CSE-745 2017 Home Assignment #1

Your task is to write an OpenMP version of the serial code ~syam/ces745/Assignment1/primes_count.c. This is a code to count the number of prime numbers within a given interval. All prime numbers can be expressed as 6*k-1 or 6*k+1, k being an integer. The code defines the range of k via the macro parameters KMIN and KMAX. The code should print the number of threads used. Use "default(none)" in parallel region(s). Check the parallel code correctness - it should produce the same result as the serial version, for the same range KMIN...KMAX. Try to make the parallel code as efficient as possible. Use the following OpenMP directives:

- parallel

- for schedule

- single

More detailed instructions are given in the header of the file primes_count.c. You are expected to achieve a speedup close to the number of cpu cores (threads) used. For example, on orca development nodes (orc-dev1, ..., orc-dev3, with 24 cores each), the speedup should be close to 24. **You should put comments inside your code explaining what you are doing.**In particular, explain why each variable was labelled as private, shared etc.

Marks will be taken off for code bugs (some or all the results are wrong), for insufficient commenting in the code, for poor performance. It must be your own work and you are responsible for adhering to the Senate Policy Statement on Academic Ethics.