CS342 Operating Systems

Project 1

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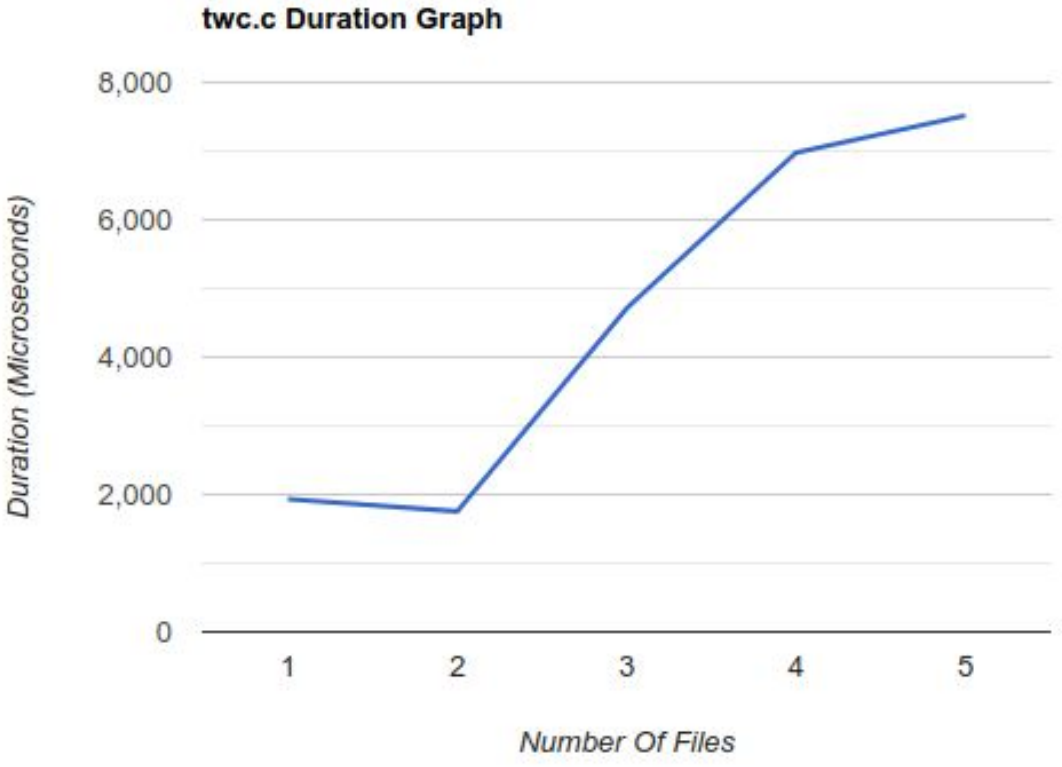
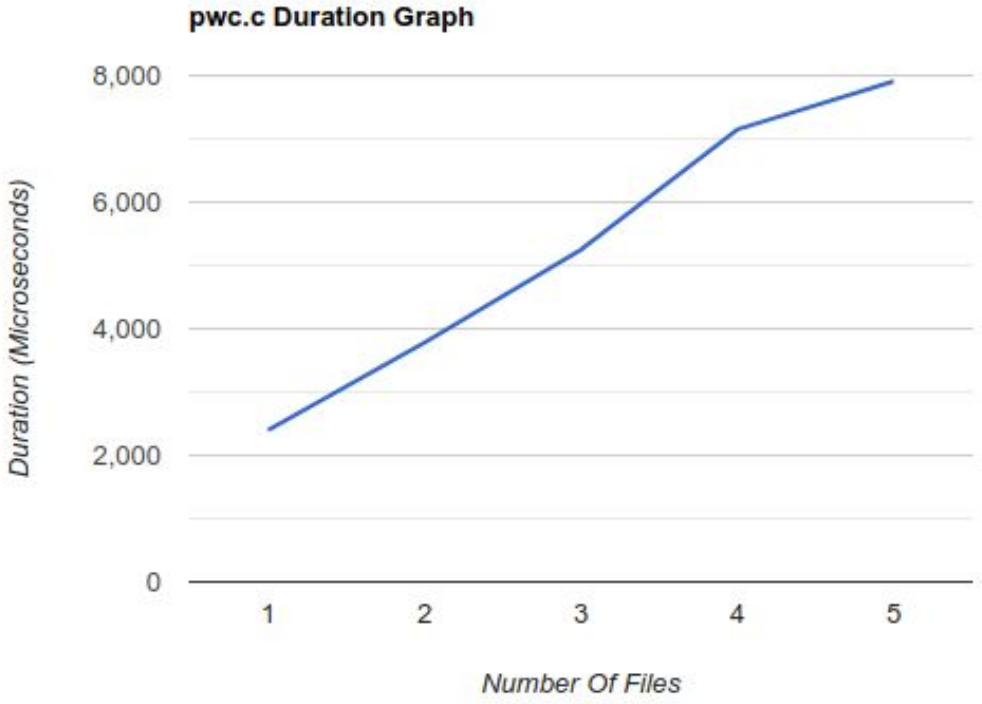
Below is my graph output for twc.c durations for different numbers of files as inputs.



Below is my graph output for pwc.c durations for different numbers of files as inputs.



Such a difference in the duration outputs for each of the experiments stems from the main differences between the structural differences of threads and processes. In thread creation, the main thread and other threads use the same memory space, and context switching is easier in threaded systems than in process running systems. When using processes, the system creates exact duplicates of the program and its memory when a fork() syscall is issued, and these child processes do not share any memory, further context switching can be tiresome, if current registers are all full. This means simply changing the PCB would not be enough and there would be pure overhead in this case. Thus we see that threaded programs are more efficient than process-using programs.