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CptS 411

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Homework 4

Analysis

The analysis of the data provided comparing sequential and parallel execution times show different ways that these specific algorithms work. The sequential execution times consistently show fast processing, with execution times in the order of microseconds. However, as we look at the parallel execution with an increasing number of processes, the execution times start to rise. This suggests that parallelization may not necessarily lead to the expected speedup for this algorithm. It can be seen in the parallel execution times implies potential challenges associated with parallelization, such as communication and synchronization costs. This shows the need for careful consideration of the algorithm's nature and problem size when deciding whether to pursue parallelization, as well as the importance of optimizing parallelization strategies to minimize overhead and improve scalability.

I was able to successfully run Open MP code where the stream compaction algorithm takes place. All I had to do was find the correct method to implement this. And I then parallelized it. On the other hand, I was not able to successfully complete the up and down sweep methods. I got the up sweep to work as I somewhat was able to decipher the pseudocode provided, but could not do that for the down sweep algorithm. I did try to implement this but my calculations w ere somehow always wrong. All in all, I learned a lot but this was a difficult assignment.

Graph & Table

A screenshot of a table

Description automatically generated

A graph with a line and a line

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