Stencil Code in MPI: Instructor Guide

1. (ppt) Slides Contain:
    a. Learning Objectives
    b. Explanation of the problem Sequential
    c. Explanation of how to parallelize the problem
2. Code is written in C
    a. How to compile and run the code is explained directly on the slides with the command line compiler instruction
    b. The environment used :CPU type, GPU type, OS , Compiler version (gcc, CUDA, MPI, OpenMP) is also on the slides
3. (mp4) Video Lecture:
    a. Narration of the slides
4. Code:
    a. Implementation of the example explained in the slides
    b. Code available for download
5. We do provide suggestions for students' questions and assessments, instructors are encouraged to use them or to design their own.
6. Type of rubric for the sample assessment.

<table>
<tr><td>Code Compilation</td><td>If code compiles receive 5 pts</td><td colspan="2">0 points no more grading</td></tr>
<tr><td>Code Organization</td><td>Code well commented , indented and readable 10 pts</td><td>Some comments, indentation and readable
5 points</td><td>No comments
No readable
0 points</td></tr>
<tr><td>Code Running no warnings</td><td colspan="3">10 points</td></tr>
<tr><td>Code Produces correct Result</td><td colspan="3">If yes 60 points</td></tr>
<tr><td>Execution time measures provided</td><td colspan="3">15</td></tr>
</table>

7. Note of code : to simplify the code
   myRows=ROWS/numProcess should return an integer, so ROWS should be divisible by numProcess

Lesson 5.4: Common Pitfalls for Students and Instructors

- Parallelizing the outer loop the one that controls iterations
- Sending/receiving the last and first column backward