Infection Spread Simulation Project - Project Requirements

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1 Objective

The primary goal of this project is to create a simulation that accurately portrays the spread of infection. Within the simulation, individuals will be generated, move throughout the environment, and face the possibility of infection within a specified radius of other infected individuals. Each person in the simulation will be assigned different statuses, such as healthy, infected, or isolated. Additionally, the project necessitates the development of a user interface (UI) to visually display the simulation in real-time.

2 Project Background

The project revolves around simulating the spread of an infection. It involves incorporating various statuses for individuals and providing a visual representation through a user interface.

3 Requirements

3.1 Functionalities

The project requires the implementation of several key functionalities. Firstly, it must simulate the generation and movement of people within the environment. The simulation must provide the opportunity to be stopped and continued at any time. Additionally, the simulation must incorporate the spread of infection within a specified radius. Furthermore, individuals must be assigned different statuses, such as healthy, infected, or isolated. Lastly, the project demands the development of a user interface for the real-time display of the simulation.

3.2 Performance Requirements

The project imposes specific performance requirements. It must ensure efficient processing of the simulation and provide either real-time or near-real-time representation of the spread of infection.

3.3 User-Friendly Interface

The user interface should be designed with a focus on user experience. This involves developing an intuitive UI for simulation display and providing clear documentation to guide users through the interface.

3.4 Compatibility

The project must ensure compatibility with different platforms for the user interface, catering to a diverse range of users and systems.

3.5 Maintenance

The design of the project should prioritize ease of maintenance for future updates, ensuring that the system can be readily adapted to incorporate new features or address issues.

3.6 Legal Requirements

To comply with legal standards, the project must adhere to licensing standards for the software used in its development.

4 Use Cases

The end-user envisions a simulation system that effectively represents the spread of infection, considering various individual statuses.

5   Interfaces

The project requires the development of a user interface specifically designed for the display of the simulation. The simulants need to be displayed in different colors according to their statuses. The UI should include the option to enter custom parameters and controls to start and stop the simulation. Furthermore, the UI should show the statuses with the amount of simulants that currently have that status.

6   Quality Requirements

The project's success hinges on the accurate representation of infection spread, meeting the predefined quality standard.

7   Timeline and Milestones

The project must be completed by March 2024, with specific milestones to track progress.

8   Risks and Assumptions

Potential risks include challenges in simulation accuracy, while assumptions are based on the expectation of stable system performance. There is also a risk of the simulation not being displayed in real time.

9   Approval

This document receives initial approval from Mrs Rose, and any subsequent changes require consultation.

10   Attachments

No attachments are available at the moment.