Hallway Traffic Simulator

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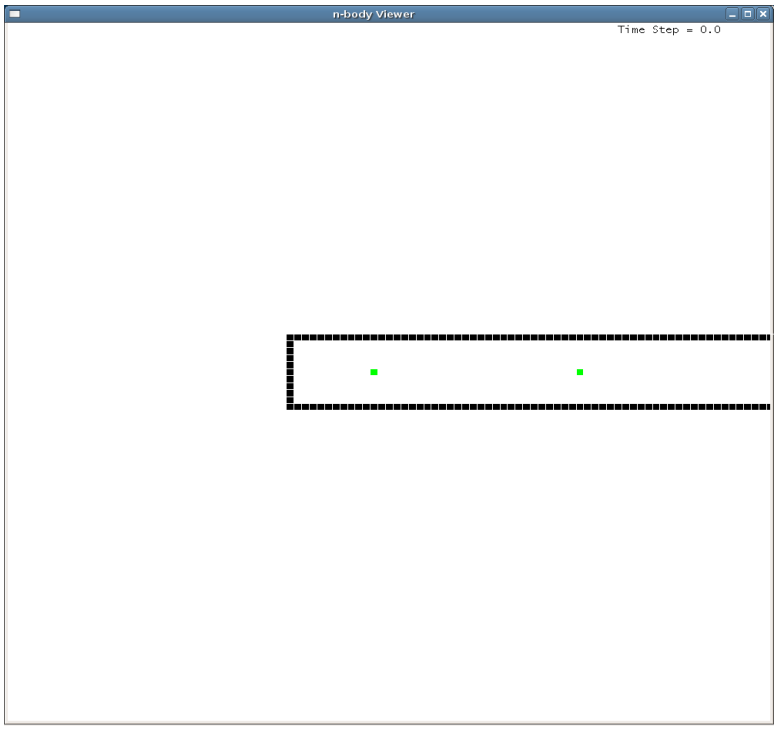
Introduction

Previous studies in the area of traffic simulation are plentiful, but none have been done to optimize hallway designs. This project is intended to simulate the movements of a large student body through various hallway layouts to find the design that maximizes the efficiency of traffic flow.



A heavily simplified traffic simulation

Procedures

The bulk of the project is a Fortran program that keeps track of each individual student, calculates their positions, and writes the results to a text file. This is then read by the Java viewer, which displays the simulation for the user to watch. Above right, a very simple traffic problem is shown: Two students must find their way around the walls and each other to reach their destinations on opposite sides of the screen.

Future Additions

The above screenshot is of a very early version of the program. Later it will involve much larger numbers of students (2000+), and they will act in more realistic ways. The final project will include more advanced pathfinding algorithms, complex environments, and realistic student actions such as course schedules, stopping to talk with friends, and other common sources of traffic.