Project 2 MultiCore Computing

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Below are test results for testing each version on two different computers.

Query Time Benchmarks

Below are the query time results for running 1000, 10000, 100000 and 1000000 random queries for each of the five versions.

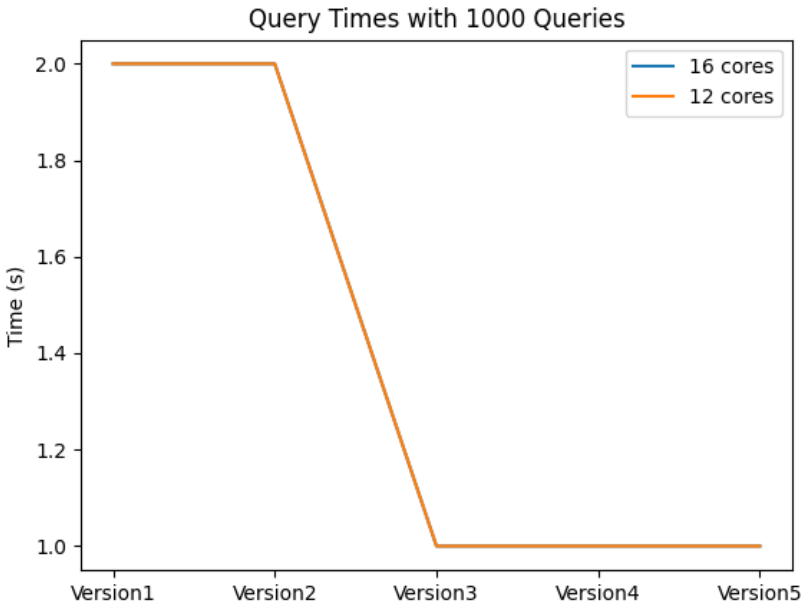

Figure 1: Total time for 1000 queries

Our evaluation was done on two different computers, one with 12 cores and one with 16 cores. You can see a small amount of speedup for the computer with 16 cores. For the last 10000000-count query, Version1, Version2 and Version3 were too slow and we weren't able to run them to completion.

You can also see that for low query counts, there is not a huge difference between the versions. However as we increase the query count, the performance difference becomes much more apparent as the query time grows for the non-parallel versions while remaining low for the parallel versions.

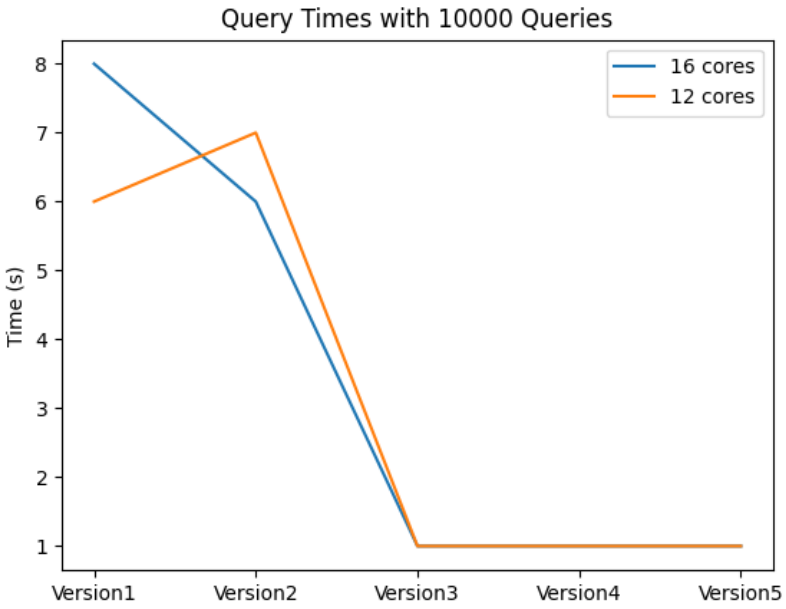

Figure 2: Total time for 10000 queries

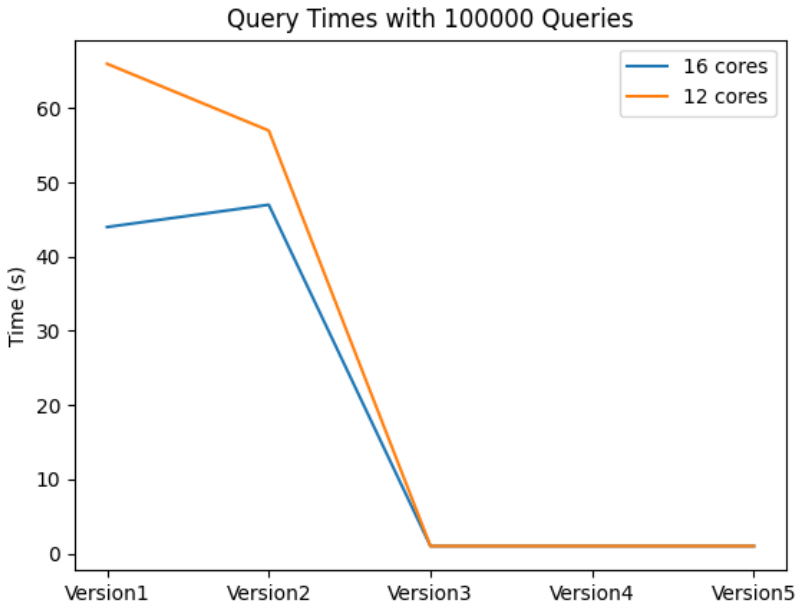

Figure 3: Total time for 100000 queries

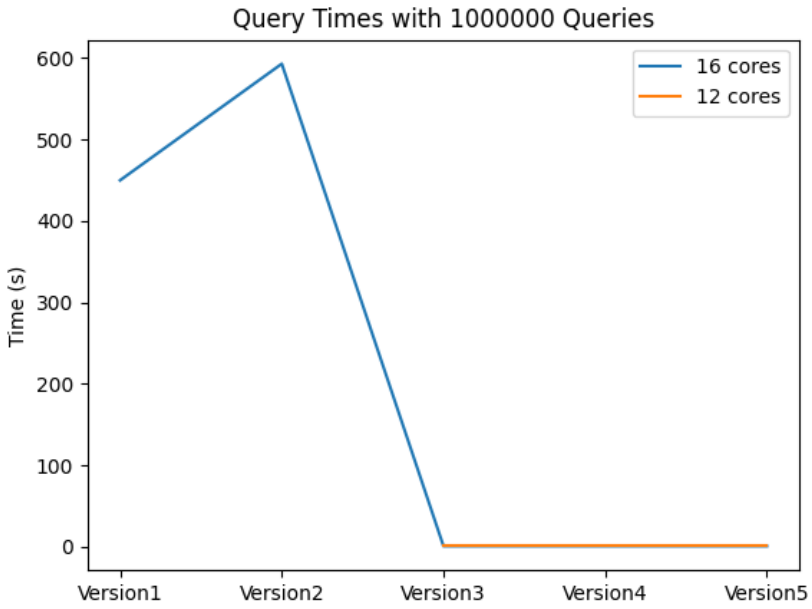

Figure 4: Total time for 1000000 queries

Note: we didn't try to do any of the above & beyond code. We implemented the 5 different versions as required.

Development Process

To write the code, we each worked on different versions and then would come together in a meeting to merge the code. In this way we made sure that it would work correctly on both of our systems.