

TJHSST Senior Research Project Proposal: Hallway Traffic Simulator 2006-2007

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Abstract

This project is intended to spot flaws in school hallway design and find an ideal layout.

1 Introduction: program versions

1.1 1st Quarter

1.1.1 Program area 1

My primary goal for the first quarter will be to program an algorithm in fortran that will write basic movements of individuals to a text file. I will also write a viewer in java to read from the text file and display these movements in a GUI.

1.1.2 Program area 2

A secondary goal for first quarter is to conduct background research into previous studies in this area. My hope is that knowledge of similar projects will direct the development of my program so that my findings do not prove redundant.

1.2 2nd Quarter

1.2.1 Program area 1

Second quarter will be spent expanding the fortran algorithm to handle more students, different hallway designs, and more complex movements.

1.3 3rd Quarter

1.3.1 Program area 1

Most of this quarter will be devoted to improving the runtime of my java and fortran algorithms. The fact that the program must track the movement of several hundred individuals necessitates that the program's efficiency be optimized as much as possible.

1.3.2 Program area 2

If time allows, I will use the remainder of third quarter to create an algorithm in fortran to automatically vary certain settings such as hallway width, number of students, time between classes, etc. The program will then find the optimal configuration of hallways for each design.