Project
CS 5350 Computer networks

Grade: 15 points.

- This is a group project. Each group will have upto 3 members. You may have the same group as for the topic presentation

Due Date: 05/10 11:59PM on Blackboard

PROJECT DESCRIPTION

1. [15pts] Design and implement parallel algorithms for a Sudoku solver.

- **Problem statement**: Give an incomplete sudoku board, the parallel algorithms should provide a solution within finite time.

- You will develop the following algorithms to solve a given sudoku board
  a) A brute force algorithm [A]: This algorithm will look at all possible combinations for the Sudoku board, and identify one possible solution.
  b) Efficient algorithm [B]: You will conduct a study to see if there is any existing algorithms or heuristics that have been developed to solve Sudoku boards more efficiently than the brute force approach. For example. see the Crook's algorithm. You will select one such algorithm, and design and implement the parallel version.
- You may use either MPI or OpenMP or a combination of both to implement the algorithms

- You will conduct performance comparison of the serial and parallel versions of algorithms A and B using appropriate using both theoretical and experimental analysis. You will utilize appropriate performance metrics.

2. Deliverables:

All submissions, unless otherwise specified, will be done through Blackboard using the link for "Project"

Teaming information
Deadline: April. 10th
You will form a team (up to 3 members). One of the team members will email the instructor with the teaming information and a team name by April 10th. You may have the same group as for the topic presentation

Initial Report

Deadline: April. 24th

- You will send an initial report on your plan for implementing the parallel algorithms. This should include the specific algorithm that you are using and your plans (pseudocode, performance metrics, experiment plan, etc.) for parallelizing it. This report be in the form of a ppt file with 7 slides at the most.
- Each member of the team will submit the slides (same copy) on blackboard using the link for initial presentation under the "Project" folder.
- Non submission will lead to a reduction of 3 pts from the final score.

Final Submission and presentation

Deadline for submission: 05/10 11:59 PM

- A PowerPoint file that provides a description of your design, analysis. You may use flowcharts, UML etc. to provide details of your implementation. You will also provide the tasks performed by each team member.
- The source code files.
- The compiled files
- Each member of the team will submit the slides (same copy) on blackboard using the link for "final submission" under the "Project" folder.

Each team will schedule a presentation with the instructor (May 11 - 15). Your presentation will last about 20 minutes. The instructor will email you to set up the presentations.

Anyone who misses the final presentation will not receive a grade for the project.