Andrew Beers

Operating Systems

Project 3 Write-up

1.) Picking a refresh period for both aging and NRU

Series 2 – NRU

Series 3 – Aging

The chart is using 8 frames

Here we see that while aging gets slightly better as it decreases the refresh period, NRU increases. This is because aging gets to fill up its history faster, giving it more information to evict off of, however NRU will increase since it will refresh too often and not have a nice bunch of referenced pages. I will use 16 as a refresh period or 2\*f where f is the number of frames.

2.) Determining the best algorithm

gcc.trace runs

The graph is pretty close to what we would expect, with opt being the optimal eviction algorithm and all algorithms improving the more frames are given to them. It is somewhat surprising to me to see rand out perform NRU, which shows how bad NRU really is, since it is more work than rand to implement. The best algorithm to implement seems to be aging since it performs the best and wasn’t too hard to implement. However it is important to consider how close random performs to aging without any of the overhead of keeping age of the frames. If performance is a huge issue than I would implement aging, if memory space is what you want to maximize then I would implement rand.