

Robert Robinson

CS499 - Artifact 2

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

The artifact that I chose for Milestone 3 was the travel site that I created in the Software Lifecycle class, CS250, about a year ago. The purpose of the program was to create a program that allowed the user to browse through five different health/wellness locations. The program was written in Java using the AWT/Swing framework. When the program executed, a window would appear that would display a photo of the location and a brief description of the location. The user would also have the option to advance slide forward or backward using two buttons on the bottom.

B. 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?

I selected this artifact because it looked like it would provide a challenge to enhance it. The challenge was to find a way to enhance it from its original form to include something that would be related to data structures/algorithms. I wanted to show that I could take a piece of software and make changes behind the scenes that would allow it to run for efferently will very little impact on what the user would see. I made three enhancement to the program. The first enhancement was to introduce a data structure into the program to hold the data. Originally, the

program just used a series of if statements to hold the data. I created a vector to hold the data for the travel sites. The second enhancement was to add two buttons that would allow the user to look at the locations in either numerical (default) orders or alphabetical order. The third enhancement was to sort the vector data depending on which button was pushed and then display the data to the user.

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

In module one, my goal was to demonstrate the outcome related to ‘Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution while managing the trade-offs involved in design choices (data structures and algorithms). I believe that I met these outcomes and that the program runs more efficiently with the data structure and sorting algorithms included. I have no updates on my outcome-coverage plans at this time.

D. 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?

Improving this artifact was very challenging. I spent the first part of the week trying to figure out how I would change the data. I looked into creating a table or tree for the data structure but after noticing that Java Swing had a built-in tree function (JTree), I decided that wouldn’t be a good approach. I decided to take the existing product and store the data in a vector. The vector would hold the data for each site and could provide that information to the user. Also,

I was able to create a sorting algorithm to sort the data in the vector by either name or numerical rank. The main challenge I ran into was how to display the sorted data to the user in the new order. I ran into several problems as the data would remain unsorted when being displayed but as the user cycled through the data, the sorted order would eventually be displayed. I need to go back and see what I can do about that and maybe change the layout so it will work properly. I tried a few different solutions to get the card to reset to the new order, but nothing was adequate to my liking. The way it works now is that it cycles through the locations and when a sorting button is pushed the data is displayed as the cards are being advanced. For example, if the alphabetical sorting button is pushed, the card will display numerically, then alphabetically, then numerically again. I also added an exit button at the bottom of the panel.