

PCSE Project Report Single-column (preferred) or 2-column format is fine, 10-12pt font.

Due Date: Last day of class

Instructions

While you are probably more interested in the science and engineering results from applying parallel application design and developing code for your research, the PCSE course is primarily concerned with the adaptation of parallel techniques/methods in solving your problems. Hence you should focus on the computational aspects of your project in your Report.

The report should be 4 to 6 pages in length. The Report should contain 5 Sections: Abstract, Intro and Objective, Implementation, and Results, Summary:

- 1.) The Abstract should excite and encourage the reader to continue reading. Summarize the big picture, the general benefits of your work, and what you accomplished (algorithm development/adaptation/adoptions/discoveries, etc.). This might be very similar to your Abstract you submitted for approval, but with results. (For those who are not reporting on work involved with a research project, develop ideas about understanding/characterizing/efficiently utilizing the computational area you are investigating.)
 - 2.) The Introduction and Objective should give enough details of your research/study/experiment, so that we will understand what you are trying to do computationally. (Don't go overboard with this.) It should include a development of the Methodology to accomplish the objective at a level for a scientist or engineer that is not an expert in your field of science/engineering.
 - 3.) Explain the application and design of your computational techniques, and the experiments and/or simulations you used to accomplish your objective.
 - 4.) Present your results. Include computational information that is important in obtaining your results; for example, computational efficiencies and scaling, load balancing, complexity reduction ($\sim O(n)$), IO efficiency, etc.
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General Aspects of Report

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- Projects are about the parallel aspects of a program.
 - The goal of the project should be to enhance or create parallelism in an algorithm.
 - Analysis of the performance should reflect the benefits of the implementation. (The outcome should be a shorter execution time, and scalability should be used to show the broad scope of parallel executions.)
 - How you achieved the parallel performance should be a significant part of your report.
 - Understanding why algorithms are not successful is also important because it imparts an "experience" others should know about.
 - Serial optimization is not important, but because it reduces the time across all tasks/threads it does contribute in a trivial way to parallel performance.