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

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# A

The artifact I chose for Enhancement 1 was from IT-145: Foundations in Application Development. I took this course here at Southern New Hampshire University (SNHU) in the fall of 2019 and completed the original artifact at that time.

# B

I chose to include this artifact in my ePortfolio because not only was it on the approved list, but it showcased my initial skills early on in my Computer Science journey. This artifact showcases my ability to design a basic program in Java with minimal experience. The program itself shows my understanding of various concepts such different import statement, buffers, scanners, If-Else statements, and case statement use. These skills also show auxiliary skills such as indexes and indicators. I made a few enhancements to the original artifact that will be submitted to my ePortfolio. The first was to expand on the original data sets. The two .txt files, “ANIMALS” and “HABITATS” only had a few entries into each file. I took the original files and updated them to reflect the current animals and habitats listed at the San Antonio Zoo. The next enhancement I made was to expand the options presented to the user. I coded in a new section to accommodate a new file titled “STAFF.” The final enhancements made were to streamline the program itself to make it more lean and cleaned up the comments so that it is not over commented.

Below is the full list of enhancements I made to this artifact:

* Updated the original “Animals.txt” file to include 38 animals versus the original 5
* Updated the original “Animals.txt” file to include Quantity, Sex, and Age fields
* Updated the original “Habitat.txt” file to include 16 habitats versus the original 3
* Updated the original “Habitat.txt” file to include animals present in habitat
* Created an additional “Staff.txt” file to assign staff to different exhibits and animals
* Updated the Switch / Case statement to include case 3 to accommodate the new “Staff” option
* Updated the menu to accommodate the “Staff” option for the user
* Added additional comments to the code to identify what each block of code is doing
* Verified each block of code worked without errors or warnings
* Added “.close();” statements to ensure each of the text files are closed properly
* Verified each case uses breaks
* Verified each scanner is closed
* Performed various formatting updates to ensure the code conforms to java best practices
* Verified the code works as intended and zero warnings or errors are present

# C

I did not meet the course objectives I laid out for myself in module one because I switched artifacts. Originally, I was going to use an artifact from CS-330: Computational Graphics and Visualization to highlight my skills for Software Design and Engineering, however I was not able to get the original artifact to work properly on my local computer. I instead pivoted to this assignment during module two with approval from my instructor. With this artifact, I did meet all objectives that were approved during the code review.

# D

Reflecting on the process of enhancing this artifact, I learned many things from its initial design. The main takeaway was to see where my skills were when I began versus the knowledge I have at the present time. This is a visual representation that shows how much my skills have improved. I did face several self-imposed challenges. First, I did not have any of the IDEs installed on my current computer. I had to go back and research what the original artifact was and how I got it to work properly then. The second was basically relearning Java. I had not written code in Java in well over a year, so I had to brush up on the syntax and structure inherent to Java. Finally, rather than suppressing the warnings I had with the original artifact, I had the knowledge to solve those warnings such as not closing the scanner, which would have allowed for data leaks and created security concerns.