Assignment 4 - N-body simulation

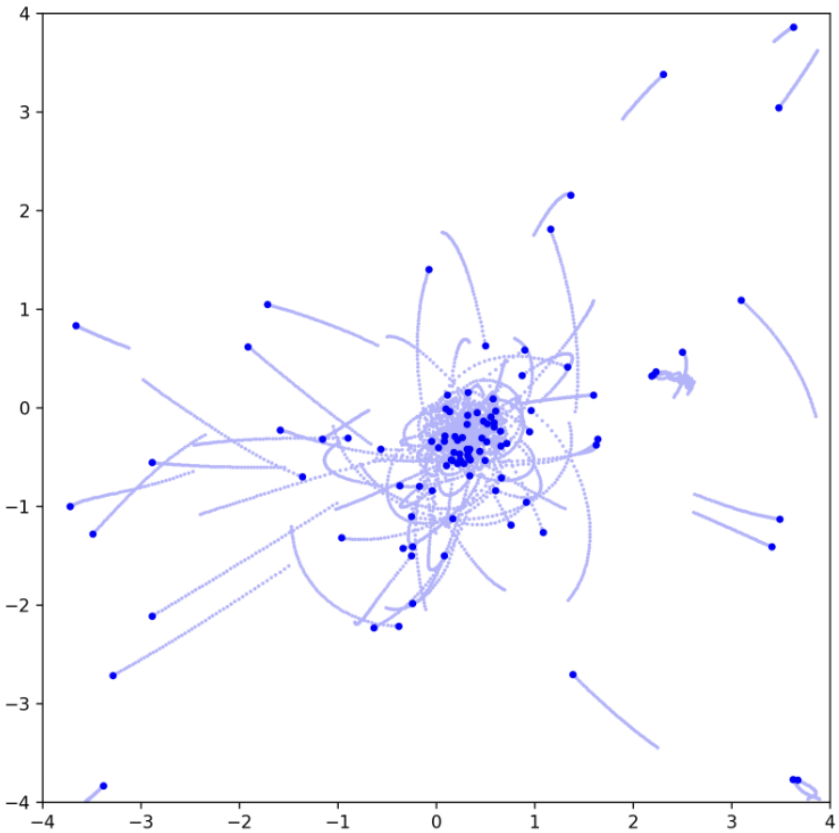
GitHub: https://github.com/yosunlu/repo759/tree/main/HW04

Problem 1:

Please review the introduction to the N-body problem above. Ensure that you understand both the algorithm and the Python code.

a. Install Python library numpy and matplotlib: python3 -m pip install numpy matplotlib

b. Run the nbody.py script either on your personal machine or on the Euler compute node. If you run it locally, you will see an animation of the N-body simulation. At the end of the simulation, the code will automatically save a plot. Rename this plot as task1.png and submit it to Canvas.



Problem 4:

1. a) In task3.cpp, try the following scheduling policies: static, dynamic, and guided.
2. b) On Euler, via Slurm do the following:
   For each scheduling policy, run task3 with the following parameters:

   • number of particles = 100 or larger • simulation end time = 100 or larger • num threads = 1,2,⋯ ,8