Exercises for

Database Implementation

Elite Graduate Program Software Engineering

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Assignment 6

Excercise 1

Implement a parallel hash join algorithm using the following techniques:

1. *Chaining with locking*: Implement your parallel hash join using a hash table with fine-grained locking (one lock per chain). You can try out the different mutex variants provided by Intel TBB (`https://www.threadingbuildingblocks.org/docs/help/reference/synchronization/mutexes/mutex_concept.htm`).
2. *Chaining*: Avoid using locks in this implementation. You should make use of `compare and exchange` provided by `<atomic>`.
3. *Linear probing*: Similar to *Chaining*, you should make use of `compare and exchange`.

Please add your implementation to the `hashjoinskeleton.cpp` provided on the website. Compare your implementation against the provided STL implementation. You may use `parallel_for` provided by Intel TBB.