Capstone 1

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It was very hard for me to come to a decision about my senior design project since there is so much I wanted to do. Originally I had decided to expand on a project that I had made for a hackathon a year back. Even though I really liked that idea, I decided to narrow it down to the things I have found to love in my academics, co-ops, and personal life. Based on my personal life I loved working on cars so I really wanted to focus on something in the auto sector. In contrast, with co-op and school I spent a lot of time working with linux, kernels, and low level systems engineering. I decided the best project for me was to combine these two interests to create a custom OS specifically designed for automobiles.

The first academic class that springs to mind is my operating class. In this class I have learned to create a linux kernel and associated kernel modules. Whilst I am still taking this class, my knowledge for this project will increase in folds. This class is one of the biggest reasons I decided to take on this project, along with the professor, who I intend to have as my faculty advisor. I am also building on general coding and systems engineering skills I have learned in Intro to comp systems and IT 2080c. Both of these classes provided baselines for the skills I will need for my project.

I also have a ton of experience in this from my co-op. I have had the privilege of doing some very interesting technical work on my last 3 co-ops and through this I have learned so much. I have learned how to build OS's, work in linux, work with raspberry pi's, and most importantly, how to develop in a timely and efficient manner. I've also used a lot of software at work for my development environments that I plan to use on this project. This includes coding tools like vscode for development, and code source control management programs such as gitlab that I have extensive use with thanks to my co-ops. I will use the planning skills I have learned from work, and when combined with the technical skills I've learned, my project will be great.

As stated before, my motivations for this project are down to what I have found I love working on. Cars, and system development. I wanted to be able to tie the two together, and I think I found the right project. Also, for me and other people I know personally, this project will contribute to a device/program that will be used by quite a few people wanting this type of solution for their own cars. Knowing I can create something that me and other people would very much want to use is a ton of encouragement. It would be great to see people using something that I built.

This use by myself and other people is one of the criteria I will use for a successful project. If myself and other people find it useful, it is a good benchmark that the project was successfully user-friendly and flexible like I want it to be. I want the design to be quick booting as nobody wants to wait for a computer to load when they start their car. I want it to be very easy to use and be safe for operating, since they are driving a car. I need it to look and feel high quality. I want other people to intentionally choose it as a solution to their custom car-based

computers. Since I am the only member of this team all of those responsibilities are on me, so it is a great test of the skills I have learned at co-op and school.