

Read Write Map

Implement a “Read-Write Map” leveraging an existing reentrant Read-Write lock so that it can be shared safely by multiple readers and writers, and yet prevent reader-writer or writer-writer conflicts.

Note: Mutual exclusion is a conservative locking strategy that prevents writer-writer and writer-reader overlap, but it also prevents reader-reader overlap. In many cases, data structures are “read-mostly”; in these cases, multiple readers should be able to access the data structure at once. This is what read-write locks allow: a resource can be accessed by multiple readers or a single writer at a time, but not both.