**Britney Hurley**

**CS-499**

**Prof. Bermudez**

**February 2, 2025**

**Enhancement Two Narrative: Implement a Sort/Search Feature**

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

The artifact I have chosen to complete the Algorithm and Data Structures Enhancement is from the CS 360: Mobile Architecture and Programming course. With Project Two of that course my goal was to create a mobile app through Android Studio. The application’s intention was to be a warehouse inventory application that could hold and display data for inventory within a warehouse or similar environment. The original file was created in August of 2024.

**To access the product:**

* Download Android Studio (latest version and any updates).
* Import the file folder into the software.
* Build and run the project.
* Add a ‘new device’ to view the project on and ensure it loads properly.
* At the login screen utilize the username: SNHUAdmin and password: SNHU123!
* Click Register, then Login and navigate app appropriately.

1. **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 algorithms and data structure? How was the artifact improved?**

I selected this item to align with the course outcomes 3 (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) and 4 (Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals). This enhancement demonstrates the ability to design and evaluate computing solutions by implementing sorting and searching algorithms that address specific user needs, such as prioritizing data and improving search experience. By applying algorithmic principles, such as custom sorting algorithms and efficient data filtering, the project displays how design choices impact performance and usability. The implementation balances trade-offs between complexity and efficiency, ensuring that the solution remains both effective and scalable. Additionally, using industry-standard tools and techniques, such as Android’s built-in libraries and data handling practices, ensures that the solution aligns with well-founded, innovative practices that deliver value and support industry goals.

The artifact was improved through the creation of a sort/search feature through RecyclerView. Previously my app had no way to sort through data.

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

I believe at this point I have met the course outcomes accordingly and have no additional outcome-related updates currently.

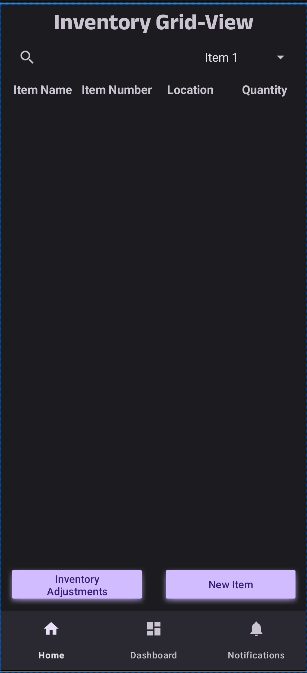
1. **Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**

Reflecting on the process of enhancing and modifying this application, I have learned that it can be quite challenging to maintain the proper sizing and display of UI elements while also adding additional features. A good fix I had learned involved utilizing the automatic constraint feature – so that all instances are properly scaled. Another challenge involved correctly connecting the proper code and fragments to ensure the sort/search was being used properly. The best solution I had here involved trial and error.

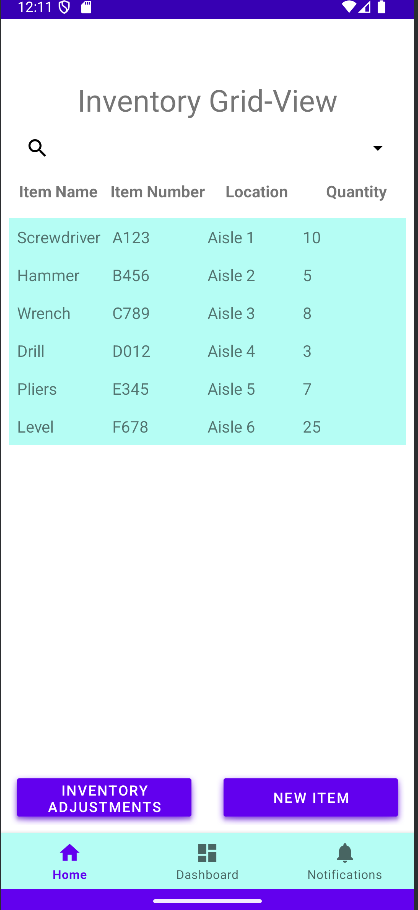
1. A screen shot of a phone

   Description automatically generated**Screenshots provided to demonstrate enhancement progress:**

Initial screenshot of the Inventory Grid-View screen (fragment\_database.xml) with no sort/search feature present.

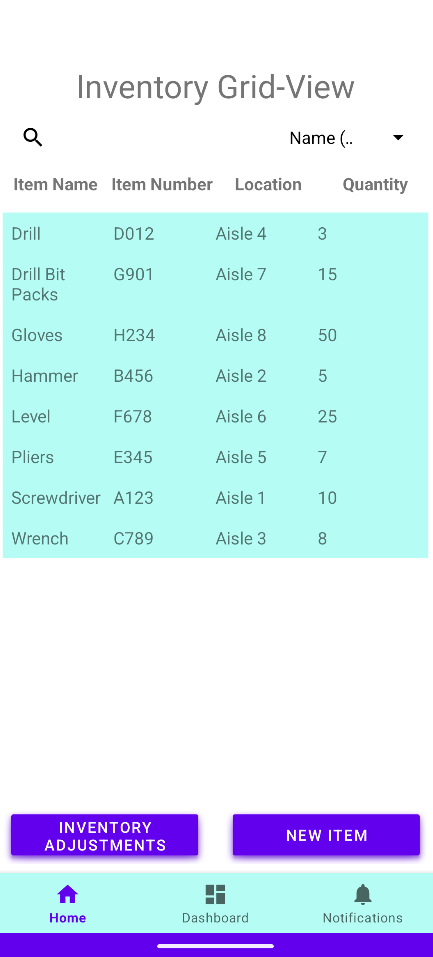
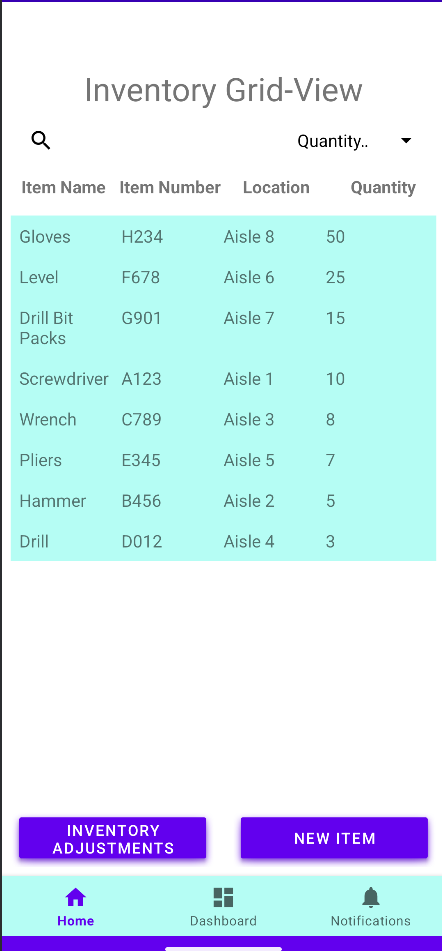


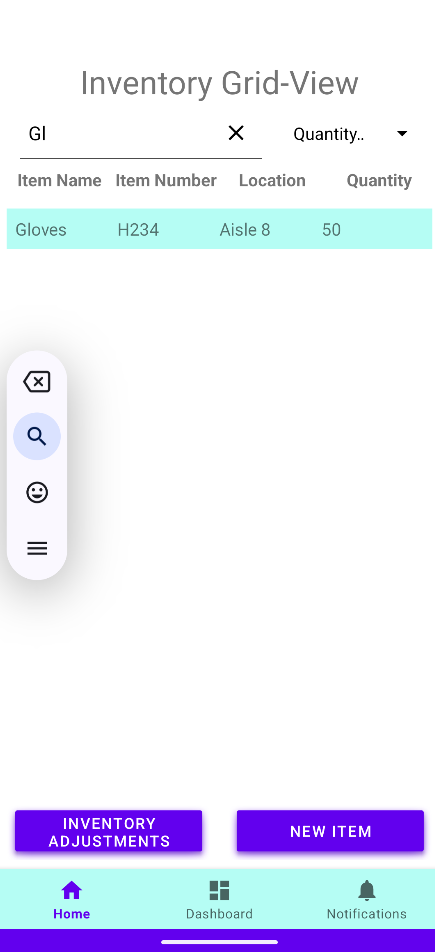
Screenshot demonstrating the design view of the app after the RecyclerView and inventory item headings were created.



Screenshot of RecyclerView from the app format – filled with data:

Screenshots demonstrate the sort by feature, utilizing both the ‘Name A to Z’ and ‘Quantity High to Low’ sort options.





Screenshot demonstrating the search feature, I’ve typed in ‘Gl’ and the only item with the corresponding letters pops up. A user is also able to search by Item Number, Location, and Quantity.