Team 18

FlowLogic: Traffic Flow Simulator

Team Members:

1. Dominic DeLuca
2. Colin Lappin
3. Isaac Hallman
4. Dylan Mitchell

Problem Statement:

For urban planners and engineers looking to design new infrastructure or improve existing systems, predicting and visualizing traffic flow can be challenging. Current traffic flow simulation tools are either inaccessible, overly complex, or lack the flexibility to create fully customized layouts. Our traffic flow simulator addresses these challenges by offering an easy-to-use drag-and-drop interface for creating personalized layouts, along with detailed analyses of how traffic flows through these designs. This solution allows users to efficiently plan, visualize, and optimize traffic systems with ease. Our solution will differ from our competitors by being easy-to-use and flexible.

Project Objectives:

- Design an easy-to-use drag-and-drop 2D interface that allows users to create custom traffic layouts
- Create a system that simulates traffic through these systems and indicates where bottlenecks might be
- Provide the user with suggestions on how these bottlenecks can be improved

Stakeholders:

- Users: The user base would include civil engineers, urban planners, and any general traffic enthusiast.

- Developers: Dominic DeLuca, Isaac Hallman, Dylan Mitchell, and Colin Lappin
- Project Manager: Pratyush Das
- Project Owners: Dominic DeLuca, Isaac Hallman, Dylan Mitchell, and Colin Lappin

Project Deliverables:

- Desktop Application developed in Java
- Front end UI developed using JavaFX
- Back end simulation driven by Java class system
- Suggestions executed using Python scripts
- Save files that can be exchanged between users for efficient communication on team projects