Assignment 2 – CSE 436/536, Winter 2017

**Due: 11:55PM Feb 6th Wednesday, 2017**

**OpenMP Parallelization for Jacobi**

In this assignment, you will implement the OpenMP version of Jacobi iterative method (<https://en.wikipedia.org/wiki/Jacobi_method>). The sequential version and the program skeleton are already given in the jacobi.c file. You should apply optimization techniques as aggressively as possible for the optimal performance you can achieve.

**Submission:** Your submission should include two files: 1) The source file that contains your implementations and 2) a max 4-page report. The report should include:

1. Short description on how you implement the jacobi\_omp function.
2. Performance report using figures when running with 512x512 sizes with 1, 2, 4 and 8 threads. Figure 1 report the execution times in ms and Figure 2 report the speedup. Speedup is measured as the ratio of sequential execution time (1 thread) to the parallel execution time (2, 4, 8 threads).
3. While the development can be done from your laptop or any other computers, the results in the report should be collected from the machine listed from <http://cto.secs.oakland.edu/docs/pdf/linuxServers.pdf> , and let me know if you need help to access (you need VPN to access those machine from home, check <http://secs.oakland.edu/docs/pdf/vpn.pdf> ). Please indicate in your report, which machine you use. Please be noted that the machine is shared resource, overloaded use of the machine the last day of the machine may cause incorrect performance results.
4. Explanation of the performance results shown in your figures and draw meaningful conclusions.

**Grading:**

**Functions implementations: 60 points**

**Report: 40 points.**

**For non-compliable code, you only receive max 60% of function implementations points. For compliable, but with execution errors and incorrectness, you receive max 70% of function implementation points.**

Assignment policy:

Programming assignments are to be done individually. You may discuss assignments with others, but you must code your own solutions and submit them with a write-up in your own words. Indicate clearly the name(s) of student(s) you collaborated with, if any. Although homework assignments will not be pledged, per se, the submitted solutions must be your work and not copied from other students' assignments or other sources.

You may not transmit or receive code from anyone in the class in any way--visually (by showing someone your code), electronically (by emailing, posting, or otherwise sending someone your code), verbally (by reading your code to someone), or in any other way.

You may not collaborate with people who are not your classmates, TAs, or instructor in any way. For example, you may not post questions to programming forums.

You may search the web and use any information that you find. However, you cannot take more than two lines of code from an external resource and actually include it in one of your assignments. Changing variable names or rewriting code you find does not void the "two line rule."

Any violations of these rules will be reported to the honor council. Check the syllabus for the late policy and academic conduct.