Estimates/Projections

Bryan Ward

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My project could easily be divided into three different subprojects which could be done one quarter at a time. The first part would be to create a model of a system of roads a lights and to make a generic map to be able to test and visualize work later on with. The second part would be to design and build the data structures that would model the outlined functionality. The last part would be to write the algorithm to take advantage of the work done in the second quarter to optimize traffic flow to allow commuters to get to their destination more quickly.

For the first quarter, I may be able to get some parts of the visualization and mapping from projects online such as the ones from netlogo, or from other students in the past few years. The bigger part of the first quarter may be to learn NetLogo and/or whatever framework I use.

The final goal of the second part is to make a data structure in which there are a variable number of cars, all of which have their own information, such as their location and destination. This lends itself to an object oriented language such as java so that the cars can be objects. Part of the second part would also be to allow these objects to intercommunicate.

The last part of the project would be to write the algorithm to route cars based on the data that they can retrieve from other cars. For example, if there are 1000 cars that are trying to go to NY from NC, then they would take I95 and then have the option of going on the inner loop or outer loop of 495, or taking 395 into the city. Ideally the cars would be distributed evenly among these different routes, therefor decreasing the travel time for everyone. Another function that I would like to include, is having traffic lights detect any nearby cars and adjust the lights timing accordingly.