

Abstract

In this project, we developed two efficient thread-safe implementations of the slot map data structure in the C++ programming language. The slot map is a data structure that allows for constant time insertion, look-up, and deletion, all while storing data contiguously to allow for fast iteration. We implemented two different versions of it, one that is constant size and another which is dynamically re-sizeable. In our testing we found that under heavy multi-threaded contention our implementations are up to 10 times faster than a locked-based version of other slot map implementations available online.