CS 499 Milestone 2 Narrative

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The artifact that I am using for this project is the final project that I made in my IT 145 class back in March 11, 2020. The project had the students create an application for a cruise company to maintain a listing of ships, passengers, and cruises. Initially we were only supposed to implement the ability to add and print out items from the listing. The reason I chose this artifact for the project was because it was one of my very first projects that involved in depth work to complete the project. It was the first project that I had used multiple files for which added a new level of difficulty for me. I remembered that there were quite a few functions that were not implemented or were implemented incorrectly so the program did not actually work as intended. I had always wanted to go back and update the program so that it would work right, and this felt like an excellent time to do that. Another reason I chose to use this artifact was that because it was one of the first projects I had worked on there were a lot of potential enhancements I could make to the program some of which include new functionality, adding an external database such as MongoDB, and updating the security of the program so that would be closer to industry standards. The last reason I chose this application was because it was done in Java. Out of all the languages I’ve used so far C++ has been my favorite and I have come a long way over the 5 years of schooling. This was a perfect way to demonstrate to both myself and future employers the skills that I have gained by converting the program from Java to C++ and then further improving it.

This artifact has allowed me to showcase my understanding of the C++ language. This was my first time converting an application from one language to another. I have worked more with C++ than I have with Java. The best way to demonstrate my ability to work with C++ was to convert all the functions and then make them more efficient. I followed best standards by creating a header file to declare each function used by the application and then a cpp file that defined the functions. I made the main file of the application more organized by taking the functions for handling the data and separating them into the specific classes they needed to be apart of. Then I refined and completed each function so that they would work. When the original artifact was created we only had to implement about half of the functions. With it being my first time working on a larger project I didn’t know at the time of completion that the functions did not all work as intended even if they were implemented. I created code that would be easily reusable across all the classes and if the need arose it could be used to add new classes. The menu can still be expanded to allow for new functions for the user as well. The way that I had the code neatly organized and set up allowed my friends who reviewed my code with me during this portion of the enhancement process to easily jump in and work with me to solve some of the issues that I found in my program.

This process gave me a much better understanding of a lot of things that I hadn’t considered in the past that I could now go back and update in the original artifact. I have worked with vectors before but never as in depth as I did with this application which will help me convert them to the database when it comes time to implement that into the program. I also found that I had to reach out to some of my friends who have been working in the IT field for a while and have them review my code when I struggled to figure out why my printing functions were not working as intended. That was probably the biggest issue that I had come across during this portion of the enhancement process. After an hour of joint code review using screen sharing, we were able to find that I had some conflicting variables that were causing the variables I needed to get to be localized. In the main file I kept a running list of all my experiences and thoughts that had occurred to me while I was working on this so that I would remember things I had thought about for security or additional features that could or should be added. I had to do some investigating on what the best list format would be the most efficient for this as well as how to interact with it and have it function as I needed it to. I encountered a lot of frustration and annoyance when I was struggling but it just led me to look for new ways to solve my issues. If I couldn’t find the solution on Google I went to YouTube. When that failed and I couldn’t find the solution to my issues I reached out to those who had a lot more experience to help look over my code. I had 2 friends who reviewed the code with me, one who specialized in Java and the other who specialized in C++. This was a good way of simulating working on a project as a team rather than just going at it solo. We were able to discuss the application and what the functions were trying to do and work through it line by line to find the bug that caused the function to fail. It was good to get a viewpoint from the language I had the application started in and one from what I was converting it to. I would honestly say that out of all my projects this was one of the best learning experiences I’ve had yet.