CPSC 474 Project 2: Programming using MPI

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40 points

Introduction

For this project you need to choose a topic covered in class or similar to the topics listed here and design an algorithm that uses MPI commands to solve a problem. You will describe the algorithm using clear pseudocode and implement your algorithms in C/C++/Java, compile, test it, and submit BOTH the report (as a PDF file) and the programs. We do not care about the efficiency of the algorithms **but each run of a program must terminate within 60 minutes**.

What to do

1. Add your group members' names to README.md.

2. Implement your algorithm in C/C++/Java.

3. Compile and execute the program.

4. Write a clear pseudocode for the algorithm, describe what parameters are needed to execute each program, include snapshots from at least one execution, and submit it as a PDF report. Submit your PDF by committing it to your GitHub repository along with your code. Your report should include the following:

   a.   Your names, CSUF-supplied email address(es), and an indication that the submission is for project 2.
   b.   A full-screen screenshot with your group member names shown clearly. One way to make your names appear in Atom is to simply open your README.md.
   c.   The pseudocode of the algorithm.
   d.   A brief description on how to run the code.
   e.   Snapshots of code executed at least once. Alternatively one can create a file with the output of the program for an input value and submit it together with the program. Note, the output can be redirected to a file (for easy printing). For example, the following command line will create an output file in Linux-based operating system called a1out.txt by re-directing the output from the screen (display) to the file a1out.txt:
       `K:\cs474> a.out > a1out.txt`

Grading rubric

The total grade is 40 points. Your grade will be comprised of three parts, Form, Function, and Report:

- Function refers to whether your code works properly (30 points).
- Form refers to the design, organization, and presentation of your code. The instructor will read your code and evaluate these aspects of your submission (3 points):
  - README.md completed clearly (1 points)
  - Style (whitespace, variable names, comments, helper functions, etc.) (2 points)
- Report (7 points) divided as follows:
  - Summary of report document (2 points)

- Pseudocode of the chosen algorithm (2 points)
- Three screenshots: one for the group members and two snapshots of code executing for some two distinct values of N (1 point each, total 3 points)

Obtaining and Submitting Code

This document explains how to obtain and submit your work:
   [GitHub Education / Tuffix Instructions](#)

Here is the invitation link for this project:

        https://classroom.github.com/a/tJhxYFx2