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For my group's senior design project, we have chosen to develop a web-based application that will store and classify code snippets. Those code snippets will then be able to be searched, filtered, sorted, reviewed, and commented on by users so that finding a desired snippet of code will be quick, easy, and informative. From my academic perspective, I see this project as an opportunity for myself to showcase the skills I have developed throughout my college education and co-op experiences. This project encompasses a wide spectrum of the technical skills and soft skills that I have acquired throughout my undergraduate career. To list a few, it calls for design thinking, knowledge of programming languages, database design and development, web design, teamwork, and time management. I have worked very hard to develop these skills in the classroom and during co-op so to be able to apply them successfully here on this project would be a true accomplishment.

I believe my college education as a whole will contribute well to this project, but I would attribute the most credit to three particular courses. First, I would give credit to Data Structures (CS 2028C) which focused heavily on how to utilize common types of data structures within object-oriented languages. Next, I would give credit to Database Design and Development (CS 4092) which gave me an extensive understanding of the SQL language as well as the best practices for designing a relational database. Finally, I would give credit to Web Design I/II (EMDT 2050C/2051C) as it taught me a lot about front-end development including many aspects of UI/UX design such as mobile responsiveness, branding, and page layouts. Having taken these three courses, I can much more confidently contribute to the back-end, front-end, or database side of development. This means that I can much more confidently contribute to our senior design project as it will entail back-end, front-end, and database development.

While having a strong theoretical understanding of back-end, front-end, and database development through college courses, I have also been able to put that knowledge into practice during my co-op experience with Matson Money. For all four of my co-op sessions, I have worked for Matson Money as a Software Engineering Co-op doing full-stack development in both Salesforce and .NET. In this position, I've followed an agile methodology of development and have utilized JIRA to manage projects and user stories. I believe this will be useful experience and apply well to managing the development of our senior design project. In my co-op position, I also met regularly with other departments to discuss requirements and priorities. I also regularly participated in design meetings with my team and performed code reviews for other developers. This will certainly be applicable for this senior design project as I'm sure our team will need to discuss design decisions frequently in order to collaborate towards optimal solutions. I was the lead developer and database administrator of a web-based application called Fillable Forms which allows clients to fill out and sign forms digitally. I learned a lot about database management in this role and wrote a lot of SQL for entering data, creating stored procedures, creating views, and more. From this experience, I will be comfortable helping to develop a database for our web application to communicate with. I have developed new applications at Matson Money and set them up to build across environments using Azure DevOps. I'm not sure how we plan to architect our project just yet, but having some experience

with version control and deployments will surely be relevant. Finally, I have experience with writing unit tests and integration tests from my co-op experience at Matson Money. This will definitely be applicable experience since we will want to write unit tests and integration tests for our project to ensure that our code continually works as we expect it to.

I am excited to work on this project because it involves so many skills that I've learned in college courses and my co-op experience. Because of this, I feel that I can make a really great contribution to this team and the success of the project. I'm also excited because I feel that we are creating a product that is actually valuable and worthwhile. Realistically, I could see there being a demand for this sort of application and would even utilize it myself. It would be quite useful to be able to access a publicly accessible list of algorithms, filter it down to the goal of the algorithm and programming language, and then sort the list based on time complexity, space complexity, or possibly some form of user approval. Additionally, being able to comment and discuss the pros/cons of the algorithm with other developers would be nice as well. Instead of having to dust off your old textbooks or get lost scouring the web to compare algorithms and find the best one for your situation, you would simply go straight to our web application where comparing and contrasting algorithms can be done quickly and easily.

We have not fully determined yet how we would like to architect this solution, but will be discussing that soon. So far we have been thinking of building this as an MVC application in .NET Core since we each have some experience with that, but we have not solidified that decision just yet. We will definitely take the time to analyze different approaches in order to determine which best meets our capabilities as developers and our needs as prospective users. Each member will be held equally accountable for this project relative to the role that they hold. Roles will be determined in the near future and each role will be expected to contribute an equal amount of work to the project. Each member should hold themselves accountable to perform the work necessary to accomplish their tasks and meet any deadlines agreed upon in team meetings. We will be meeting regularly to report on our progress, objectives, and obstacles. We also utilize a group chat in case that any immediate communication is necessary.