

Part2: Write Up

After running the default mutex binary, I noticed that the reader threads were quite a bit higher.

Default Mutex Results:

total readers: 2937601

total writers: 34489

In order to create a fair mutex, I started with the sample code provided in the file “default_mutex.h” and added additional sleeping and yielding methods. I also created a variable to check the number of writers that are waiting to take the mutex and told the reader threads to give up their position in line if there is more than 1 writer waiting.

After this implementation, I noticed that the writer threads throughput was very high compared to the reader threads. To level out the reader and writer threads out a little bit more, I added a yield statement at the very end of the writer lock function. Results are within 2x of each other so I assume this is a decent implementation.

Fair Mutex Results:

total readers: 339487

total writers: 550869