Raymond Gee Capstone Assessment

For my groups senior design project, we plan on using a device that monitors a plants water level to send information to a user. This will involve our project needing an application to receive the data. Once the app receives the data it will use a data table to determine how much the plant should be watered and sent that information to the user. From my academic perspective this will require coding for creating a mobile or desktop application for the user to user. Also, we plan on using a sql database table to store the information, so we will need to use sql to create this. My focus will be integrating the sql database table into our project.

During my experience while in college, I've taken courses that were required for a computer science major. Throughout the years I've learned about different coding languages such as python, c++, matlab, java, and sql. The courses that taught me these languages were Engineering Models 1 (ENED1090) and 2 (ENED 1091), Computer Science 1 (CS1021C), Python Programming (CS2021), and Database Design (CS4092). Other courses taught me the fundamentals for computer science, such as Data Structures (CS2028C) and Discrete Structures (CS2071), which taught me about storing data, and D&A Algorithms (CS4071) and AI: Principles and Applications (CS4033), which taught me about algorithms and what to use to search through data. Before learning about these I had to have a basic understanding of math by taking Linear Algebra (MATH2076) and Calculus 1 (MATH1061) and 2 (MATH1062). Taking all of these courses have build the foundations of my understanding the computer science world. These courses would also help me during my co-op experience.

During my co-op I worked at Fortech LLC for all 5 co-op semesters. I worked as a junior developer and I was able to learn more things about coding through my senior developers and my supervisor. The main coding languages I would use are javascript, C#, CSS/HTML, and SQL to create small web and desktop applications and perform bug fixes. I was able to implement the fundamentals that I've learned from my computer science courses to create these applications. I was also able to develop my communications skills by communicating progress and issues to my supervisor and asking senior developers for help or advice on projects that I was working on. Through my co-op experience I was able to learn what was expected from me for a person working in the computer science industry.

For my senior design project I am excited about what we are trying to make because I will be able to implement some things that I've learned in my co-op into the project. Our project will be using a sql database to store data and send that information to the user by using a raspberry pi. I plan to use sqlite3 to store a local database into the raspberry pi so it doesn't have to communicate to a database server. For communicating with the user and the database I plan to use c#. I plan to use a library called dapper that can allow me to store sql procedures in the project for the c# code to call and get the data as an object. These are the plans that I have for helping my team in the senior design project.

The expected results of this project will be for our project to be able to use a raspberry pi to receive data from a plant water sensor and send it to the user. We want to create an application,

either a desktop application or mobile application, for a user interface. I will know when we are done when we have implemented these components. I will evaluate myself based on being able to implement a local database that is able to send data to the user. I will have done a good job if I can get the local database working on the raspberry pi and I will be done if I can get it to communicate with the user. Overall I think my teams project has an achievable goal and implements a lot of components in computer science.