# CS-499 Module 4 – Enhancement 2 Assessment

Data Structures/Algorithms

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Briefly describe the artifact. What is it? When was it created?

The artifact that I selected for this enhancement is from CS-250 Software Development Lifecycle that I took in April of 2020. This was my final project and the setup was to take a piece of code that was provided at the beginning of term and work to develop the code to provide a described outcome using Eclipse IDE. During the course we worked on developing the code using AGILE project management. I was assigned to a team and throughout the term we would switch roles from development team members, scrum master, and project owner. The code development was intended to supplement the learning of creating a product using AGILE methodologies. The class provided the setup and the scope of the project and throughout the term we were given various changes to the project in order to work using AGILE while developing our code independently from the group. The final product was to provide a JAVA GUI application that would serve as a slide show for SNHU Travel (fictious startup travel company). The program was intended to scroll through multiple slides providing images of “wellness” vacation destinations as a first stage to building a website (website was not in the scope but described in the course prompt).

Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved??

This enhancement worked directly with the data structure and algorithm objectives of module 2 by incorporating data structures through working with system and application file structures, library pathing, and using algorithms to develop iterative code to fill a need. I started the project by developing an algorithm to follow in order to complete the project successfully. I started by creating a flow diagram that loosely laid out my plans for enhancement to include creating a plan, performing a code review, and then worked on performing the enhancement. I then found my project file and reviewed it. The code was not compiling initially and was not providing helpful errors during my code review. I updated both the JDK and the Eclipse IDE on my computer. Next, I rebuilt the program and got the code to compile. I worked through return outputs from the terminal. I found that even though I updated the calls for the slides, the program was not looping through the button selections. I found that I had incorrectly built the loop after restarting the program a second time from a fresh project in the new IDE that I updated. I corrected the loop and updated the image calls and descriptions. I created the proper folder structure that Eclipse and Java require for resource files and added comments.

The enhancements that I have made to this artifact updated the code to the most current software releases. I developed a slideshow that progresses and revisits slides and provides information for “Wellness” vacation locations as intended. I updated the GUI window appearance and annotation. To showcase my ability to use the concepts of algorithms and data structures when work with existing code; I added functionality to the slideshow with an interface that provides for selecting a button feature that opens a browser and navigates to a specified webpage. This provides additional functionality and further enhances the program for my purposes. This enhancement adds the value of the program by making future user interaction options easier for myself or other developers by including an option for linking webpages or hyperlinks to the enhanced interface.

Did you meet the course objectives you planned to meet with this enhancement in Module Two? Do you have any updates to your outcome-coverage plans?

This artifact through enhancement and assessment shows that I have employed strategies for building a collaborative environment by incorporating in-line comments with sufficient insight into the intention of code. I have shown that I can discuss my decisions in code development using documentation and support materials such as flow charts and code review videos. I have designed, developed, and delivered professional documentation and coherent well commented Java program code that executes as intended and is developed in line with my enhancement plan and flow chart. I have included assessment documentation that demonstrates that I can communicate my intentions and outcomes with a varied audience and have conveyed my ideas clearly through written report (assessment), within code using header and inline comments, and visual and oral media using my recorded code review. I have evaluated computing solutions using code that was not compiling and working algorithmically, starting with a plan, creating a workflow diagram, and working through the code incrementally and testing as I developed moving to the next step only when the code was complete and operating as intended. I have demonstrated that I have the ability to us well-founded and innovative techniques by starting at the beginning and performing iterative testing while correcting existing issues and performing my enhancements. The code was developed using a development lifecycle by starting with investigating the problem (choosing and artifact), I created a well-documented plan of enhancement, then I performed a video code review, and developed the code iteratively while testing, and finally I commented the code and documented the outcomes in this assessment. I have shown that I can employ and develop a security mindset by including comments in my code, performing a code review, and removed unnecessary test cases, I have ensured that there are no unused variables or calculations, and I have ensured that all software and development environments have been updated and running current releases.

The skills that the completion of this artifact show is problem solving using algorithmic thinking, working through logical steps to achieve a goal, incorporating data structures in design projects, Java development, Operating Systems upgrade and integration. I worked to update software on my computer OS, and updated my JDK and IDE and ensured that all software was working together. I was able to update the program to include images and cycle through using navigation buttons and I worked with data structures to ensure proper pathing in the software and code file that I created. I used data structures to ensure that libraries and reference files were pathed and operating correctly. I created secure code by ensuring that it was clearly commented free of unused calculations and variables and tested the code as I developed. I have included information from my development using Agile project management and completed my enhancement per my plan, code review and flow diagram.

Reflect on the process of enhancing and/or modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?

I found the process of creating this artifact considerably more methodical than my first project. I have taken an algorithmic approach to problem solving. I was apprehensive of starting this project as it was the oldest class that I had taken that was an acceptable choice for this enhancement topic. I found that starting with a plan and working step by step using the plan and troubleshooting along the way worked well and really helped me to understand what I was doing and enjoy the process. As with most programming projects I struggle with the coding portion of it. This is less due to not understanding than not being familiar and practiced with it. I found that throughout my program I get a lot of satisfaction from programming and completing the projects but terms are short and I moved to the next class and next language or skill without keeping up the practice.