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CS 475
Parallel Programming
Assignment 5 Report

1. I ran this on my home desktop, it is running an Intel i5-2500k, 8gb RAM.
- 2.

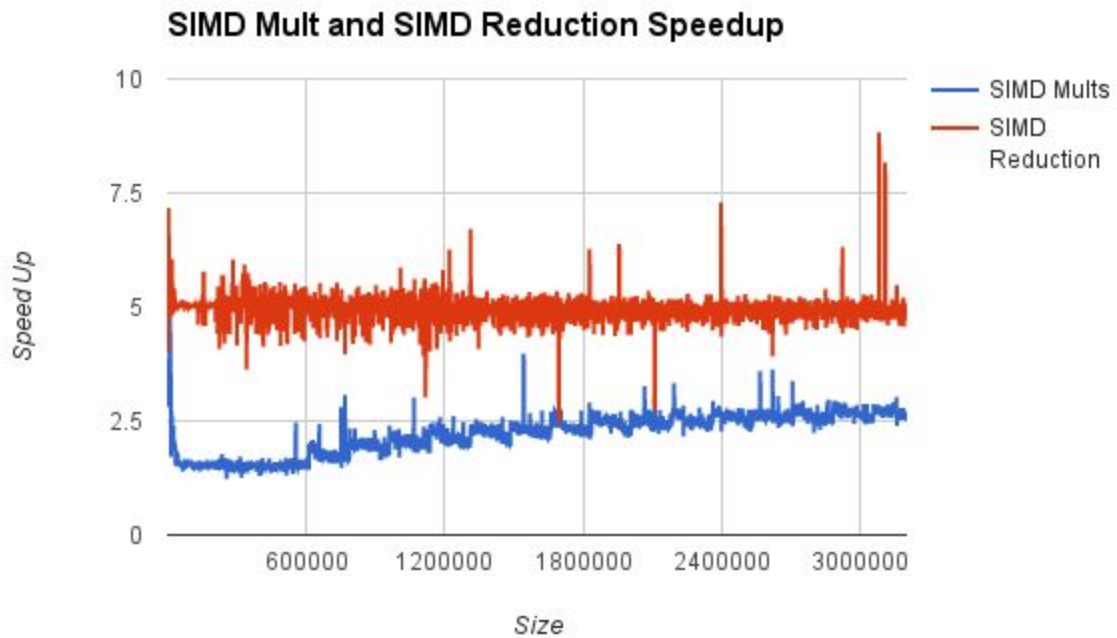
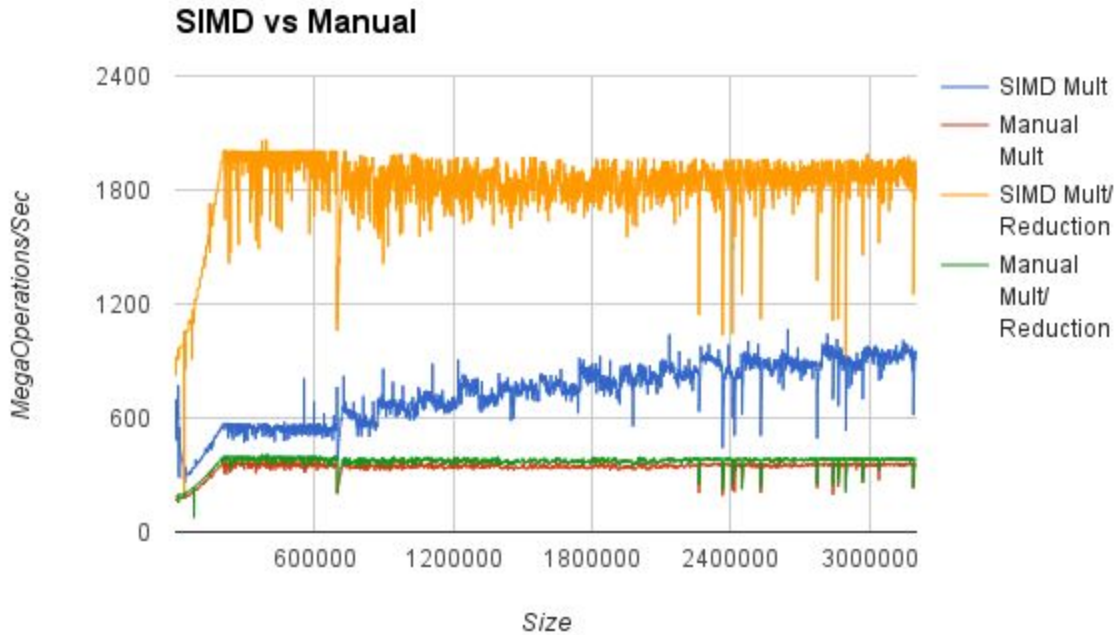


Table is attached in the zip. There are 32000 rows. Here is a summary:
Max Mult Speed up: 4.8139
Max Reduction Speed up: 8.2806

Here is a graph of the performance over the entire run:



3. The SIMD Mult and Reduction are vastly faster than the manual or non-SIMD execution times. We see an eight times increase in reduction speed, and up to a little over four times increase in multiplication speed. It's quite a large speed up!
4. The larger the array sizes, the greater the performance it seems. The SIMD reduction speedup tops out fairly quickly around three hundred thousand, while the SIMD mult seems to be increasing constantly as the array size gets larger and larger.
5. These speed ups make sense as the larger the array size, the more SIMD is utilized across threads. The operations occur so quickly that the full benefit is not seen until the array size is large enough.
6. Because the number of executing simultaneous threads will give over four times speed up.