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Title: Lab Assignment 8 - Write up
Description: Discussing the different scheduling algorithms implementation

COMPILE: Compile using make which calls the make file. Then you can call it by:
cat access.txt | ./scheduling_algorithm cache_size

FIFO: FIFO stands for first in first out. This is the most basic algorithm which replaces the entry that been in the cache for the longest time. The Cache we start with is passed by the user and we read 100 instances from the access.txt file at a time. The first thing we do is we iterate through the cache and if the page number is already in the cache then we go to the next number from the input. Next if a page replacement happens then it the counter increases and if it reaches the full then it starts back over at zero. The page replacement happens at the counter.

LRU: LRU stands for least recently used which means it replaces the cache entry that has not been used for the longest time in the past. The Cache we start with is passed by the user. We read 100 instances from the access.txt file at a time. The first thing we do is see if the page number is already stored in our cache. If it isn't we check if the cache has any empty spots left. If there are empty spaces then the value can added to that location in the cache. Otherwise there will need to be a page replacement. First thing we do is add one to the lifetime of all the values for they've been around for the longest. Then we iterate through the size and found the oldest value and replace it.

Second Chance: Second chance really is a clock algorithm that periodically sweeps through all the pages. If the page is unused then it needs to be reclaim and if the page is in use then it will be marked as unused. The first that happens is the page number is checked to see if it is already in cache. If it is already in the cache then no page replacement will be done and therefore no fault. Otherwise if its not found there will need to be a page replacement and and page fault. If the reference bit is 1 then we can skip over it. Otherwise there will need to be a page replacement at that location by swapping the current value with one whose bit is 0.

Analyzing the graph: All the algorithms are very competitive with each other and not one clearly is the best algorithm to use given the random number text file.

Table 1

Cache Size	FIFO	LRU	Second Chance
10	9916	9915	9915
50	9515	9510	9510
100	9018	9029	9022
250	7534	7532	7526
500	5130	5206	5178