Thomas Bagnardi

CS-499

Milestone Three Narrative

09/28/2025

This artifact from CS-320 was created roughly six to eight months ago. The purpose was to store each generated contact from the artifact used in the Software and Design section into an array list with separate functions to perform maintenance on the array list. This artifact was selected for inclusion in my ePortfolio because maintaining arrays specifically those with confidential information is a significant job within our industry. The artifact was improved with the addition of the test case that validates and checks each contact within the array list for any unwanted duplication, essentially creating a security check for unwanted contacts or possible infiltration routes. This artifact showcases my ability to not only create arrays storing information but also creating functions to maintain the CIA security triad and perform routine maintenance on a scalable product.

The course outcomes for this specific enhancement plan were outcomes three, four, and five. The enhanced artifact displays used intellectual tools and innovative techniques to solve a complex problem, while also managing trade-offs and enforcing a cybersecurity mindset. The trade-off talked about was the inclusion of the duplication test. This test was included in the case of other vulnerabilities that could allow for duplicate contacts to be injected within the array list. The addition of the test function and the testing/debugging tools were a big part of the test case implementation. Finally, the addition of the test function was a decision made with security and protection at the forefront.

During the process of enhancing and modifying this artifact I really learned more about IDE configuration and developing from a security perspective while keeping functionality in mind. Some challenges included not having my IDE configured to compile java or debug it, which was something that I had to modify and tweak to make this enhancement possible. I also came across some problems initializing and then properly implementing the function. I spent the majority of the week researching this problem and eventually coming up with the solution that is seen in the file.