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Professional Self-Assessment

**A.**

Throughout my time here at Southern New Hampshire University, I have learned how to be the best Software Engineer that I can be. A lot of the course work was extremely difficult in terms of not knowing or understanding what to do or what to research. This degree was not handed to us and required us as computer science majors to step outside of our comfort zone and get accustomed to new territory and ideas. The coursework in the beginning wasn’t too bad when comparing to our final CS coursework. However, as a new software engineer, everything is uncertain and for myself I was lacking confidence in my abilities.

As time when on throughout SNHU, I began to take more CS programming classes which allowed me to strengthen my worth as an engineer. Not only just for basics of programming, but for how specific algorithms and data structures would work properly and if those structures made sense. I started programming in the language Python, Java and eventually C++. Each course had its toll on me and was very stressful throughout, but I persevered and finish my work. Eventually we took these programming ideas and implemented them with database structures such as CS-340, which was our time to shine as software engineers. In this class I was able to set up a database on a host server and then was able to be accessed by a client, which would allow for all options such as create, read, update and delete. This was the class that I had my breakthrough moment with programming and really understood how to create proper algorithms and data structures for achieving my goals.

I have also learned a lot when it comes to personal and team goals within a workplace. One of the best classes we took was CS-310, which was very informative on how to set up a gitBucket repository and have others work on the same project. This class was perfect for team collaboration because we had to make sure that we were setting up our repository correctly, confirming with our team that our repository was now live and then any changes that were made by another team member could be implemented with our final project. This is perfect for team environments that build off each other’s ideas. SNHU in almost every project had scenarios that would incorporate and hypothetical situation where you were an engineer working for a company and had to fulfil there needs and wants. I find this to be extremely helpful throughout my time here at SNHU because it made me feel more immersed in the project, almost as if I was working at the company. We were also taught to understand the client or stakeholders’ thoughts and opinions. In the real world, people who put out money for a project often have some sort of personal say in how the operations are ran. It is up to you as an engineer to give insight as to why a project needs to be ran a specific way.

Overall, my experience at SNHU has been a rollercoaster of different emotions, thoughts and feelings. Some classes were easy, and some classes were extremely difficult. I have been able to maintain a GPA of 4.0 throughout my time and I am very proud of my success and I believe my work has a lot to show for it. I still feel as if I need to work on my portfolio more with personal projects outside of school. I am going to start working on building a video game in the Unity game engine. This is my goal in life, and I believe once I have a nice work in progress to show an employer, I will be ready then. Unfortunately, I am a realist when it comes to life and I know that employers do not want to see schoolwork. Employers want to see drive and initiative when it comes to personal projects and making sure that you are the right candidate for the job. I firmly believe that school plays a big part in this process, but it really comes down to if that person wants to live and breath what a software engineer does daily.

I have great talking points about projects that I have worked on at SNHU, but I do feel like myself that I am lacking, but that is just a personal problem that I have always dealt with in life. I always try to be extremely good at what I do and want to make people amazed at my work that I provide. SNHU has given me a great foundation for me to build upon. It is now my time to take lead and build greater strides in my life goals as a Software Engineer.

**B.**

When it comes to the artifacts that I chose for our final project capstone, I believe I chose three prime examples that would encompass all the skills taught to us here at SNHU. The first artifact that I chose for Software Engineering and Design was from CS-360: Mobile Architecture and Programming. The purpose of this choice was to perform and execute a complete overhaul of my original campsite finder application that was created in android studio and replace the structure of the code, the aesthetics of the application HUD and UI. Overall, the original application was messy and lacked good professional coding practices. I would be ashamed to show the original to a future employer, and not to mention it was hard to navigate through the source code and reference. The overall skills that were shown during this enhancement were object-oriented design which encompasses four basic principles such as, Abstraction, Encapsulation, Inheritance and Polymorphism. I also shown how to test for software bugs/errors to ensure that my application is working properly.

The second artifact that I chose for the Algorithms and Data Structures section was from CS-350: Emerging Systems Architectures & Technologies. This artifact was a weather sensor that was testing for temperature and humidity in a room and then stored data to a JSON file over a specified amount of time. This project had us implement software with hardware, in which I used a RaspberryPi 3, along with a HAT named grovePi which allowed for sensors such as temperature to be connected to. The original project was easily one of my favorite projects to work on at SNHU and I felt as if I was finally becoming a true Software Engineer. It originally had a light sensor which would only turn on the project if a specified amount of light was reading and picking up light to the system.

For this project I tossed that idea out and implemented a button instead. The reason I did this change was to record during the day and now being able to at night. The button if pressed would then stop the system from running and display a message to the user on their monitor and LCD screen adapter that came with the grovePi kit. Another change that I added was a buzzer sound, which would buzz when the temperature would reach above 95-degree Fahrenheit. This was to alarm the user in a more immersive way, because the buzzer is extremely loud and piercing, which would then lead the user to believe that something is wrong. I also felt that the program should have more of a security structure to it, rather than just letting anyone use the program. So, I implemented a sign in screen process that would only allow for specific usernames and passwords that had to match the perfect criteria in the system. This would then allow for the user to gain access to the system and allow them to use the weather program. As for data structures and algorithms, I proudly put in a lot of time to get my Python code to work properly with the hardware that it was referencing. Overall, my project turned out to be great and I hit all the goals that I set for myself during this artifact. I believe my skills shown for this artifact were being able to implement and integrate software code along with hardware.

For the last artifact for the Databases section, I chose to work on the CS-350: Mobile Architecture and Programming again. This application I made was now improved from artifact one, however it needed a proper sign in process, so I created a database that would allow for the user to register a username and password and then sign in with that said username and password. This was something that I wanted to do for the final project of my original class, but I never got around to implementing it properly. For this final project I successfully implemented a proper sign in page which will save the users name and password for future sign ins. The skills I shown here were successfully creating and implementing a SQL database inside android studio and having that database store proper data for the users.

Overall, I believe these three artifacts help display my software engineering skills from good practices, programming, data structures, algorithms, databases, team collaboration and effectiveness. I believe these were my strongest pieces of work at SNHU and would make for great conversation if a future employer asks to see any of my work. As a software engineer, you must be smart and intellectual when coming up with ideas and structures for projects. More importantly, you must have an artistic vision to see your project from something minuscule, to something that can be massive. I am ready to go out into the real world and face any obstacle that I may have to overcome, but more importantly I am ready to work on my own projects, seeing that I will have more time to focus on doing so. With that being said, I am very proud of my journey that I took at SNHU, I started by setting a goal of graduating in 2020, and I am doing just that. I have had self-encouragement along the way, as well as family and friends. Always trust yourself to make better decisions in life, because they can open many doors for many paths. My door has only just opened.