CP2406 TASK 2 /2021

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**User stories**

1. As a user, I want to customise the city, which the length of road. This includes the position of traffic lights that where to place.

The priority is high, and the estimate time is one day. It can be tested by changing the road map.

2. As a user, I wish to set the type and speed of vehicles. This includes when they come out from the beginning.

The priority is medium, and the estimated time is 4 hours. It can be tested by changing the speed of vehicles.

3. As a user, I hope to set the lasting time of traffic lights. It includes the duration of red lights and green lights of each traffic light.

The priority is low, and the estimated time is 2 hours. It can be tested by changing the durations of different lights last.

4. As a user, I wish to see the close relationship between traffic lights and vehicles. This includes how sensitive when the vehicles react when meet red lights or green lights.

The priority is high, and the estimated time is 12 hours. It can be tested by changing the traffic lights from red to green or green to red.

5. As a user , I want to run the program can access and control by myself. This includes I can start and stop the progress whenever I want.

The priority is medium, and the estimated time is 1 hour. It can be tested by running and stopping the program.

**Developer user stories**

1. As a developer, I wish to add pause function into the program beside stop the whole process.

This can prevent a restart and cause loss of data from previous process. The priority is medium, and the estimated time is 6 hours. It can test by changing the stop button to pause button.

2. As a developer, I wish to add more than a city in this program. This can include editing, saving and opening a saved city.

The priority is small, and the estimated time is 8 hours. It can be tested by trying to save and open a saved city file.

3. As a developer, I hope the system has constant certain distance and gap between two vehicles. This includes the system will automatically stop insert vehicles if a lane is full.

The priority is medium, and the estimated time is 6 hours. It can be tested by keep setting a traffic light of a lane into red light and observing the gap between two vehicles.

4. As a developer, I want the direction of each vehicles is randomly straight driving or turning both directions. This includes a vehicle able to turn right or left when it has a choice.

The priority is high, and the estimated time is 3 hours. It can be tested by observing whether vehicles turn or just straight forward.

**UML diagram**

Github link: <https://github.com/jqt011231/cp2406-assignment2-2021>