Midterm Part 2: Programming with Pthreads and OpenMP

Fall 2024

Due: Tuesday, Oct 22, 11:59 pm

Coding Task 1: Convert the Nqueens program from Assignment 1 to parallel using Pthreads. Use your submission as your starter code. (First make sure that your sequential version works as expected)

Note: You can follow any approach as long as you have a correct output.

Coding Task 2: Convert the Nqueens program from Assignment 1 to parallel using OpenMP. Use your submission as your starter code. (First make sure that your sequential version works as expected)

Task 3: Benchmark the time it took for your sequential, Pthread, and OpenMP programs using a table as shown below:

Note: Please use time ./a.out for timing and record the real time.

N Queens (for N = 15)						
	Sequential	1 thread	2 threads	3 threads	4 threads	OpenMP
Time						

Task 4: Explain your observations from Task 3 in detail.

Deliverables:

- A zipped folder named Midterm_part2 submitted to D2L dropbox that contains:
    - Your source code files for both coding tasks 1 and 2.
    - A pdf file for Task 3, Task 4, and a screenshot showing your codes work as expected.
    - A README.txt file

- Available on GitHub inside the folder where you added me as a collaborator.

Total Points (40)

- Code runs and works as expected – Task 1: 15 points
- Code runs and works as expected – Task 2: 15 points
- Clear documentation – Task 3: 5 points
- Clear and detailed explanation – Task 4: 5 points
- Available on GitHub