Braden Lance

The project that my group has planned for our Capstone project will be to create bus routes for public schools to use. The plan is to take all the bus stops required for the bus route and put them into a system of points. With these bus stops, we will use the GIS software to build a search tree to find the shortest route possible for the bus. We would have a route for every bus in the school district and plan a route for each. The system would allow for easily adding new buses and stops when needed. There would also be functionality in place to update routes on a one-time basis if the need arose.

There were several college courses that we, as a group, have taken that would incorporate themselves into this project. Data Structures (CS 2028C) is one that would be integral, as utilizing tree structures will be at the core of this project. Database Design and Development (CS 4092) is another important class, as we will be using a database to store stops and routes. Design and Analysis of Algorithms (CS 4071) and A.I Principles (CS 4033) will both be useful in relation to the algorithmic side of this project. Creating an algorithm to determine the best path is the point of this project.

My co-op learnings will be able to contribute to this project on the front-end side of things. I rarely worked with databases or weighted paths during my time at either CDO Technologies or ITI, but one thing I did work with in both experiences was front-end application development. While front-end development was not a heavy focus of my time at ITI, it was prevalent during my time at CDO. At CDO, I developed a web application for commercial use, and a big part of that was dealing with the front-end side of things. This experience will be helpful in developing the front end of this application.

The motivation that I have for this project is less specific and more general. When thinking of my Capstone project, I did not have anything in mind. I only wanted a project that could be a learning experience, and something that could be a challenge for me. Timon approached our group with this project idea, and it sounded perfectly fine for what little specifications I had in mind. Timon brought up his own motivations, which involved his father’s experiences with transportation routes, and their insufficiencies. Given that this project could be helpful is another reason for me to be motivated.

Our goal for this project is to have a working version of the application that can build routes and store the necessary addresses. We still have some research to do in order to determine what exactly will be required for making this work. Once we have that figured out, each member of the group can work on the part of the project that would best be suited for them. We plan on having a deliverable containing the end result. This document will include the implemented functionality, as well as any possible functionalities that could be added later to improve the product.