Homework 2

Due: 11:59 PM, Feb 12, 2019
Total score: 100
Program language: C++
Submission: Text file and source file through git

You will look at how we OpenMP schedules loop iterations, and how you can optimize the way loop iterations are divided.

Q1. Make your own code to count the prime numbers. What is the count of the prime numbers when n = 300000?

Q2. Test the program with n=300000 and without OpenMP (serial). Then report the wall-clock time.

Q3. Set the threads number to be 2. Then, test the program with OpenMP without scheduling. Report the wall-clock time

Q4. Test the program with “static” scheduling and report the wall-clock time.

Q5. Test the program with “static with chunk size 100” and report the wall-clock time.

Q6. Test the program with “dynamic” scheduling and report the wall-clock time.

Q7. Test the program with “dynamic with chunk size 100” and report the wall-clock time.

Q8. Test the program with “guided” scheduling and report the wall-clock time.

Q9. Test the program more with different scheduling and chunk sizes. What is your best scenario to minimize the wall-clock time?

Q10. Report your conclusion from above benchmark tests.