Elissa Jennings

Milestone Three

CS499

3/30/25

The artifact I chose for this enhancement is Project Two from CS320. The original project was used for Junit testing and had no functionality for a Java application. The project was programmed in Java utilizing Eclipse IDE. It was created around April of 2024.

I chose this project to enhance because it has a good base code to add to and create functionality. It can demonstrate different data structures within one program. The program can show my ability to add functionality to a program and utilize different data structures and show my understanding of time complexity. The original program utilized an array for storing all the data. I chose to utilize a linked list and a hashmap for data structures. I chose a linked list because that is better for frequent insertions/deletions than an array. The hashmap was chosen because it is fast and efficient at retrieving data.

I achieved the course outcome for this enhancement. The outcome I chose is number two, deliver visual communications that are coherent. I adjusted my in-line comments to be more useful and less cluttered. This enhancement also aligns with course outcome number three. It utilizes algorithmic principles appropriate for the solution.

This artifact involved a lot more effort than I originally thought. It made me understand better how classes work together and how keeping code separate is much better. If I had all my code in one class, it would have been a nightmare. Though my current enhancement is not complete, I had trouble at the end testing my program. I had run it previously with output in the console but the last time I ran the program I had no output at all. Not sure what happened, if it is an Eclipse issue or not.

Questions:

I wasn’t sure what would be better for my program. I originally started to code out the linked list manually to show my understanding of how it works with nodes. However, Java has a built-in library for a linked list which is more efficient. What would be better being efficient or demonstrating understanding?

**Status Checkpoints for All Categories**

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| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| **Name of Artifact Used** | Artifact Name: Project Three, utilizing functions to process file data.  Origin: CS 210, C++ | Artifact: Project Two, Junit Testing  Origin: CS320, Software Testing | Artifact Name: Project Three, utilizing functions to process file data.  Origin: CS 210, C++ |
| **Status of Initial Enhancement** | Completed. | Submitted but it needs more enhancement. Ran into issues testing program. | Planned but not completed. |
| **Submission Status** | Submitted 3/23/25. | Submitted 3/30/25. | Not completed. |
| **Status of Final Enhancement** | Not completed. | Not completed. | Not completed. |
| **Uploaded to ePortfolio** | Not completed. | Not completed. | Not completed. |
| **Status of Finalized ePortfolio** | Not complete | Not complete | Not complete |