

CS342 Operating Systems - Spring 2021 Project #2 – Scheduling, Threads, Synchronization Experiment Results

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Section 01

In first trial, I have observed the average waiting time for thread in each algorithms.

Results:

When there are 4 workload threads, 10 bursts for each of them, average_b 450, min_b 400, average_a 120, min_a 160:

FCFS average waiting time for threads to burst in ms = 7219

SJF average waiting time for threads to burst in ms = 12232

PRIO average waiting time for threads to burst in ms = 4745

VRUNTIME average waiting time for threads to burst in ms = 4660

When there are 4 workload threads, 10 bursts for each of them, average_b 100, min_b 130, average_a 120, min_a 160:

FCFS average waiting time for threads to burst in ms = 2862

SJF average waiting time for threads to burst in ms = 11926

PRIO average waiting time for threads to burst in ms = 4615

VRUNTIME average waiting time for threads to burst in ms = 7514

When there are 4 workload threads, 10 bursts for each of them, average_b 100, min_b 130, average_a 300, min_a 360:

FCFS average waiting time for threads to burst in ms = 7531

SJF average waiting time for threads to burst in ms = 3074

PRIO average waiting time for threads to burst in ms = 5355

VRUNTIME average waiting time for threads to burst in ms = 8018

Observations:

Effects of min_a, min_b, avg_a, avg_b and algorithms are observed. It is obtained that approximately PRIO and FCFS algorithms are most quickest algorithms that doesn't increase the average waiting time. On the other hand, it can be obtained from the results that as avg_b and min_b values increases average waiting time increases too. Only exception that is not expected is in VRUNTIME algorithm with lower min_b and avg_b values, average waiting time was smaller. Increasing avg_a and min_a values reacted as increasing avg_b and min_b (increased average waiting time) except SJF. SJF algorithm was fastest algorithm for bigger average_a and min_a values. Because in each case we kept the number of bursts steady, we could observe real differences between algorithms and effects of avg_a, avg_b, min_a and min_b values.