CS599: High Performance Computing

Assignment 1: MPI Communication

Due: See BBLearn

Preliminaries

You are expected to do your own work on all homework assignments. You may (and are encouraged to) engage in discussions with your classmates regarding the assignments, but specific details of a solution, including the solution itself, must always be your own work. See the academic dishonesty policy in the course syllabus.

Submission Instructions

You should turn in an electronic archive (.zip, .tar., .tgz, etc.). The archive must contain a single top-level directory called CS599_aX_NAME, where "NAME" is your NAU username and "X" is the assignment number (e.g., CS599_a1_mg1234). Inside that directory you should have all your code (no binaries and other compiled code) and requested files, named exactly as specified in the questions below. In the event that I cannot compile your code, you may (or may not) receive an e-mail from me shortly after the assignment deadline. This depends on the nature of the compilation errors. If you do not promptly reply to the e-mail then you may receive a 0 on some of the programming components of the assignment. Because I want to avoid compilation problems, it is crucial that you use the software described in Assignment 0. Assignments need to be turned in via BBLearn.

Turn in a single pdf document that outlines the results of each question. For instance, screenshots that show you achieved the desired program output and a brief text explanation. If you were not able to solve a problem, please provide a brief write up (and screenshots as appropriate) that describes what you tried and why you think it does not work (or why you think it should work). You must provide this brief write up for each programming question in the assignment.

This pdf should be independent of the source code archive, but feel free to include a copy in the top level of that archive as well. Let me know if there are problems uploading multiple files to BBLearn.

MPI Communication

The instructions for this assignment can be found in Module 1 at the following link: http://jan.ucc.nau.edu/mg2745/pedagogic_modules/courses/hpcdataintensive/.

- Complete Questions 1–5 (in bold face) in the pedagogic module.
- You will submit source code corresponding to the 5 programming activities using the following names: `pingpong_act1_NAME.c`, `ring_act2_NAME.c`, `ring_act3_NAME.c`, `random_act4_NAME.c`, and `random_act5_NAME.c`.
- You will submit all job scripts you used that correspond to the programming activities above (excluding your local execution of ping-pong).
- You can program all of the activities on your local machine and then run them on Monsoon afterwards.

Grading

- Questions 1–5 [2.5 points (0.5 points for each question)]
- Correct and robust source code [7.5 points (1.5 per program)]