

CS 3413

Assignment 6

Due Date: November 20th, 2017 at 9:30 am

ASSIGNMENT IS TO BE COMPLETED INDIVIDUALLY BY ALL STUDENTS!

Solutions to the problem should be submitted via D2L. All solutions are to be written in C.

1. For this question I want you to use your work from Assignment #4 to examine working with both reading and writing to addresses. To do this the input file `sample_logical_addr` has to be changed. The file will now contain lines with the following format:

R 12345 OR W 54321 A

The first character is “R” for read or “W” for write. This is followed by the address. If it is a write action then a subsequent character is given that you are to write to the address. I have posted a sample file to D2L.

Your program is to run the same as in Assignment #4 with a given number of page frames and initial contents of memory (as specified on the command line). However, now you must keep track of when pages are written too. The easiest way to do this is to keep a “modified” or “dirty” flag for each page to indicate it has been written too. Once they have been written then before you can “swap out” the page you must store the contents of the page back into the memory file. This will allow a written address to be updated so when the page is “swapped in” later it will have the updated contents.

Your program should print for each logical address read/written:

Logical address -> physical address -> char

(where char is the character read/written at that logical address). It should also keep track of the number of page faults that occur and the number of dirty pages swapped out to print the statistics at the end.

Once you have this implemented, try running with a different number of frames allocated to your process.