

Virtual Memory Lab

Data Analysis Report

Introduction

Using page fault algorithms LRU and FiFo, the goal of this lab was to identify which algorithm performs better than the other under a given set of frames. It shows the number of page faults each algorithm has with 3, 4, 5, 6 and 7 frames. The resulting file shows the frame number that has the minimum number of page faults and reports that number along with the algorithm.

Observation/Analysis

The maximum number of page faults observed with FIFO was 25 with 3 frames, and with LRU it was 23 with 3 frames. Both algorithms had 11 page faults as their minimum at frame number 7. The average page faults between the two algorithms for frame number 3 was 24, frame number 4 it was 20, frame number 5 it was 16.5, frame number 6 it was 13 and then frame number 7 it was 11.

Table 1: Results of Page Replacement Algorithm

Frame Number	FIFO	LRU
3	25	23
4	22	18
5	16	17
6	14	12
7	11	11

Table 1 shows each page fault count for both algorithms for each frame number.

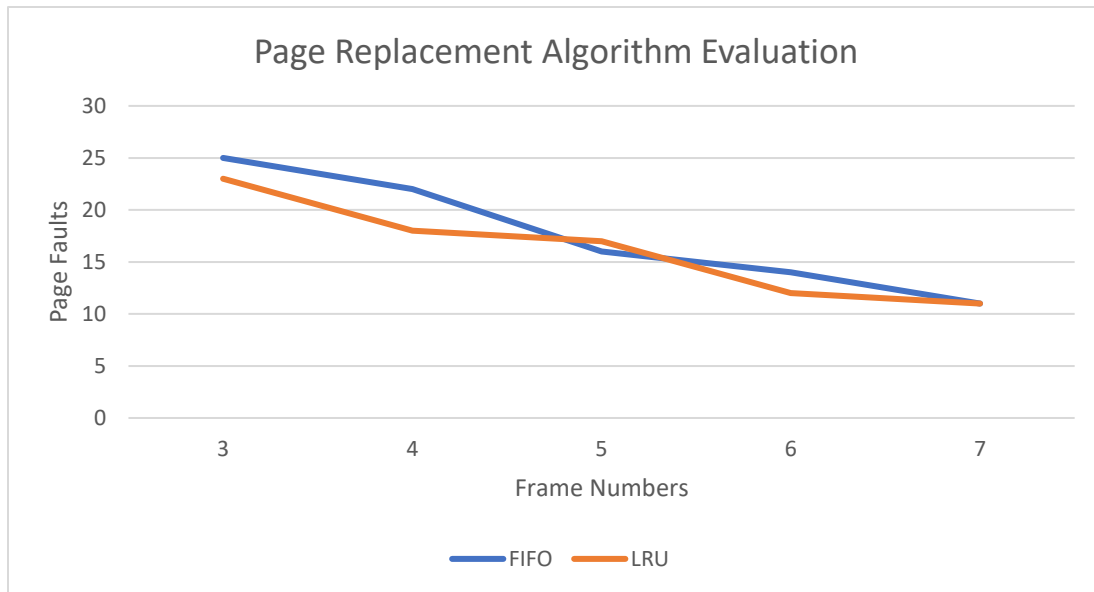


Figure 1: Results of Page Replacement Algorithm Lab

Figure 1 shows the trend that the amount of page faults is going to for each frame number. In this lab it is shown that the page fault counts go down as the frame number increases.

Conclusion

This lab shows that as the number of frames increase, the number of page faults tends to go down no matter which algorithm is being used. For LRU, the lab shows that the lower the frame count, the LRU algorithm seems to be more efficient, while the higher the frame count, the FIFO algorithm gets more efficient than the LRU algorithm. Both algorithms had the same minimum page fault amount at frame 7 with 11 page faults.