CS 499 – Enhancement One Narrative

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The artifact for enhancement one is a contact service program similar to that of a contact list in a cellular device. It was first created in CS-320; Software Testing, Automation, and Quality Assurance. This program was initially created to learn and understand the concept of white-box unit testing with JUnit. This program started with four classes; Contact, ContactService, ContactTest, and ContactServiceTest. The Contact class is a blueprint for a contact, the ContactService class is a blueprint for a contact service, while the final two classes were for testing respectively.

This artifact was chosen to be included in my ePortfolio as it portrays several aspects of both software engineering and design as well as data structures and algorithms. The aspects of JUnit testing and the hash map implementation both serve as a strong foundation for this project and the skills it can showcase. The newly implemented query function as well as its corresponding unit test are great examples of software engineering and design principles as well as the ability to utilize well-founded techniques and tools to deliver real world value. The newly implemented GUI further showcases software engineering and design principles, the ability to build a collaborative environment supporting diverse audiences, the ability to deliver professional visual communications, the ability to evaluate computing solutions using algorithmic principles, as well as the ability to use well-founded and innovative tools and techniques. In whole, the artifact showcases proficiency with Java, GitHub, unit testing, Maven, and Swing. The artifact was first improved through the inclusion of a query function. Previously, users could only query for contacts through their unique ID. Now, users can query a contact by first name. The functionality of this method was verified through the newly implemented JUnit test. The most prevalent addition to this program was the user interface. Previously, users

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couldn't interact with the program, let alone view anything outside of the terminal. Now, upon the program's start, a GUI pops up with four buttons. These four buttons are "Add Contact", "Delete Contact", "Search By First Name", and "Update Contact". The "Search By First Name" screen includes an output area which outputs all information related to the queried contact. The "Update Contact" screen contains a text field for every attribute where the user can enter the contact's ID as well as any information they wish to update.

This artifact's enhancements satisfied all of the course outcomes that I planned to meet with this enhancement. At the moment, I do not have any updates to my outcome-coverage plans.

The process of enhancing and modifying the artifact was quite fun and insightful. The original application did not implement JUnit through Maven, but through containers. This enhancement taught me a little about the implementation of Maven and the pom file. Furthermore, the addition of the unit test reminded me of how the unit tests work as well as the various functions available. The majority of the learning was regarding the user interface. Only once in a previous class did we utilize Swing, so this was a great opportunity to hone my skills. The fact that I opted for five total different screens allowed me the opportunity to reinforce my learning. The challenges that I faced were in regard to accessibility. For example, the various GUI panels, contact attributes, and contact service functions at times stumped me when attempting to access them from a different file. A concept I was aware of, but still caught me.