Student: FULL NAME   Discussed with: FULL NAME

Solution for Project 8   Due date: Dec 20, 2020, 12pm (midnight)

Project 8 – Numerical Mathematical Software for Extreme-Scale Science and Interactive Supercomputing with JupyterLab

1. Scientific Mathematical HPC Software Frameworks - The Poisson Equation [40 points]

2. Interactive Supercomputing using Jupyter Notebook [10 points]

3. Jupyter Notebook - Parallel PDE-Constrained Optimization [50 points]

Additional notes and submission details

Collect all your source code, results and figures in a Jupyter notebook. Be sure it contains also your name and summary of your answers, results and observations for all exercises. When you are satisfied with you notebook, upload it to together with the PDF version (export the notebook as

Table 1: Wall-clock time (in seconds) and speedup (in brackets) using multiple cores for solving the Poisson PDE problem (adjust cores count according to machined you used to solve the problem).

Problem	N	Number cores			
		1	2	4	8
Poisson	100^2				
Poisson	500^2				
Poisson	1000^2				

Table 2: Wall-clock time (in seconds) and speedup (in brackets) using multiple cores for solving the PDE-constrained optimization problem (adjust cores count according to machined you used to solve the problem).

Problem	N	Number of cores			
		1	2	4	8
Inverse Poisson	100^2				
Inverse Poisson	500^2				
Inverse Poisson	1000^2				

a PDF file) to iCorsi . Submit the source code files (together with your used `Makefile`) in an archive file (tar, zip, etc.), and summarize your results and observations for all exercises by writing an extended Latex report. Use the Latex template provided on the webpage and upload the Latex summary as a PDF to iCorsi .

- Your submission should be a gzipped tar archive, formatted like project_number_lastname_firstname.zip or project_number_lastname_firstname.tgz. It should contain
  - all the source codes of your solutions;
  - your write-up with your name project_number_lastname_firstname.pdf.
- Submit your .zip/.tgz through iCorsi ..