CSCI 4730 – Project 3

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This project consists of a virtual memory simulator that utilizes page table entries and various algorithms to move various processes in and out of memory locations. This project consists of three algorithms: FIFO, LRU, and Clock. The FIFO algorithm uses a queue to store frames as they are sent to the stack. The frames are then used for processes to allocate towards in a first come first serve order as given by the queue. The LRU algorithm uses a list structure and a counter for determining which page has been in the list the longest. When it is time for a process to be allocated to a page, it selects the page with the smallest counter, as that is the least recently used page in the structure. The clock algorithm uses a set of ordered pairs with each page, each having their own uses, to determine the best page to use during runtime. The three of these algorithms each have their own positives and negatives as to their use, and the output of the program for each algorithm shows how often a page will hit or miss, as well as the number of swap reads and swap writes.