

Programming Assignment 4

ECE 759, Prof. TW Huang

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GitHub link to programming tasks:

<https://github.com/phantom3012/repo759/tree/implementation/HW04>

1 Question 1

1.a

Installed the matplotlib library using the command `pip install matplotlib`.

1.b

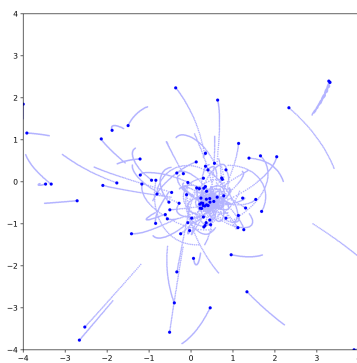


Figure 1: Plot of the N-body simulation as computed by `nbody.py`

2 Question 2

2.a

task2.cpp can be found at <https://github.com/phantom3012/repo759/blob/implementation/HW04/HW04/task2.cpp>

Plot of the positions is shown below:

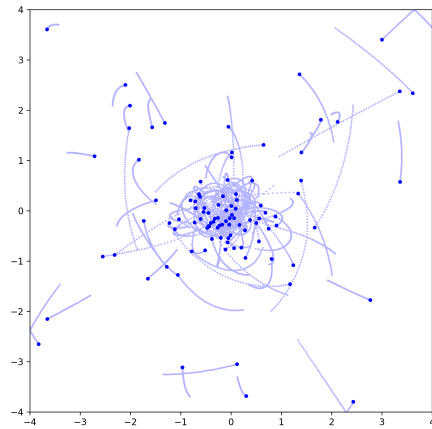


Figure 2: Plot of the positions of the particles as generated by `plot_positions.py`

3 Question 3

3.a

task 3.cpp can be found at <https://github.com/phantom3012/repo759/blob/implementation/HW04/HW04/task3.cpp>

4 Question 4

4.a

task3.cpp implemented with dynamic scheduling can be found at https://github.com/phantom3012/repo759/blob/implementation/HW04/HW04/task4_dynamic.cpp

task3.cpp implemented with guided scheduling can be found at https://github.com/phantom3012/repo759/blob/implementation/HW04/HW04/task4_guided.cpp

task3.cpp implemented with static scheduling can be found at https://github.com/phantom3012/repo759/blob/implementation/HW04/HW04/task4_static.cpp

4.b

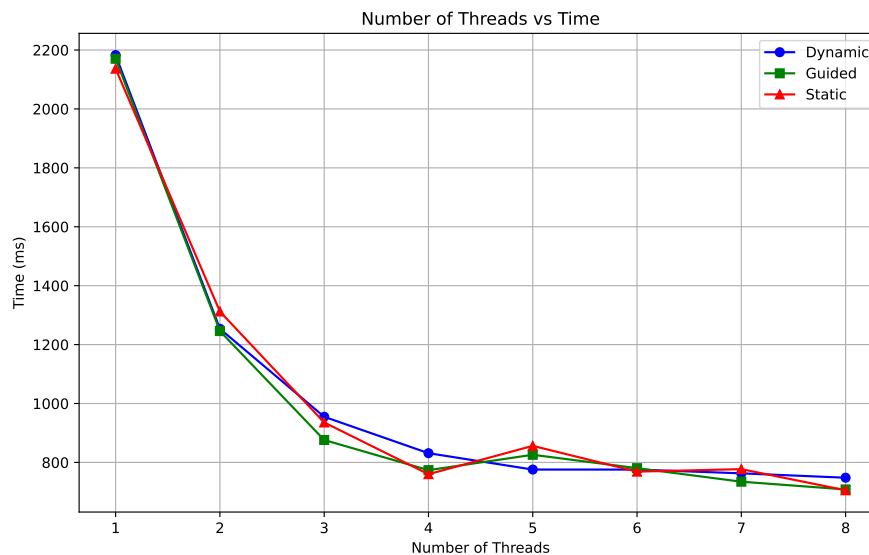


Figure 3: Time taken vs. Number of threads for different scheduling types