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CSC 415-02
Dr. Pulimood
OSS Individual Project Proposal and Specifications

I chose option 1 because I would like to get more experience working on code that already exists. This is much more common than starting from scratch when working in the industry, and due to the timeframe of the project, it seems like a much more reasonable task to work with something that is already established.

I chose SERVD to work on because I really appreciated the way that they made volunteering so much easier for TCNJ students. I want to help improve the system any way I can so that it can be an even more useful resource in the future.

Currently, SERVD allows organizations to post opportunities for community service events, which get approved by the administrator, so that students can view them and hopefully volunteer. I would like to add another page on the application for a student profile. In this student profile, students will have the option to add basic information about themselves in addition to the email address that is already displayed when accessing the “view roster” function for an event. I will improve the roster function to include any additional information the student provides such as major, academic year, and their issue area of interest. Hopefully this will allow students to better understand their fellow volunteers and reach out to them. In addition to this, I also plan on including functionality for students to search for other students who share the same area of interest. Similar to the planned roster function update, they will be able to see the same basic information about them in case they want to reach out. My hope is that this will help SERVD to become a networking opportunity for students to find others with similar passions.

If I have extra time, I also plan to implement a way for students to search for other students based on year or major. This may not be extremely practical for the given domain, but it would be a nice addition to the ability to search by issue area. In

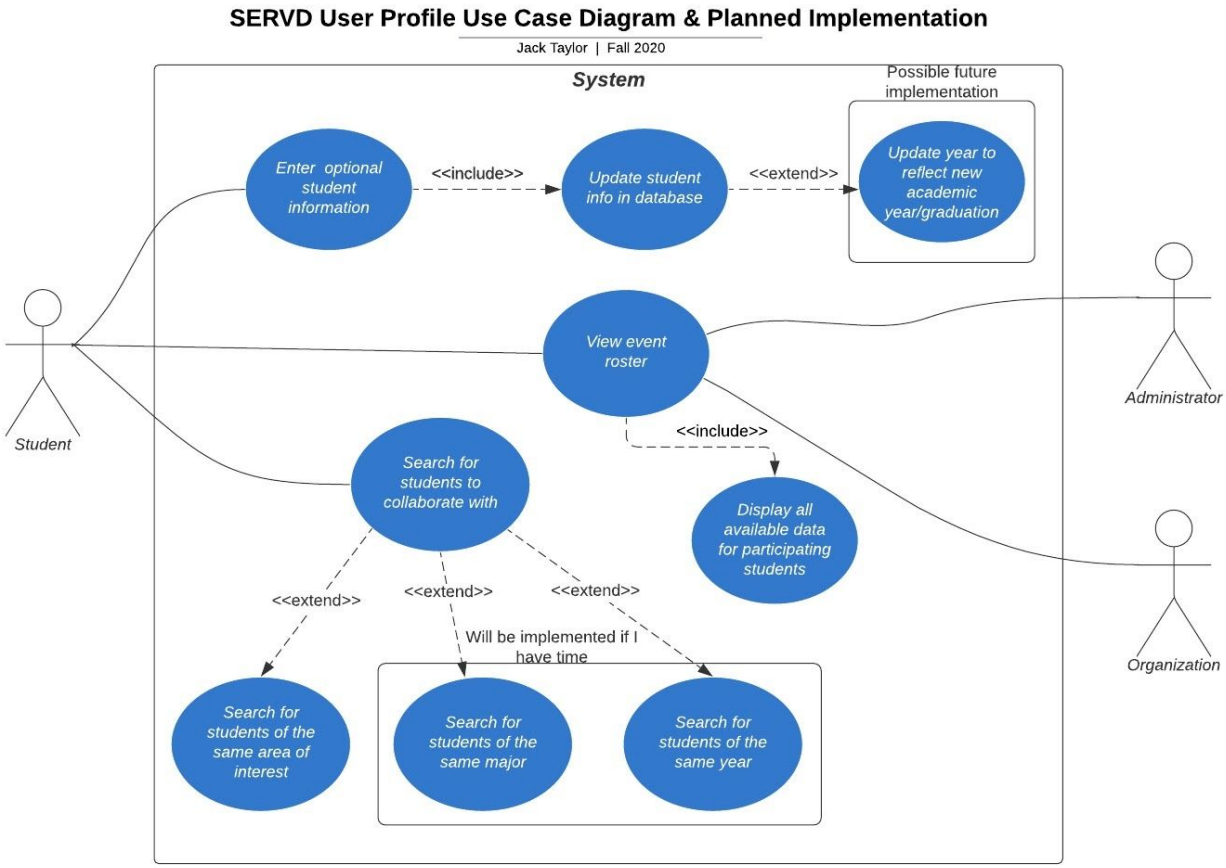
the future, I would like to see a way for the student's entry of their year to automatically increment to the next year (ex. freshman to sophomore) as time progresses. This could also be useful for marking students as "graduated" in the future.

In order to implement my planned functionality, I will have to build onto the already-existing PostgreSQL database. I will have to add attributes to the student class for year, major, and area of interest. To show this information in the roster, I will need to add the attributes for year, major, and area of interest to be displayed along with their already-displayed email. As for the functionality to search for other students with the same interest area, I will create an algorithm that will iterate through each student profile instance and, upon matching with the original student's area of interest, will display their information in a single row in a table. The student will then be able to see this information, and hopefully they can find a few people to reach out to for future collaborative projects.

By completing this project over the course of the semester, I expect to learn many new important concepts in software engineering. To start, I will learn a great deal about the product life cycle, as I am expected to plan my course of actions for the following weeks and set deadlines for myself. I have not had a great deal of experience in following a strict process when programming before this project. Additionally, I will be learning how to use a PostgreSQL database. I have never used anything similar to SQL in the past, so I hope that this will be a great opportunity to get familiarized with this kind of data handling. Lastly, I have never worked on an existing project of this scope before. By taking on new responsibilities for someone else's code, I will learn many valuable skills that industry programmers practice every day. This would include reading documentation, understanding a colleague's code, and working on one specific unit of a larger project.

In the figure below, a use-case diagram demonstrates the functionality I plan to implement along with the actors who will be able to use it. You will be able to see that the student role may enter optional extra information about themselves, view the roster, and search for similar students, while organizations and administrators may only view

rosters. This allows students to personalize their experience to their liking, but anybody may benefit from getting to know them a bit better when they sign up for an event. Any part of the system that was already implemented and is irrelevant to my planned contributions has been left outside the scope of the system.



The last order of business for my proposal is to map out a timeline for completing each task, understanding the domain, talking to stakeholders, and learning any new concepts that I may require for the completion of this project. Below are deadlines and descriptions for each of my planned stages of development.

- 10/4: Become more familiar with the existing project, including its database and source code. Practice using Ruby and PostgreSQL. Adjust the use case diagram if necessary.
- 10/11: Create case diagram, system state chart, system sequence diagram, and mock-ups of the user screen to the appropriate level of detail.
- 10/15: Prototype for assignment 3 is ready for submission.
- 10/22: Implementation of the user profile page is finished with ability to enter information.
- 10/29: Additional displayed information for the view roster function has been implemented.
- 11/5: Student's ability to search for others with the same area of interest has been implemented. (Finished proposed implementation at this point)
- 11/11: Final submission has been thoroughly tested and documented. The project is ready for submission.