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Assignment 3 Report

What problems you encountered completing the assignment and how you overcame them

I noticed that when running with 1 thread the word counts were correct, but they were incorrect when using more than 1 thread. I realized that only thread 0 was actually updating its word count. At first I tried doing file I/O before importing MPI, but that was too complicated so I just did file I/O in each thread.

Any problems you weren't able to overcome or any bugs still left in the program

There are not any bugs running 1, 2, 4, and 8 threads so far as I can tell.

About how long it took you to complete the assignment

The assignment took about 4 hours.

Performance measurements (given in seconds) for 1, 2, 4, and 8 threads

1 Thread: 0.3004 secs

2 Threads: 0.3004 secs (not a typo)

4 Threads: 0.3630 secs

8 Threads: 0.7274 secs

A short analysis of why the program behaves as it does with an increasing number of threads:

The program takes slightly longer with increasing numbers of threads because the more threads there are the more messages mpi needs to send and receive, which ultimately takes more processing time.

Observations/comments:

Using distributed memory does not seem optimal for this problem given my results.

Output from the cpuInfoDump.sh program:

model name : Intel(R) Core(TM) i7-8650U CPU @ 1.90GHz

4 36 216