Divine - Aluko Adeolu - Question 5 Page Replacement Algorithm a) FIFO b) LRU c) LFU

FIFO - This is the simplest page replacement algorithm. The operating system keeps track of all pages in the memory in a queue, the oldest page is usually the first in the queue which brings us to the concept of First in First Out which is replacing the oldest page in a queue. [5, 4, 3, 2, 1] Looking at this page queue we want to replace the oldest page with a new page ‘6’, since the oldest page would be the first which is ‘5’ then in the algorithm 6 would replace 5; [4, 3, 2, 1, 6].

LRU - least recently used is a widely used algorithm in operating systems for managing memory. This algorithm maintains a list of pages in memory and keeps track of when each page was last used, whenever a page needs to be replaced, the algorithm selects the page that was least recently used(LRU) and swaps it out with a new page. this example would be in page and count usage: [A,5] [B,4] [C,2] [D,7] [E,6] say we have a new page ‘F’ we want to replace so we would look for the page with the least count uses which is “[C,2]” the algorithm would then replace it; [A,5] [B,4] [F,5] [D,7] [E,6].

LFU - least frequently used. This algorithm replaces the pages with the smallest count of uses. an example would be in page and uses(1 being most used and 5 being least used): [A,1] [B,5] [C,3] [D,2] [E,4] say we have a new page ‘F’ we want to replace we would choose the least recently used which is “[B,5]” the algorithm would then proceed to replace it; [A,1] [F,2] [C,4] [D,5] [E,3].