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CS5001

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### Individual Capstone Assessment

Our senior design project will be to create a website that assists in purchasing all the parts one would need in order to build a PC. This includes selecting each part individually and (if we have the time) being able to see an estimation of how the PC would perform on certain games. The website will also be able to compare different parts using benchmarks, so that users will be able to make more informed decisions about whether a more expensive part is worth the price. These features make it so that the website is more catered to a user who is less informed about PC building, but still being incredibly useful for even experienced builders.

The CS curriculum has many classes that taught useful skills for this project. CS-2021 Python Programming is one of the most influential, as Python is the language that we will be using to do the web scraping for the information and prices of the parts. Another class that is just as valuable would be CS-4092 Database Design, as we will need to create, organize, and access a database for our parts. Finally, EECE-3093C Software Engineering is another class that is useful for this project. This class taught us about the design process of software and the lifecycle of a software project, which is applicable to this project.

Through my co-ops, I have worked at Siemens PLM and CADTalk, where I learned and experienced much about how software projects progress. In both positions, I was able to work with teams to discuss and solve issues for our projects, as well as create deadlines and assign tasks to team members. This should make organizing our project an easier task. I also worked on designing UI elements in both positions, which should help when creating the UI for our website. At Siemens in particular, I was often pulling data from a database to then display to a user, much like we are doing on the website.

My primary motivation for this project is that I would consider myself more of a beginner at PC building, so to be able to create a website to streamline and simplify that process is a big motivator. The idea of researching price compared to performance, as well as any sales, is daunting to me, and this website will serve to greatly minimize issues I have with it. I would argue the process of selecting parts and the price of the parts themselves are the biggest factors of why many people decide to simply buy a console instead. Our website would be a great help with reducing these blocks and hopefully inspire and enable more people to be able to build PCs properly.

Our preliminary approach to this project is to use HTML, CSS, and React to design the website itself. The backend will be managed with MySQL and Python. Our expected result will be a website that even a novice will be able to use without much trouble, and be able to build the best pc possible within their price range. If this can be accomplished, then we know that we will have finished our project. This can be clearly tested by having various people use the website who are very new to PC building, and see if they can produce a PC that fits their requirements without having much trouble.