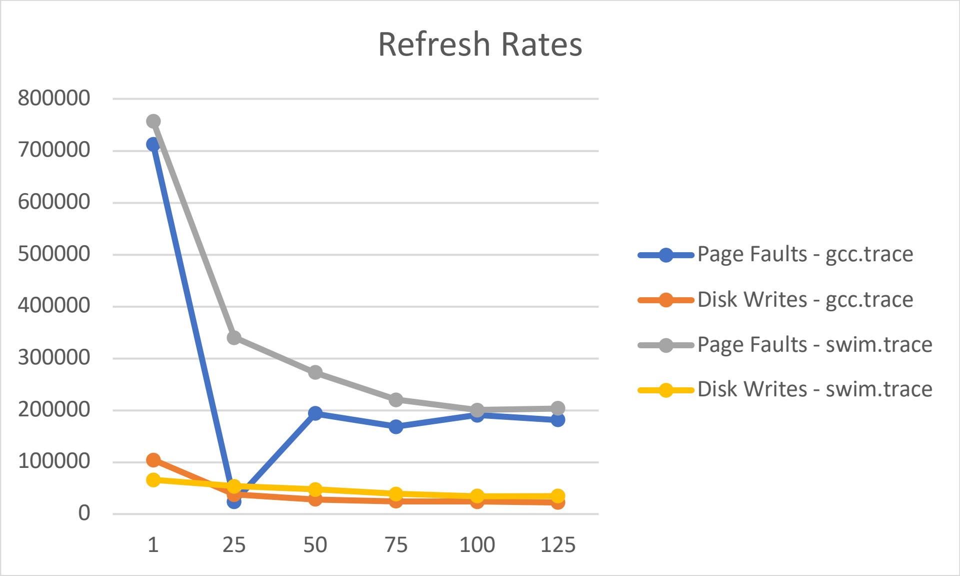
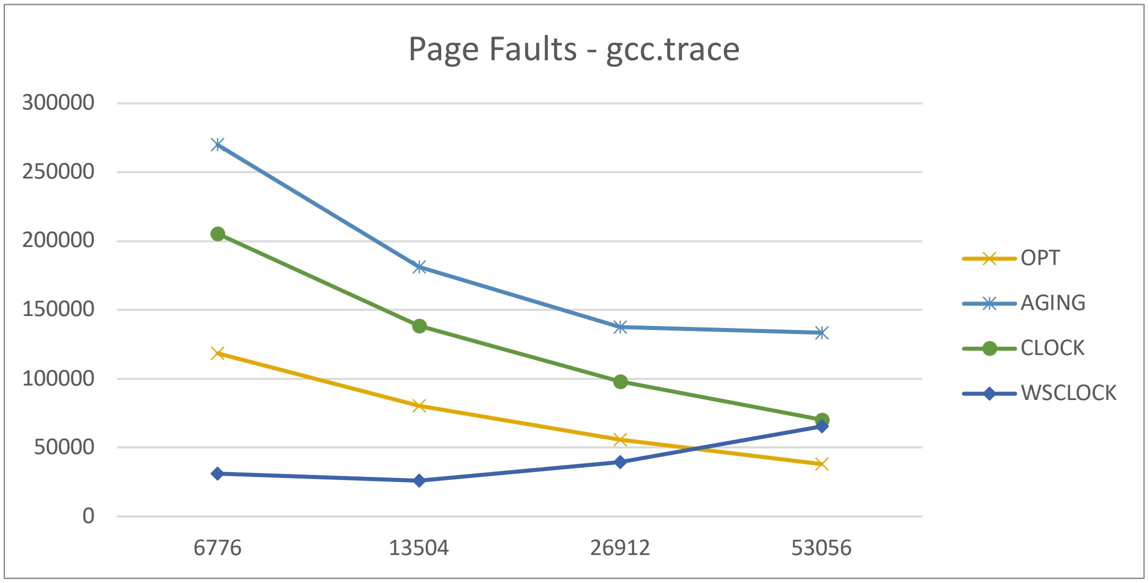
Collin Dreher
CS1550 – Project 3
Professor Farnan
TuTh 2:30 – 3:45

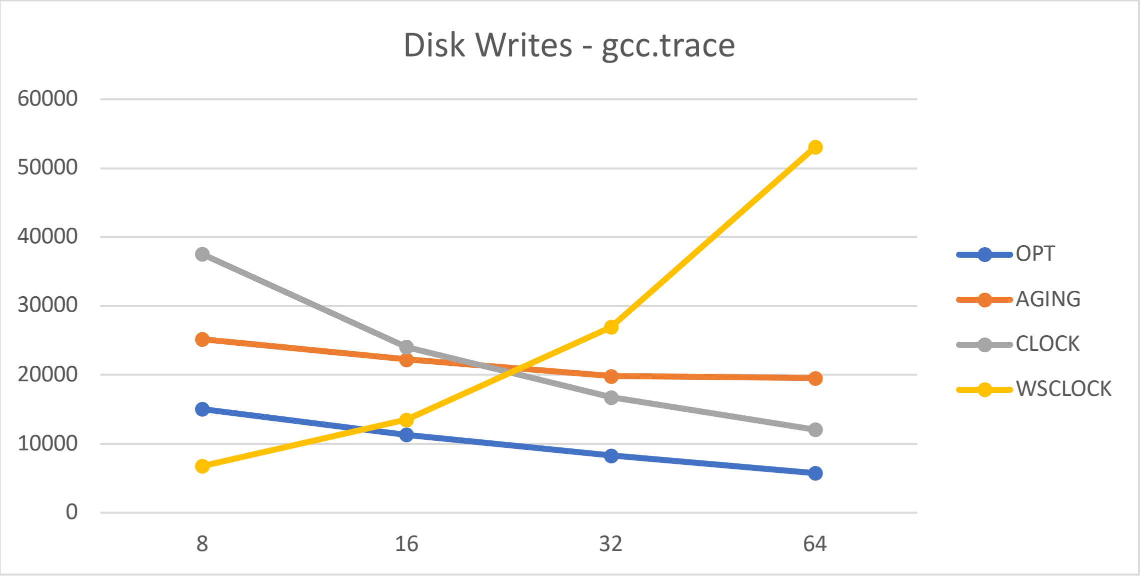
REFRESH STATS

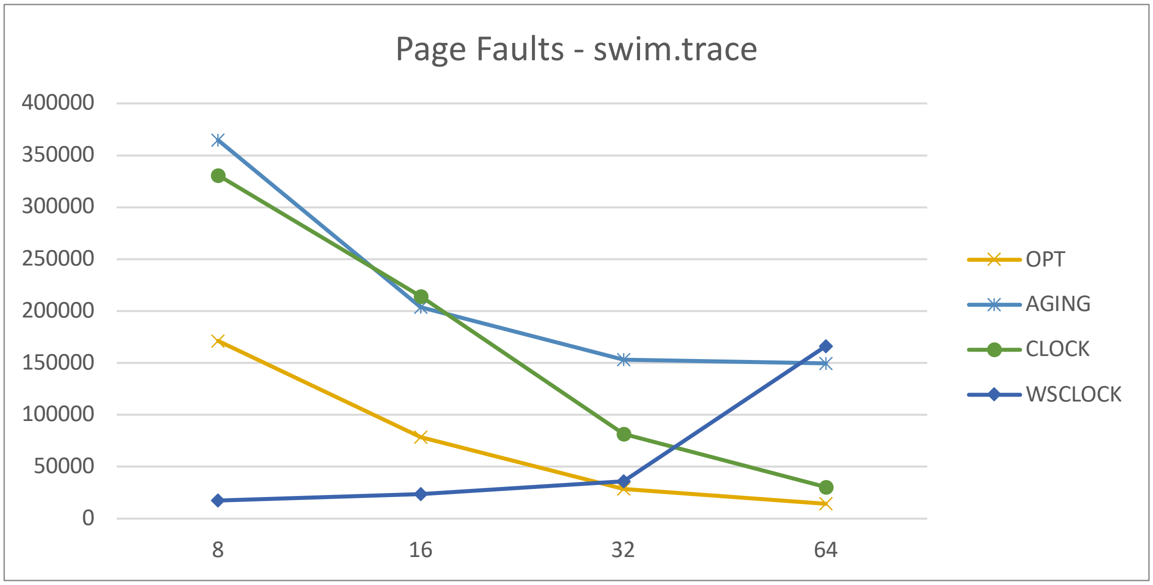


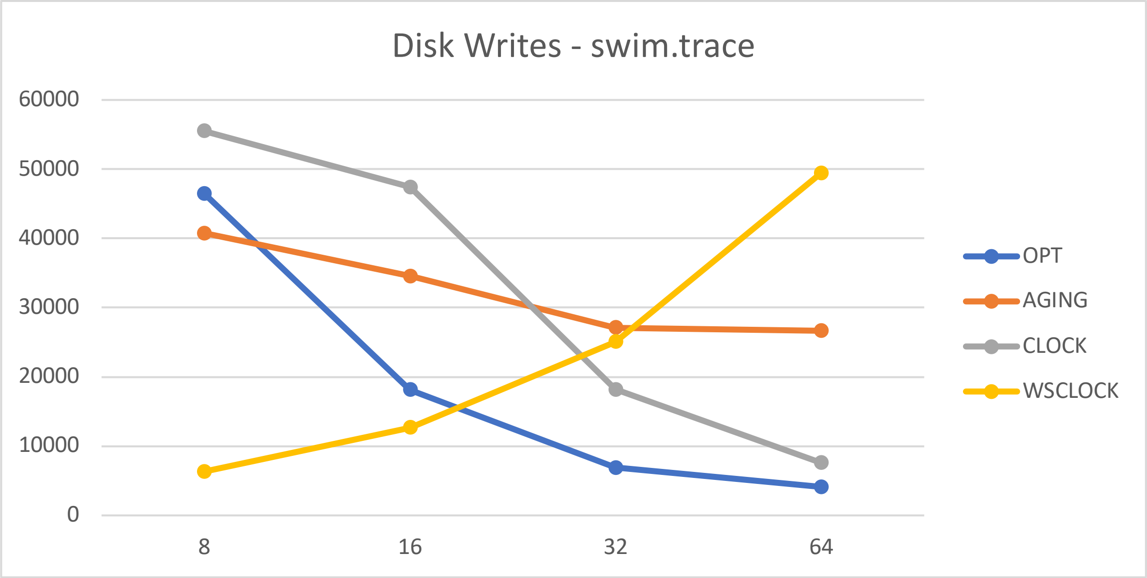
The above chart displays the refresh rates used in the aging page replacement algorithm. The values 1 to 125 were tested (in intervals of 25). The goal was to find what refresh rate seemed the most consistent. My answer, was to choose 125. From the chart above, it seems any value from 100 to 125 could be acceptable, however, at the refresh rate of 125 it seems that both the disk writes and page faults for both *swim.trace* and *gcc.trace* plateau out. Additionally, when using a refresh rate of 125, the aging algorithm compares closely with the clock algorithm **(see below charts).**

PAGE FAULTS & DISK WRITES:

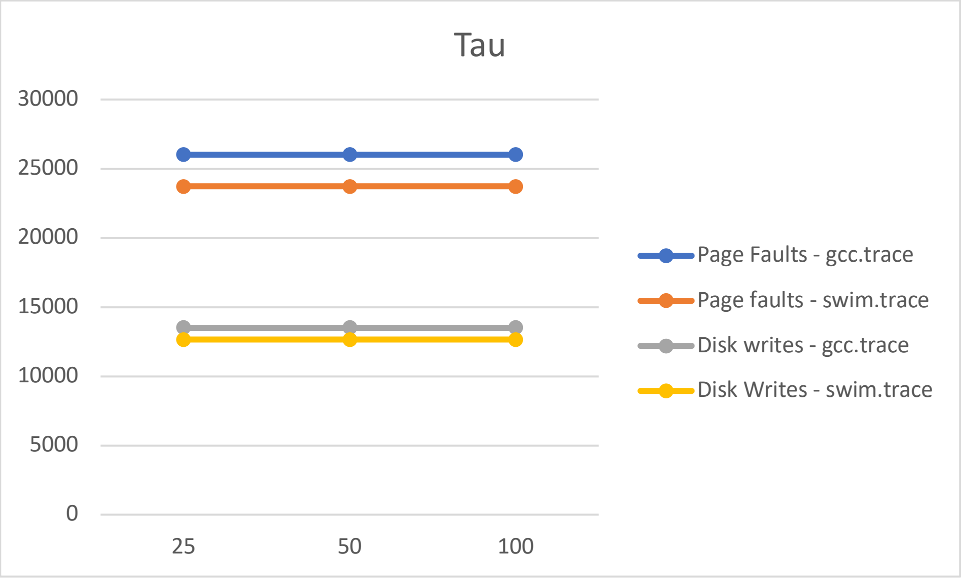

Page Faults - gcc.trace
300000
250000
200000
150000
100000
50000
0
6776
13504
26912
53056
OPT
AGING
CLOCK
WSCLOCK


Disk Writes - gcc.trace
60000
50000
40000
30000
20000
10000
0
8
16
32
64
OPT
AGING
CLOCK
WSCLOCK





WSCLOCK TAU DISCUSSION*:



***NOTE →** Based on the above data, it was seen that Tau had no effect on the disk write or page fault outputs of *swim.trace* or *gcc.trace*. This should not be the case, while the Tau value should be a strong determinant in the efficiency of the algorithm. So…I simply used 50 for all of my tau values.

CONCLUSION:

Based on all of the above data, it can be concluded that the **clock page replacement algorithm** is the most appropriate implementation for today's operating systems. Using OPT as the baseline for comparisons, clock most likely resembles OPT. In *swim.trace*, the data collected for disk writes and page faults seem to be higher on average than the aging algorithm (for 8 and 16 frames at least). However, once reaching the 32 and 64 frame level, clock produces data very similar to OPT, thus making it the most practical use for today's computers. Aging could be considered over clock, however, it's a pretty inefficient task to select a truly good refresher parameter. WSClock also can be compared, however, due to the dependency on the tau value, it again falls inferior to clock. **Therefore, the clock page replacement algorithm is most fitting for today's real-world operating systems.**