

Sprint 1 Plan

Goal: Extend SUMO to implement a new car class and modify SUMO vehicle utilities.

Total points: 55

User Stories:

- 1. As a user, I want to be able to simulate rogue cars within a traffic simulation by adding a simple flag to my vehicle type definitions so that we can mimic unwanted network behavior within a real computer network. (14)**
 - a. Find where cars interact with stop lights within the source code. (2) (Ryan)
 - b. Implement rou.xml Vtype flag that changes vehicle behavior (to ignore stoplights). (5) (Ryan)
 - c. Implement alternative vehicle behavior software that is called when flag is detected. (7) (Ryan)
- 2. As a user, I want to be able to simulate and collect randomness in the current test program so that we can replicate similar network behavior. (16)**
 - a. Use the random python script to randomize traffic in an OSM Map (2) (Ryan, Harshaan and Alexis)
 - b. Instantiate a devices that collects vehicle information during a trip (7) (Alexis)
 - c. Create a framework for a new device to implement custom data (7) (Alexis)
- 3. As a developer, I want to be able to edit SUMO scripts to retrieve and show data from road traffic simulations so that we can locate the execution of events that we want to modify(7).**
 - a. Dissect the source code and find what components contribute to simulating vehicle interactions with street objects (7) (Ryan and Alexis)
- 4. As a developer, I want to be able to compare the expected trip times between a normal car and a modified rogue car so that we can detect network irregularities. (18)**
 - a. Implement a rogue car inside a simulation network (5) (Ryan)
 - b. Give all cars the same route to complete with an expected time (3) (Ryan)
 - c. Have the cars follow all the protocols assigned to them such as stopping at their designated lights (5) (Ryan)

- d. Have the rogue car bypass all designated protocols (5) (Ryan and Harshaan)