

Emily Bever

## Individual Capstone Assessment

Our senior project is going to be a web based cyber security education platform/framework. We want our project to be a tool that can be used when teaching cyber security/networking concepts. Specifically we want to visually take a user through confusing or complex topics and show/ explain how they work. We think this project will be a good experience for us since it will include learning new frameworks and languages. We are planning to use Javascript, React, Node.js, postgres, etc. I also think it will be a good learning experience to create a web application from scratch and we will learn project organization and teamwork skills .

I have taken many different classes that I think will be useful and all of my computer science classes have covered topics that I think I will use during this project, whether consciously or subconsciously. Specifically, Software Engineering, EECE 3093 C is a class that taught us about software engineering as a whole. We learned about Agile and Scrum which I think are important methods of organizing a team project, mostly at a company. I think we will be able to use those methods such as having status meetings, planning our work for specified time periods, focusing on specific tasks or goals. Another class that will be useful is Database Design and Development, CS4092. In that class we learned how to create and use databases as well as how tables, rows, columns, etc interact. This will be useful since we plan on using a database in this project so we will need to design and develop one so knowing how they work is very important. Finally, in CS 4065, Computer Networks and Networked Computing taught us a lot that will be very useful, especially because we are creating an education platform to teach some networking concepts like IP buffering.

I did all of my co-op semesters at Perforce Software as a Software Engineering Co-op and learned a lot about how a business operates and how people work in teams to produce work on a common project. At my co-op, we used GitHub to store and keep track of our code. I learned lots of ways GitHub can be utilized when working with a team such as branches and pull requests. Since we will be using GitHub for this project, I think my prior experience will be very beneficial and I can help to organize and manage our work in the repository. I also learned and used javascript, HTML, CSS, and other tools while at my co-op on a daily basis. They should be useful when we are building our project since we are making a web application. Finally, I picked up non-technical skills like working effectively with other team members and I gained presentation skills from giving daily status updates and doing demos for people on the

team. I also gained experience writing reports and descriptions of my work, as well as writing better, more meaningful comments.

I am excited and motivated to be doing this project because I like that we are going to be making something that can be used in the future to teach and help people understand new or confusing concepts. I also am excited to be able to make a web application from scratch because I worked on web applications at my co-op but never made something as technical from scratch so it will be fun to learn how to piece everything together. I think it will be a great experience to design the project and watch it slowly come together. My preliminary approach to designing this project would be to first determine all first step technologies and software and components we need to keep track of and create tasks for getting the project to a working state. Then I would say that we create the application and get any software or frameworks downloaded and set up. After that we can add different goals for each next section of the project, and work incrementally until we have a better structure.

I expect that our end result will be an interactive application with lots of visuals and sections that will teach and explore different topics in networking and cyber security. I think accomplishments throughout the way that will be goals we are working towards are first designing the project and having a good schedule for what will be done when. After finishing that I expect that we will have many little accomplishments along the way. Getting the application created, setting up a database and backend, adding our first general concept that we are modeling are all accomplishments that we will hopefully achieve during this project. That will all lead to finally having a fully working educational platform at the end of the year. Individually I want to have a set of tasks that I am responsible for so I can track my own work and therefore have a good idea of my self evaluation. I will know when I am done when I complete one of my tasks and ensure it is fully working, and I plan to treat all tasks like this. I will also make sure I did a good job by testing my work thoroughly to ensure there are no bugs or errors in my work.