Operating Systems
&
Concurrency
Assignment-2

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1 Comparison of Different Methods Used to Achieve Synchronization

1.1 Efficiency Vs. responsiveness

When developing our solutions we have experienced significant differences between the results on a system by system basis. We have selected a single system to run all the tests on, so that their relative performance in that environment can be compared. The system in question has a 4 core 4.5Ghz i7 processor, 16GB of DDR4 RAM and is running the latest version of Windows 10. It is important to emphasize that the tests are not representative of anything beyond the system they ran on.

The table below shows the average time in seconds to complete 5 runs of the tests, for each of the sync classes. A description of each test and the full test results have been provided in the appendix:

Thus a direct ranking based purely on an efficiency perspective results in the following ranking:

1. Intrinsic
2. Semaphore & Atomic
3. Extrinsic

Test Name	Atomic	Intrinsic	Extrinsic	Semaphore
1A	23.364	8.393	47.181	
1B	0.815	0.690	0.719	
2A	0.127	0.124	0.125	
2D	2.040	1.738	1.753	
3A	1.794	2.630	2.624	

1.2 Readability

discussion about Readability (about half a page)

1.3 Error-proneness

discussion about Error-proneness (about half a page)

References