netid.

**Quantitative Results**

For each of the benchmark codes in ~comp506/students/lab2/TestCodes on the **CLEAR** systems, complete the following chart, where O1 and O2 are the two optimizations that you built.

|  |  |  |
| --- | --- | --- |
|  |  | **Simulated Cycle Counts** |
| **Bench-mark** | **Input** | **Original** | **O1** | **O2** | **O1 then O2**  | **O2 then O1** |
| bsort | bsort2.d | 42,359 |  |  |  |  |
| qsort | qsort2.d | 15,505 |  |  |  |  |
| fib | 20 | 1,753 |  |  |  |  |
| mmult | 50 | 8,425,269 |  |  |  |  |
| sumred | sumred1.d | 4,272 |  |  |  |  |
| algred | 50 | 2,520,408 |  |  |  |  |
| oneloop | 50 | 3,510,218 |  |  |  |  |

The code produced by your lab should produce the same answer as the original code— that is, both the original and the optimized code should print the same numbers in the output. (Of course, the simulator report on instructions executed and cycles executed should be different.)

**Experience**

1. Briefly discuss your experience building the optimizer. What things were easy to do? What things were hard?

**Experience** *(continued)*

1. Which optimizations did you implement?

What problems arose in your implementation?

Did you extend them in any interesting way beyond the basic algorithms?

**Experience** *(continued)*

1. If you implemented loop unrolling, how did you decide which loops to unroll?

**Experience** *(continued)*

1. What, if anything, would you do differently if you could start over on this project?