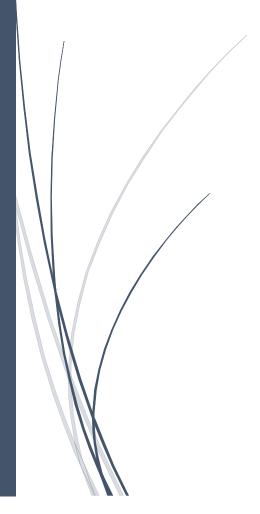
10/12/2021

Timing Report

Lab 2



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Running Tests

Mutex(Semaphore)	Synchronised	Atomic Integer
4.356 s	4.052 s	4.071 s
4.275 s	4.436 s	4.041 s
4.106 s	3.977 s	4.170 s
4.047 s	3.924 s	4.206 s
3.991 s	3.988 s	4.131 s
4.155	4.0754	4.1238

Avg:

Average(Avg), Fastest, Slowest

Comparing the tests

In this case, the Synchronised version seems fastest by looking at the average, but less stable as it has the biggest worst-case and largest best-case scenario.

Researched benchmarks also show that synchronization is the worst would be the worst case the more threads we add.[1]

We can see that Atomic Integer is faster than the Mutex even doo they are quite similar since the mutex loading each thread between memory whereas Atomic Integer uses a busy waiting mechanism(Test-and-Set).

References

[1] Baptiste Wicht, 2010-09-01, Java Synchronization (Mutual Exclusion) Benchmark,

https://baptiste-wicht.com/posts/2010/09/java-synchronization-mutual-exclusion-benchmark.html