

Modeling Virus Spread in a Modern Environment

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Abstract

The goal of this project is to explore the development of a real-time situation of the spreading of a virus in a modern-day environment, such as the TJ building. This project will also explore various pathing AIs and their applications to a real-time situation such as people moving through a building. The final goal of this project is to explore the results of the simulation and the effects of various building changes on the spread of a virus.

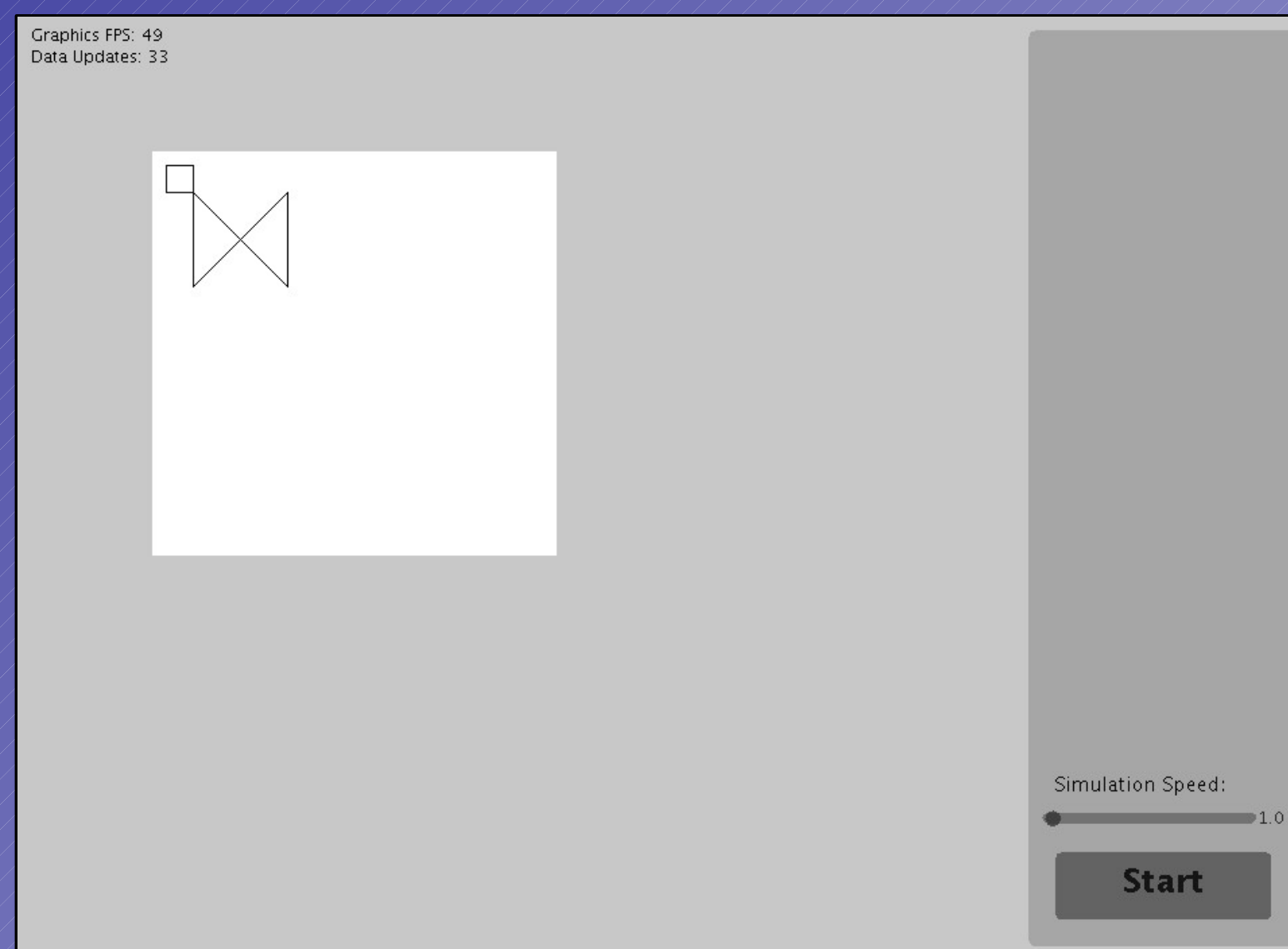


Fig. 1: The main simulation screen

Background and Introduction

-Languages-

This project is written Java, Java2D and Python. These languages are used for the base system, display, and pathing AI, respectively.

-Pathing-

This project uses *insert final pathing AI here* as the main pathing AI for the people moving throughout the building.

-The virus-

The basic idea behind the spread of a virus is to have an airborne virus where the chance of infection increases with distance. This simple formula for virus spreading is effective and easy to implement.

Discussion

The project is going to be a real-time simulation, where virtual people are going to be walking through hallways in a building. The buildings will be modeled after actual buildings such as the TJ building. As the people walk through the building, there will be a virus, starting in one or more people, spreading between the people. The closer an uninfected person is to an infected person, the higher chance the uninfected person has of being infected by the virus. The end result of the simulation will show the various concentrations of infection events in the different parts of the building.

Results and Conclusions

No results yet

I hope to get results linking various aspects of a building's design to the chance of a virus being spread.

So far, I have the main base of my project created. Maps display and the user interface is finished.