

**High-Performance Computing Lab**

Student: FULL NAME

**Institute of Computing**

Discussed with: FULL NAME

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**Solution for Project 4**

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**HPC Lab — Submission Instructions**

(Please, notice that following instructions are mandatory:  
submissions that don't comply with, won't be considered)

- Assignments must be submitted to iCorsi (i.e. in electronic format).
- Provide sources (e.g. C/C++ files, Matlab). If you are using libraries, please add them in the file. Sources must be organized in directories called:  
*Project\_number\_lastname\_firstname*  
and the file must be called:  
*project\_number\_lastname\_firstname.zip*  
*project\_number\_lastname\_firstname.pdf*
- The TAs will grade your project by reviewing your project write-up, and looking at the implementation you attempted, and benchmarking your code's performance.
- You are allowed to discuss all questions with anyone you like; however: (i) your submission must list anyone you discussed problems with and (ii) you must write up your submission independently.

- 1. Task: Ring maximum using MPI [10 Points]**
- 2. Task: Ghost cells exchange between neighboring processes [15 Points]**
- 3. Task: Parallelizing the Mandelbrot set using MPI [20 Points]**
- 4. Task: Parallel matrix-vector multiplication and the power method [40 Points]**
- 5. Task: Quality of the Report [15 Points]**