

Parallel Implementation of Hashing Algorithms

Project Proposal for CS359

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## Abstract

With increase in size and complexity of data, the storage and access of data is an important task. One way in which data is structured is in the forms of pairs, like Product-Price in an e-commerce business, Product-Stock in inventory systems, etc. Here the insertion, access and updating of the data can be very costly for large dataset size. This pair like association can be implemented with hash tables/maps that allows efficient random access of elements and can be both constructed and accessed at interactive rates. Hashing is one of the methods used to map such key-value-like data.

With multiple processors/GPU, the performance of such data structures can be further improved by implementing them with parallel computing. Such a parallel-friendly data structure has numerous applications in computer graphics, centered on applications that need to store a sparse set of items in a dense representation.

## Objectives

We propose to:

* Implement multiple parallel hashing algorithms.
* Analyze and compare the algorithms’ performance with each other.