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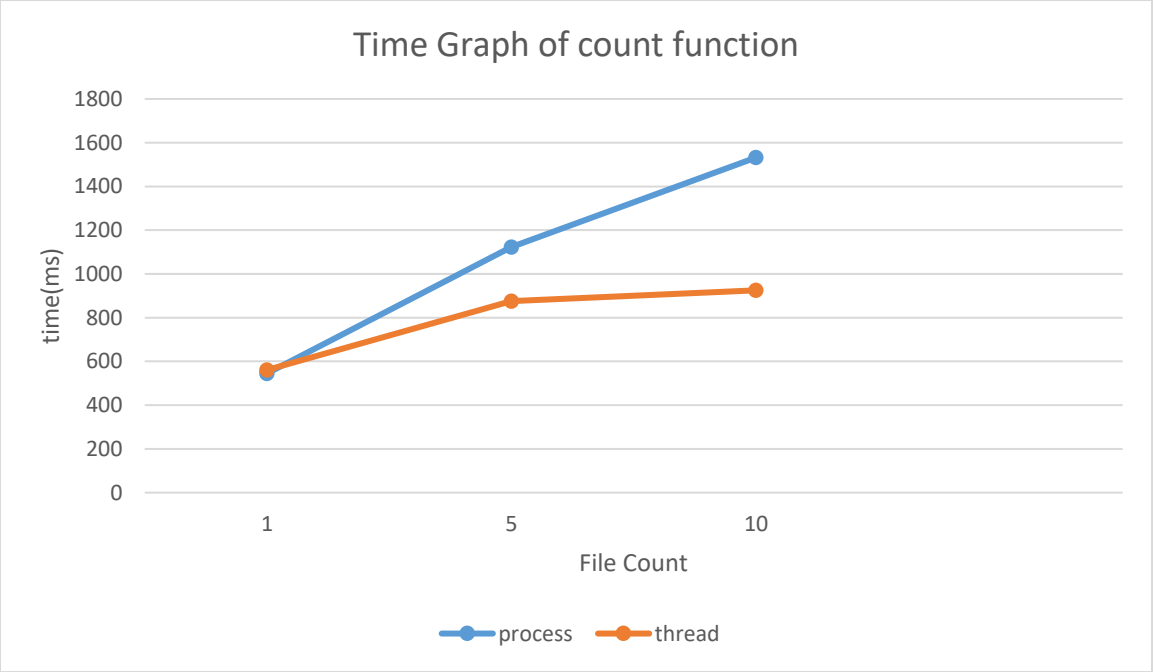
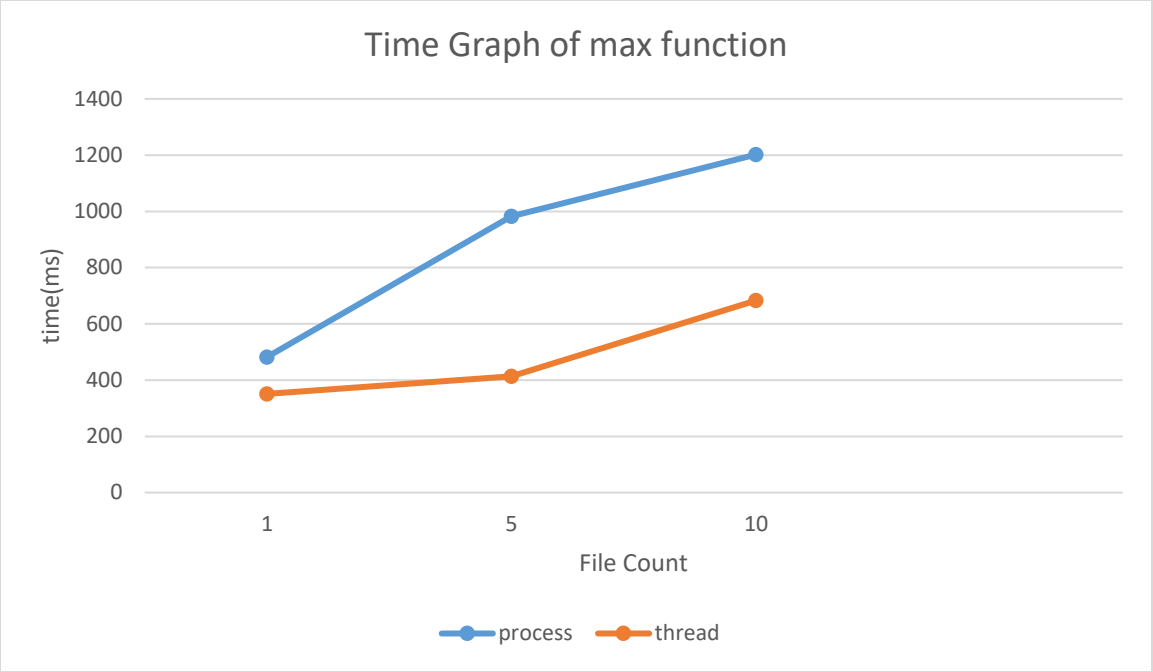
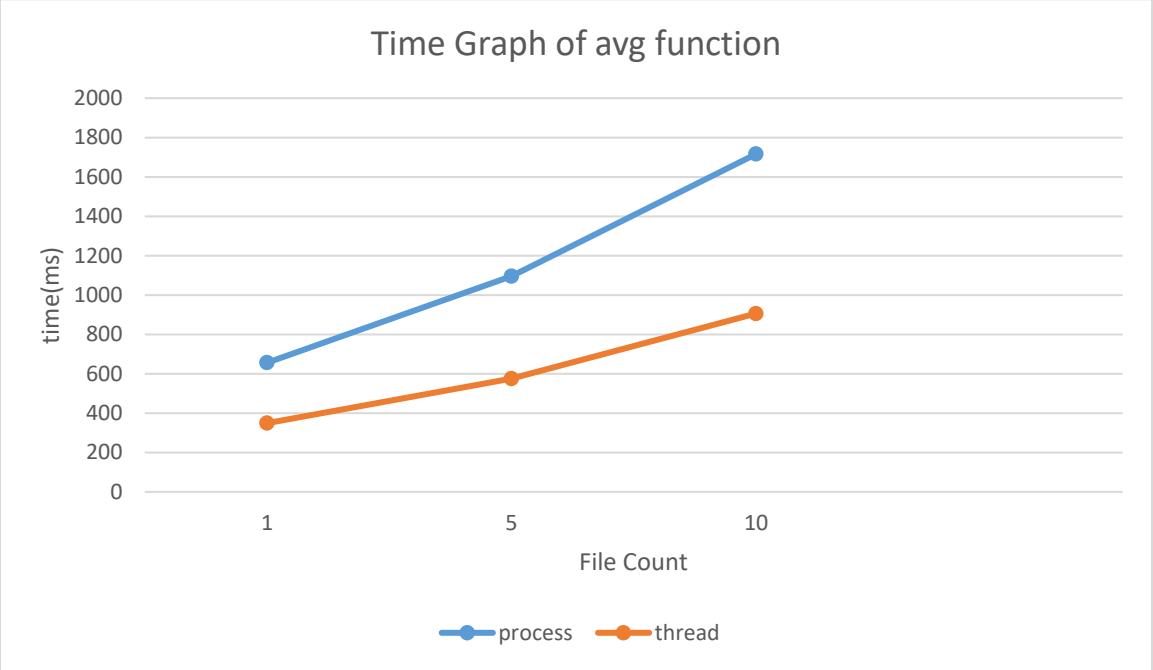
CS342 PROJECT1

Part c -) Experiments

Experiments have been done with 1, 5 and 10 files. The files is filled with random integers and all of the files include 1000 integer. Time is in microseconds.







I made three different function experiments on both of the process and threads. With respect to graph I drew, the difference can be negligible when there is one process or thread since I created one process or thread for each file. However, for max and avg function the performance of the thread seems more faster. The reason of that can be the process creation requires more time and resource. All the tables in the process must be transferred to other address. With 5 file

count, with respect to both of the functions, thread speed seems more rapid. The reasons of that can be explained by the process creation is more slower than the thread creation and for the threads I used global variables for parent process or thread to execute the data. The usage of global variables is more efficient than to use the pipes between processes. Moreover, switching between the threads is more efficient than switching between processes since threads share same address space. Certainly, the method of IPC or thread communication can affect the results. However, in this case thread with global variable is more efficient to use than processes with pipe. With the file count 10, the difference between process and thread execution time, thread usage is better. Since the count of processes and threaded increases, the thread communication and switching have important effect on the execution intervals.