Serial vs Simulated Parallel Time Execution

Experimental Platform:

CPU: Intel Core i7-8550U 4Cores/8Threads

Architecture: Kaby Lake R – 14nm

Clock Speed:

Base: 1.80 GHz

Boost: 4.00 GHz

Cache Size: 8 MB

Memory Size: 8 GG

Performance Evaluation:

For this experiment, I used simple serial code to compute the sum of a set of numbers, as well as simulated parallel code. When timing the code, I timed only the part where the summation is done, and left out any unnecessary parts, such as calculated the $\log_2$ of N.

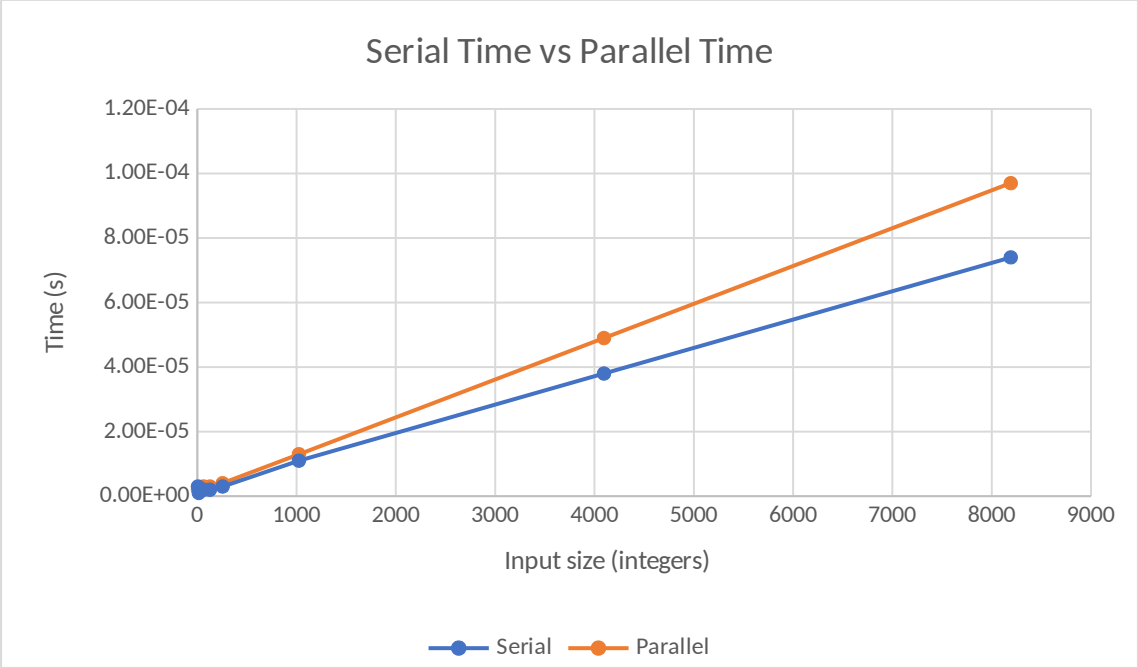

Figure 1 Seriral vs Parallel runtime

As seen in Figure 1, the parallel running time mimics that of the serial code, but as the input gets larger, the time difference between the two also grows larger. The parallel code should run faster than the serial code, but in this experiment, we are simulating parallel code with serial code., thus it is not true parallelism. Upon running the code multiple times, there was very little variance between the runs.