CS 499 ePortfolio Selection and Software Design Document

**I. Category One: Software Engineering/Design**

Software engineering/design is the process of developing software programs or applications to help achieving certain goals. Throughout my college career in the computer science program, I have acquired some knowledge and some best practices to develop and design computer applications.

One application that I created was an inventory app to track inventory in a warehouse. This was a simple program I did for school that was written in java programming language. The users had to login or create an account if never logged in before in order to access any content in the application. My plan in this course is to enhance this application by improving the logic flow and fix some of the possible logic errors. I also need to make sure that the mechanisms for adding and removing items from the inventory are properly stored.

App opens: Display Inventory item

Authentication User

Start App

Add and remove items from inventory

Increase or decrease number of items from invetory

**II. Category Two: Algorithms and Data Structures**

The algorithms and data structures for this application seem to be very simple. An algorithm is used to display the items from the inventory if the user’s credentials are matched. That is after the user is logged in, all the items from the inventory are displayed then, he or she is prompted to three different options from the available mechanisms; add or remove items, increase or decrease items, then setting up alert when a specific item reaches zero. I plan on enhancing the algorithm to better retrieve information from the inventory by modifying the data structures using array lists to store the inventory items. Also, I want to write an algorithm for setting up the alert.

Display inventory items

Credentials matched

Start

Yes

No

Login error

If new: add item to list

Else: remove

Specific Item == 0 send alert.

New item == x + 1 then add to list

**III. Category Three: Databases**

I do not have much experience dealing with databases so I did not do any research on which best suits my application. Therefore, I plan to use the SQL database system to store the application data and I believe that it is capable to do the work due the variety of sources that it provides. Since multiple users may access the application, I planned to use the four functions, create, read, update, and delete to better assist the users and should help avoiding double entries or changes. That is when one user makes a change the system will not allow the same change to occur a second time in the same database.

Credentials matched

Check for credentials

Start

Look for duplicates

CRUD inventory

Credentials don’t match

Duplicates found

Update database

No

Yes

Update cannot be done

**IV. ePortfolio Overall**

After fulfilling all the proposed enhancements above as planned, the inventory application will be improved while providing a more accurate result and will make the process of CRUD functions quicker for the authorized user. I don’t notice any gaps relative to the course outcomes just yet as it shows a clear expectation. However, while evaluating the performance needed for the application some mentoring from the instructor will be very helpful. One of the weaknesses I want to address is, the inventory application system may meet the user’s need as I understood the requirements, however, some work was probably not necessary. Therefore, including the feedback from the instructor will help improving the process while choosing the appropriate software development life cycle method.