

High Performance Computing

Homework assignment 1.2

Luca Venturi

February 15, 2017

In the next page I reported the `C` script of the program I wrote. Here are the run times I got taking $N = 1000$ and $N = 100,000$ (and maximum number of iterations $M = 1000$). Running on a CIMS machine, I got:

· Jacobi

N	-00	-03
1000	0.0311	0.0111
100,000	1.8277	0.6680

· Gauss-Seidel

N	-00	-03
1000	0.0381	0.0210
100,000	2.1496	1.2982

Running on my machine, I got:

· Jacobi

N	-00	-03
1000	0.0408	0.0151
100,000	2.5506	0.8218

· Gauss-Seidel

N	-00	-03
1000	0.0344	0.0354
100,000	3.4644	2.1768

My machine (PC) has a processor **Intel-Core i3-4010U CPU @ 1.70 GHz** with 2 cores and a 4 GB total RAM. As Operating System I am using Linux Ubuntu 16.04 (64-bit).