OS Project 3

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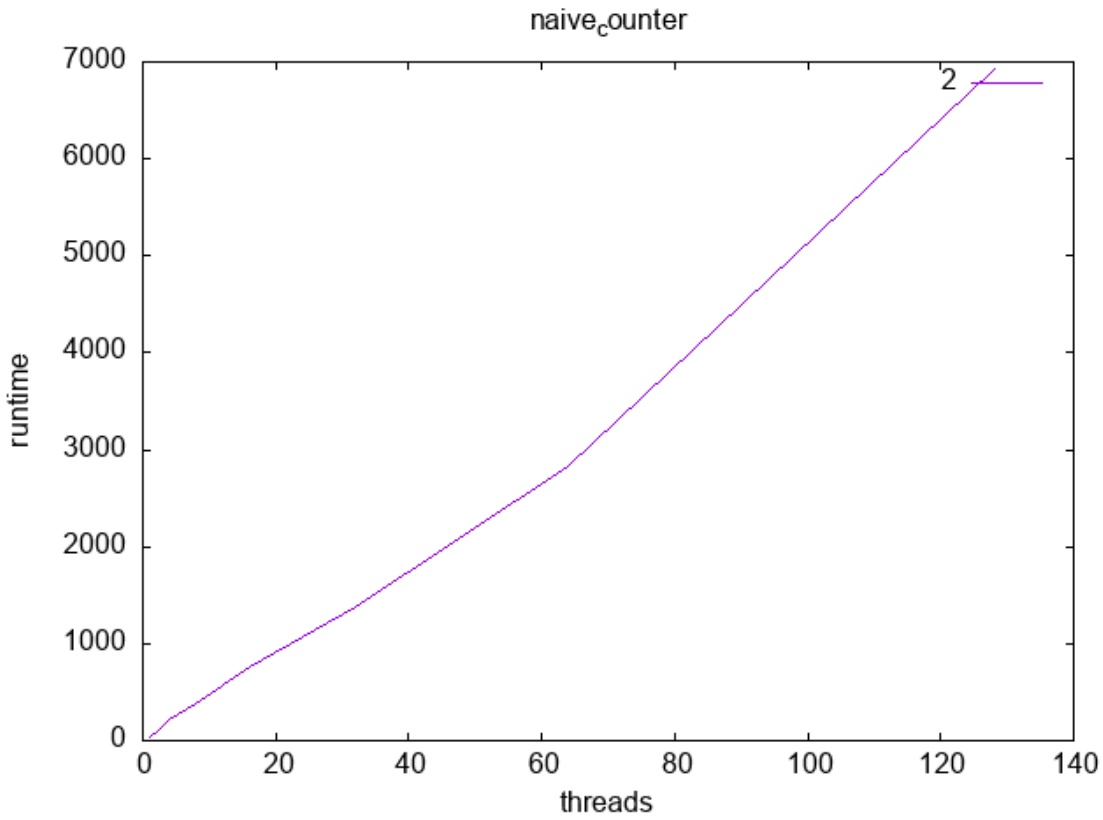
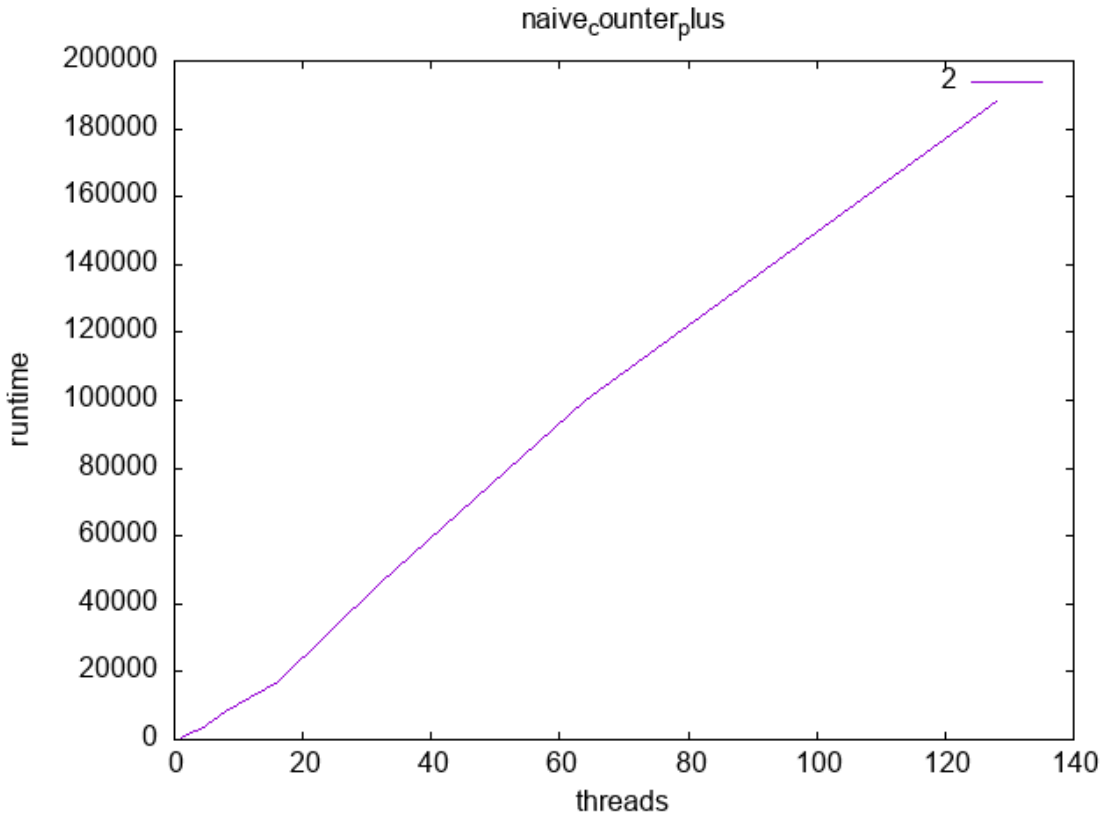
Results

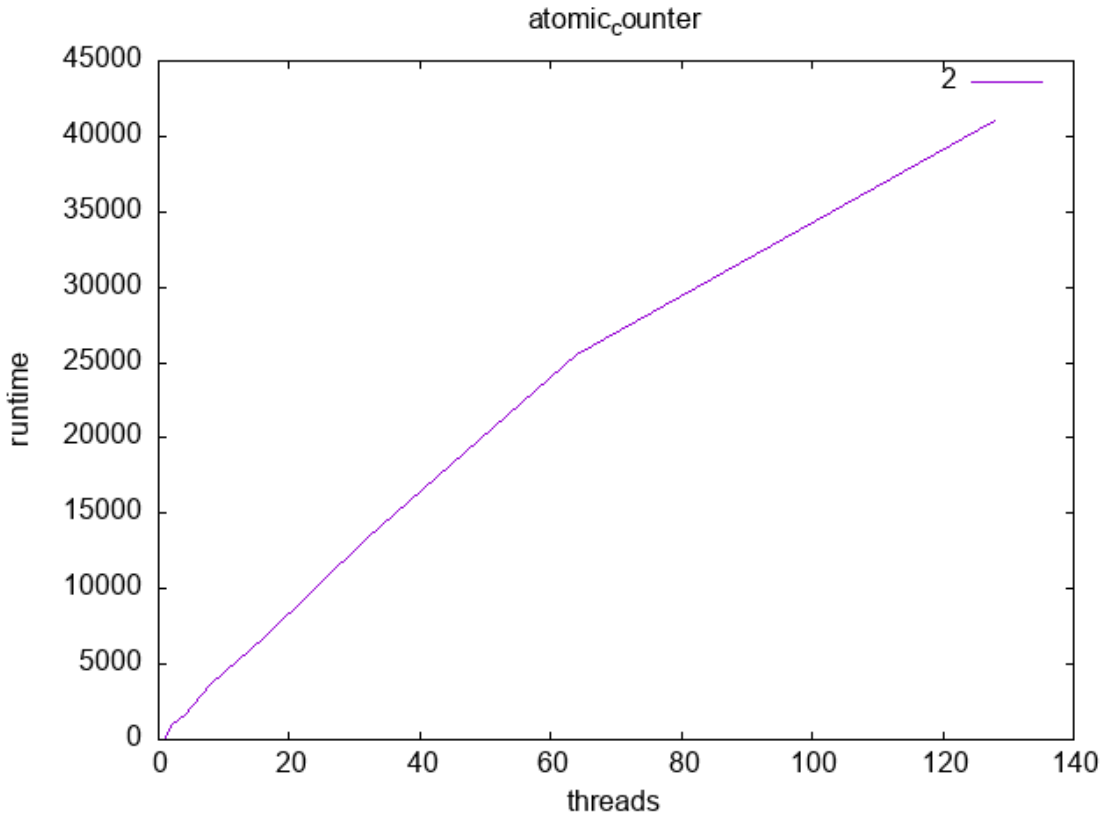
threadCount	runTime
1	29
2	93
4	224
8	378
16	753
32	1386
64	2826
128	6920



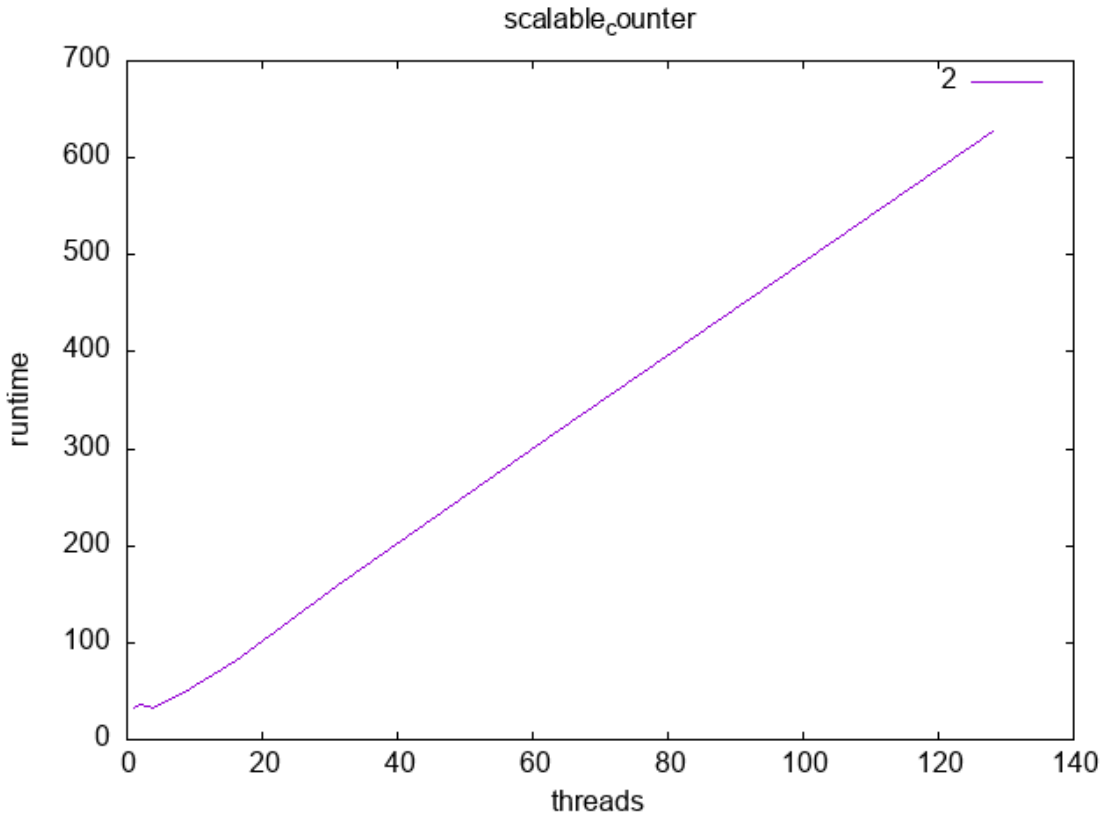
threadCount	runTime
1	310
2	1490
4	3121
8	8077
16	17213
32	46182
64	99748
128	187970



threadCount	runTime
1	121
2	882
4	1665
8	3683
16	6717
32	13371
64	25573
128	41070



threadCount	runTime
1	33
2	36
4	32
8	47
16	81
32	164
64	319
128	627



Questions

Naive Counter error

Naive counter is very off from the true value, because the thread addition often collide with each other, and not all the increments get saved

Atomic Counter vs Naive plus

The Atomic counter increments the global counter truely atomically and saves time, while the Naive Plus algo wastes a lot of time waiting to make sure that only one thread is in the critical section, retrieve the data, then release a lock.

Atomic Counter vs Naive

Naive has many threads running at once, and inherently is faster than Atomic counter since Naive's threads can interrupt each other, while atomic's threads cannot interrupt each other.