WENTWORTH INSTITUTE OF TECHNOLOGY

College of Engineering and Technology
Department of Electrical Engineering and Technology

Operating Systems
Spring 2018

Lab 9

Develop a program with two subroutines (functions) that implement the LRU and the Optimal page replacement algorithms. These functions should accept a page trace and also a parameter for the number of frames allocated.

Your main routine should first generate a random page trace, where page numbers range from 0 to 31. It should then apply that page trace to each of the algorithms multiple times, where the parameter "number of frames allocated" varies from 4 to 24. Your main routine should then record and display the number of page faults for each run (i.e. number of frames allocated) and for each algorithm.

Verify that when running the same page trace, the page faults decrease monotonically with the number of allocated frames.

You may code your program in C or matlab.

What to hand in (using Blackboard):

- Your source file(s) (.C or .m, with appropriate comments). Do not attach project or make files.
- A screen shot of your terminal window(s) showing all the runs for each of the 2 methods (LRU and optimal).

RULES:

- Submit only source, image or document files. Do not submit .zip files or files with no or unknown extensions.
- Each group may consult with other groups/students about GENERAL concepts or methods, but copying code (or code fragments) or algorithms is NOT ALLOWED and is considered cheating (whether copied form other students, the internet or any other source).
- Each member of a group is required to contribute, and will be required to explain and defend every part of work done.
- Only one set of files should be submitted for each group.
- **To get full credit, you must attend the lab, show me your progress before you exit the lab (this goes for every student in the group), and submit required files before the posted deadline.**