MA453/553 – Homework/Lab 1.

Performance Gain with NumPy

Due: 10/04/2024

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1. Run `heat2d.py`, the pure Python code for 2D heat equation with `cProfile, line_profiler, memory_profiler` and find out the critical sections of the code. Then rewrite the code using NumPy and compare the performance of the code with and without NumPy. Also compare the Fortran code posted at Canvas. Use `graphics = False` while timing and profiling the codes.

2. Prepare a small report (it need not be fancy!) showing your results, zip all the files, name it "yourname_ma553_lab1.zip" and submit it through Canvas.