Narrative

Inventory App Application Artifact

Zane Russell Brown

Southern New Hampshire University

CS-499 Computer Science Capstone

Formal Code Review: https://www.youtube.com/watch?v=dG797aGsOug

GitHub Pages: https://github.com/BeardedArtist

CS-499 Computer Science Capstone
Inventory App Narrative
6/17/2021
Zane Russell Brown

Inventory App

The Inventory App is an application that allows users to keep track of and organize their own business stock and/or inventory or personal items. The features that were required of this app were a username/password login system, a grid layout that will display the user’s items and a database that would hold said items, and finally a SMS messaging notification system that will allow users to give permission to get access to notifications that will let them know if their stock reaches zero.

This application tackles each of these functions and provides the user with an easy-to-understand user interface and simple controls that will allow them to use the app quickly and efficiently. Additional functions were added to the app such as a *delete all* button that allows the user to quickly erase all items in the inventory instead of one at a time. Other additional functions include an information and creator button and user’s permission screen that will give them some information on about why giving the app permission could give them some benefits.

The Inventory App was created in an eight-week period between the months of April and March for the mobile architecture & programming course. This course taught us how to use Android Studio as well as the java programming language. The Android Studio IDE has a fairly simple learning curve, and I was able to learn how it works in a short amount of time. However, the java programming language had a much steeper learning curve and ended up being one of the most difficult programming languages I have developed with. Despite this, making this app was both a great learning experience and a lot of fun.

Justify the Inclusion of Artifact

When we were tasked to select 3 artifacts for our ePortfolio, I struggled choosing what artifact would best fit. However, the first artifact that came to mind was the Inventory App application. The reason I have included this app for my ePortfolio was because this artifact focuses on the three key computer science areas, software engineering and design, algorithms & data structures and databases. The artifact relates to software engineering and design from the design documentation that was created during development. The design documentation focused on UI design and program implementation. As the program was being developed, it went through several iterations and the documentation as well. Next, this artifact relates to the algorithms and data structure area from its various coding data structures that make up its algorithm to perform the required functionality. Finally, this artifact relates to the databases area due to it's use of databases in order to keep record of user's username and passwords and inventory items.

The Inventory App application is the strongest artifact that I am including in the ePortfolio. This is because each component of the artifact showcases my skills in software development. As stated above, before development began, I developed documentation for the design and implementation of the program. This included UI plans, functionality requirements, development timeline and additional documentation that correlated with the various iterations that were done. Once this step was completed, development of the program began. The code that was created for this program was implemented using the java general coding standards. Each class was carefully created and tested to help ensure correct functionality of the program. The classes showcase my skills in creating easy to read and functional code. Additionally, the UI components of the application showcase my skills in designing and creating functional UI for mobile applications.

Reflection

CS-499 Computer Science Capstone
Inventory App Narrative
6/17/2021
Zane Russell Brown

During the development of the Inventory App application, several iterations were made to the design and functionality of the app. During these iterations, testing and refactoring took place. However, after completing an informal code review of my project, several issues were discovered that the original testing and reviewing process did not find. I realized then that a code review is a vital part of the development process. Once these issues were discovered, the enhancement phase began.

Enhancing this project was extremely fun and satisfying. Having additional time to work on the program and seeing it come together both allowed me to experience the development process more, but also allowed me to expand my coding abilities. During the original development, time was an issue and more complex features could not be implemented. However, with the additional time provided to me, I was able to practice more advanced programming features such as notifications and databases.

During this enhancement phase, there were not too many difficult challenges that were met. However, as I had no prior experience with notifications, learning how to implement this feature posed a significant challenge. A lot of research and time was spent learning how to implement this feature. Eventually, I was able to implement a feature that notifies the user when their inventory is empty. This feature was originally planned for the first development but was scraped due to time constraints. With the extra time I had, I was extremely happy to implement this feature.

The Inventory App artifact was enhanced in various areas. During the code review, several issues and bugs were found. The list of enhancements can be found here:

- **First: Minor Fixes**

- Update Variables with more meaningful names. **(COMPLETED)**
- Update screen name on last screen to “User Permission”. **(COMPLETED)**
- Get rid of unused variables. **(COMPLETED)**
- Get rid of unnecessary Toast test messages. **(COMPLETED)**
- Erase unnecessary comments from DisplayInventory. **(COMPLETED)**
- Fix inconsistent spacing in blocks of code. **(COMPLETED)**
- Fix spacing in the Import statements. **(COMPLETED)**
- Erase IF/ELSE statements that are not needed in MYDBHelper. **(COMPLETED)**
- Comment ALL classes in the artifact. **(COMPLETED)**

- **Second: Normal Fixes**
  - Fix “attempts left” functionality. **(COMPLETED)**
  - Fix Alert that outputs both options. **(COMPLETED)**
  - Return to main screen after adding and updating items. **(COMPLETED)**
  - Make “owner” text larger for recycler view objects. **(COMPLETED)**
- **Third: Major Fixes**
  - Implement user permission functionality. **(COMPLETED)**
  - Implement a feature that doesn't allow users to enter strings in the numItems field in addItems and Update Items. **(COMPLETED)**
  - New bug: If no value is entered in the AddItem screen, it crashes. **(COMPLETED)**
  - Add functionality to the "help", and "info" buttons. **(COMPLETED)**

As we can see from the above list, there were a lot of enhancements to be made. Fortunately, all planned enhancements were made and completed in order to produce a quality program.