**CS 300 Module Eight Journal Guidelines**

**Overview**

In this journal, you will make a submission to your portfolio. Remember that you will submit portfolio artifacts in different courses throughout the Computer Science program. This portfolio is an opportunity for you to catalog your learning and showcase your best work to future employers. You will also reflect on the work that you have done in these projects. Reflecting will help add context to refresh your memory when you review your portfolio in the future.

**Prompt**

For this course, you will be submitting one portion of each project into the GitHub repository for your portfolio. From Project One, submit your analysis of the run-time and memory for the data structures. From Project Two, submit the working code that will sort and print out a list of the courses in the Computer Science program in alphanumeric order. Together, these documents showcase your work in data structures and algorithms.

You will also reflect on the work that you have done in these projects. Reflecting is a valuable skill to cement your learning. It will also help add context to refresh your memory when you use your portfolio in the future. Update the README file in your repository and include your answers to each of the questions below. You could include the questions and write a few sentences in response to each one, or you could write a paragraph or two weaving together all of your answers.

* What was the problem you were solving in the projects for this course?
* How did you approach the problem? Consider why data structures are important to understand.
* How did you overcome any roadblocks you encountered while going through the activities or project?
* How has your work on this project expanded your approach to designing software and developing programs?
* How has your work on this project evolved the way you write programs that are maintainable, readable, and adaptable?
* What was the problem you were solving in the projects for this course?

The projects throughout the course were to help understand the fundamentals regarding data structures and algorithms. The first project was executing various pseudocodes using vectors, hash tables, and binary search trees and projecting and evaluating the run-time and memory of data structures that could be used to address the requirements. The purpose of the first project is to understand each data structure has its benefits and downfalls and when each data structure should be used. The second project was to use the foundation of the first project and turn it into code. The code must be able to read the course data file, display a menu option, load data structures, provide a course list in alphabetical order, provide a working code for the course information, and exit the program correctly.

* How did you approach the problem? Consider why data structures are important to understand.

I was able to approach the problems by identifying step-by-step procedures. The first objective was to understand what questions were being asked and understand the requirements. The second step was to determine the best data structure by reviewing its advantages, disadvantages, and run time and utilizing which data structure I felt most comfortable using. The data structures are vital to understanding because they determine the performance and quality of the program. During this time, there is much to consider about how it will affect both the users and clients.

* How did you overcome any roadblocks you encountered while going through the activities or project?

Many roadblocks were resolved by rereading my notes, reviewing the reading, using YouTube, which was provided in the announcements, or self-researching. On rare occasions, I would also use Stack Overflow as a last resort to fully grasp any concepts I have issues with

* How has your work on this project expanded your approach to designing software and developing programs?

Both projects helped to expand my approach to designing software and developing programs by defining a structured base. Before this class, I did feel uncomfortable with pseudocodes and flowcharts, but as the classes progressed, I felt more prepared and confident. The first project helps to start the framework of the code to help prepare what the code blocks need and do not need. The second project helped me focus more on coding and how to implement tasks that can also be implemented in the real world.

* How has your work on this project evolved the way you write programs that are maintainable, readable, and adaptable?

Throughout the course, I have learned a lot, which helped me feel more confident in developing the projects. I could write maintainable, readable, and adaptable programs by reinforcing clear and concise codes and utilizing the comments that make it easy to understand what was implemented. Understanding the concepts that make the program's quality will help me progress to becoming a software engineer.