CX 4010 / CSE 6010 Assignment 4

Due Dates:

- Discussion of proposals: in class, Monday November 7, 2016
- Proposal due: 11:55 PM, Friday, November 11, 2016
- Presentation: Week of November 28 and December 5, 2016
- Final Report: 11:55 PM, Monday December 5, 2016
- No late submissions will be accepted
- All deliverables should be a joint effort. Only one student in each team should submit materials on t-square on behalf of the entire team.

For this assignment you will work in teams of two or three students each on a project involving a computational problem of your choosing. The scope of the project should be at least as large as the second or third programming assignment. The project must involve developing software in the C programming language, and exercising this software to perform a study based on the results produced by the code, and/or to measure its performance. We encourage you to consider developing a parallel code to complete your project, however, it is not mandatory that you do a project involving parallel computing.

We will *not* assign teams; rather you should identify another student (or two) to work together on your team. The class session on November 7 will be used for students to briefly (in one or two minutes) present ideas for a project, and to help identify team members. If you have a project idea, you should plan to present it on that date in order to verify its suitability for the class. Similarly, if you are looking for a team to join, this is an opportunity to find a suitable project.

Each individual in the team must develop code. For this purpose, each team must decompose the project into distinct components, with each component including a software development task. The interface and tasking for each component must be explicitly defined. The parts of the project may be integrated by defining an application program interface (e.g., by creating header files that define the interface) or by defining a file format for data passed between the two components. Each component should be something that can be tested separately to demonstrate it functions correctly even if the other component is not functional.

You are free to use existing software or other resources you may encounter in defining your project, however, use of such software must be reported in the documentation you turn in for the project. It is expected that all projects will involve some additional software development beyond these other resources you are using.

1. Project Proposal

The project proposal should be comparable in detail to the write up for assignments 2 and 3. It should include the following information:

(1) name of the project or software you will develop,
(2) names of members of your team,
(3) a brief description of the goals of the project and questions that will be examined,
(4) a description of how the project will be divided among team members, details of each component, and the interface (header files or file formats) between them.

Include references to the literature, as appropriate. The intention of the proposal is to give us sufficient information in order to assess if the project is suitable for the course, especially in terms of scope and complexity, and for you to report progress in scoping out the project. The proposal will form a portion of your grade for the project.

2. Project Presentation

Each team will give a brief oral presentation to the class describing their project. Each person on the team must present some aspect of the project. The presentation should be organized as a single presentation given by the members of the team, not two or three separate presentations.

3. Final Report

The final report represents the complete documentation for the project. You should turn in:

- A report describing the results from your project. You may reuse material from the project proposal for the final report.
- All source code, data files, etc. developed and used in the project.
- The materials (e.g., powerpoint slides) used in your project presentation.

4. Final Comments

Be careful to scope the project to something that can be completed on time! Please consult with the TA or class instructor if you are uncertain if your project has a suitable scope. Good luck.