Daily Log

Tuesday January 21

I researched ways to import street data from the real world. I tested 0%, 10%, 20%, and 30% of users using DTD on my 'basic' map. I found that the average travel time was reduced by 0%, 7.6%, 11%, and 12%, respectively.

Thursday January 23

I researched ways to import street data from the real world. I tested 40%, 50%, 60%, and 70% of users using DTD on my 'basic' map. I found that the average travel time was reduced by 16%, 26%, 7%, and 7%, respectively.

Timeline

Date		Goal	Met
1/6/20 - 1/12/20		Make *Event* only be exchanged between *Cars* that are directly within the communication range.	Yes
1/13/20 - 1/19/20		Reduce execution time and output data by not generating *Events* in certain circumstances	Yes
1/20/20 - 1/27/20		Test varying percentages of DTD population	No, I was able to test certain percentages, but not all of them yet.
1/28/20 - 2/2/20		Continue to test the varying percentages of DTD population and research ways to import real street data	
2/3/20 - 2/9/20		Visualize input data on web server without running the program	

Reflection

This week, I tested different percentages of DTD population. I found that the DTD navigation system helped reduce the average travel time up to 50% of the population using DTD. At high percetanges of DTD, the travel time was better than no DTD, but it actually increased compared to mid percentages of DTD. This may be caused by clusters of *Cars* on the same *Edge* picking the same path, and consequently causing increased amounts of traffic when they enter the same *Edge*. I met my goal for this week, so I will continue with the currently scheduled goals. This week, I also began reading into how to import street data and I came across the OpenStreetMap API. In the future, I would like to import real streets from OpenStreetMap. Next week, I need to finish testing the effect of higher percentages of DTD cars on average travel time.