High Performance Programming – Assignment 3
Group 9

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1 Introduction

In this assignment, we created and serially optimized a program, galsim.c, that simulates motions of n particles inside a galaxy. To simulate the galaxy, we need to solve the N-body problem. We did so in two dimensions using a set of governing equations and using the symplectic Euler method. Each particle in the galaxy has a set of starting attributes: position, velocity, mass, and brightness. This data was provided beforehand and was used as input to our program. Our program is also able to visualize the evolution of the galaxy by using the X Window System (X11).

2 Implementation

3 Optimization

4 Result

5 Conclusion