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CS-499

Dr. Ogoh

09/21/25

3-2 Milestone Two: Enhancement One: Software Design and Engineering

**Artifact Description:**

The artifact I selected is a Java slideshow project that was originally created in the CS-250 class here at SNHU. I was in CS-250 around October 2024. The version of the slideshow from the class was a simple application with a five-slide cap and a basic navigation system. For this milestone, I enhanced the slideshow project by expanding the slide count, improving functionality, simplifying the code structure, improving navigation, and adding testing. These changes were made during September 2025 as part of my ePortfolio preparation.

**Justification for Inclusion:**  
I chose this artifact because it was perfect for demonstrating my skills in software design and engineering. The class itself was very centered on documentation and design. I made several improvements. The updated version of the slideshow now contains 10 slides, expanding past the 5-slide cap in the original code. The new slide show is centered around Japanese cities and prefectures worth visiting. Each slide has its own image, description, and background color. Beyond content, the artifact showcases my ability to refactor code for clarity and maintainability. I changed the hardcoded if/else code for arrays to manage slide data instead. Additionally, I restructured the navigation to use index-based cycling. I also added JUnit tests to test and confirm correct navigation and wrap-around behavior. Together, these changes highlight my ability to write clean, organized, and testable code.

**Course Outcomes:**  
Originally, I was going to enhance the basic list view controls assignment from CS-250, but the slideshow was a much better fit for the enhancement. With this enhancement, I believe that I have met the course outcome and demonstrated my abilities as a competent programmer. In this assignment, I used professional techniques and practices to implement software solutions. Specifically, I improved the code’s design and structure, added test coverage, and introduced practices that make the program easier to maintain and scale. Additionally, I added documentation in the form of code comments and a backlog. I also provided a UML class diagram, that I created for the enhanced slideshow. In Module One, I planned to align the artifact from CS-250 with the software design and engineering outcome, and this enhancement directly supports that plan. Other than using the slideshow assignment, nothing else has changed. My outcome-coverage plans are the same.

**Reflection on Process:**  
Enhancing this artifact was invaluable. I was given the opportunity to put my skills on display and even learn a few new things. One of my biggest takeaways was seeing how much cleaner the code was and how much easier it was to navigate and maintain. I changed hardcoded logic in favor of using arrays and loops, which created a clean and easy-to-read program. I also put my testing skills to the test. I learned how to create and use JUnit tests here at SNHU, so getting to use them again felt great. I am now even more confident in my abilities to use JUnit testing to ensure the functionality of my program’s logic. The main challenge I faced was ensuring that navigation wrapped around correctly when reaching the first or last slide. Rewriting all of the slide data using arrays and loops was more tedious, but still a challenge. Addressing these problems allowed me to focus on the rest of the project. Overall, this enhancement has shown me how much of a difference small design changes can have, and how it can lead to large improvements in usability and maintainability.