Kit Pollinger
COMSC 210
Mark Dietrich
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My Pseudocode Proposal

Projet Overview

My project creates will create the flow of traffic at a busy intersection for 25 minutes (Given for Requirement), with each minute represented as a single time interval. The simulation will capture real-time changes in congestion, providing insights into average wait times for vehicles, as well as the impact of random events like vehicle breakdowns or surges in traffic.

Implementation

I plan to use a std::map as the simulation will track data for different lanes at the intersection, with each map entry (keyed by lane name) containing an std::array of three std::lists to represent queues for cars, trucks, and motorcycles. Each vehicle will have an assigned entry time, and a function will calculate wait time based on whether the lane has a green light.

My Simulation will read initial data from a file, showing the number of vehicles in each lane and their types/Models. The tehicles are added to the map with random intervals, while the program calculates their waiting times and tracks movements.

Simulation Events:

The simulation will run for 25 time periods. Each interval will involve:

- Add new vehicles to each lane at random.
- Move vehicles forward if the traffic light is green.
- Simulate random events, such as vehicle breakdowns or increased traffic volume, which can temporarily affect traffic flow.

At the end of the simulation, a summary will display metrics like average wait times and the total number of vehicles processed.

GitHub Link:

https://github.com/Kitz2024/210-lab-29.git