Design Document for Warehouse App

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Status: In Progress

Concept Summary

The purpose of this project is to create an app that will help keep track of items being stored in warehouses. As we all know businesses often order their items in bulk ensuring that they have enough supply to meet the demand of customers. Most of the supply is held in warehouses, and there are instances where supply could get miscounted or “lost” when shipping items in and out of a warehouse. With this app, businesses will be able to keep a detailed log of the inventory moving in and out of a warehouse to ensure fewer mistakes are being made. If a mistake is made then the app has an accountability feature that requires an employee to make an account. This will lower the number of mistakes being made saving businesses the money they would have otherwise probably lost due to negligent workers.

Audience/Customer

- The intended audience for this app would mainly be businesses that need to store items and keep detailed tracking of those items. This could range from small businesses to large business chains. An example of a business that would be interested in an app like this would be retail businesses as they tend to store a lot of their products in warehouses to then ship out to their various locations to sell.

- Additionally, small businesses that just need a simple way of managing their products would find this app beneficial.

Background

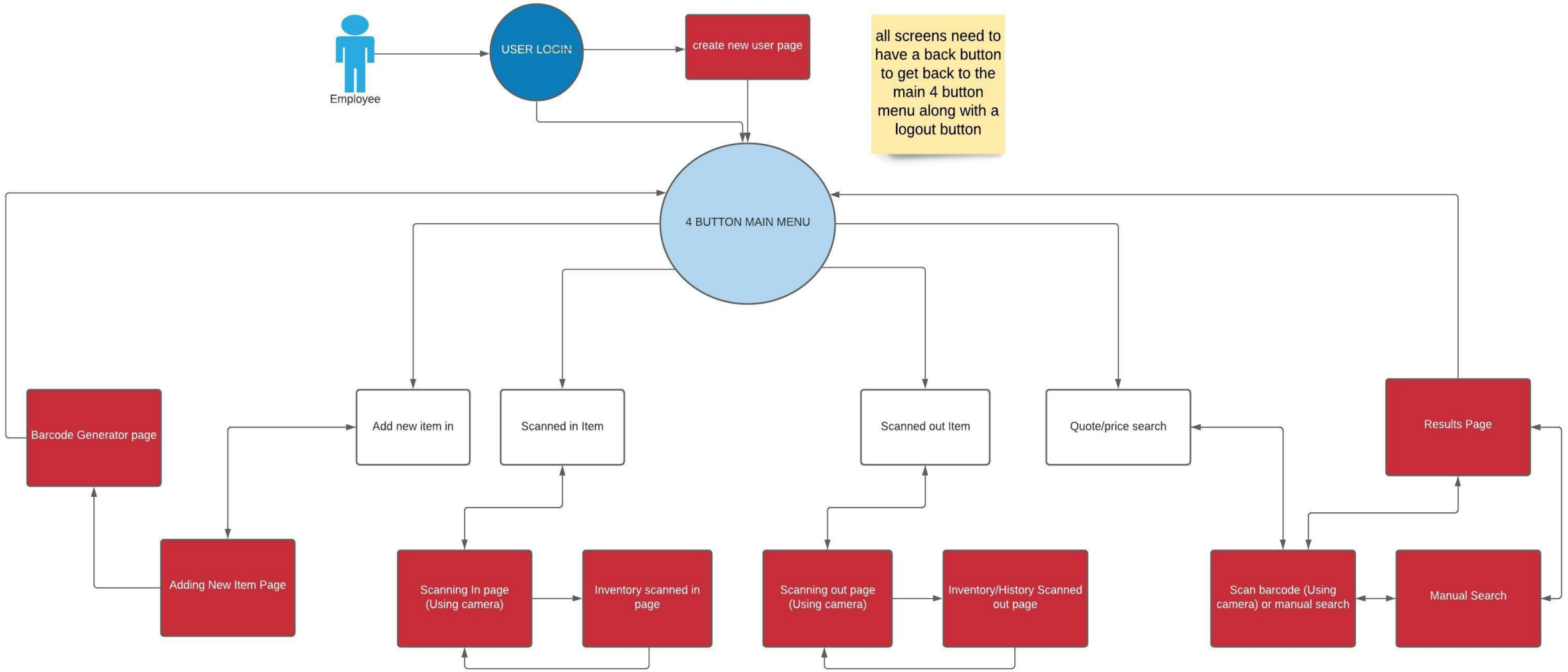
- The background information necessary to understand the project includes the appropriate price and quantity of the item the user chooses to add to or remove from the database according to the brand. It would also include definitions and current events for updates of the app’s features.
- Some information that could be useful for understanding this project could be the terms shrinkage, and warehouse optimization. The term shrinkage is used in business when there is a loss of inventory. It is usually associated with employee theft, shoplifting, damaged items, and miscounts. We’ll focus on miscounts for the purpose of this project. With the accountability feature on the app, it will apply extra pressure to employees to not miscount items being checked in or out so as to not receive punishment. The other term "warehouse optimization" refers to making a warehouse as efficient as possible. With the practical design of the app’s interface, checking items in and out will be done in no time ensuring more time is put into optimizing other areas of a warehouse.

Application Cost and Projected Success

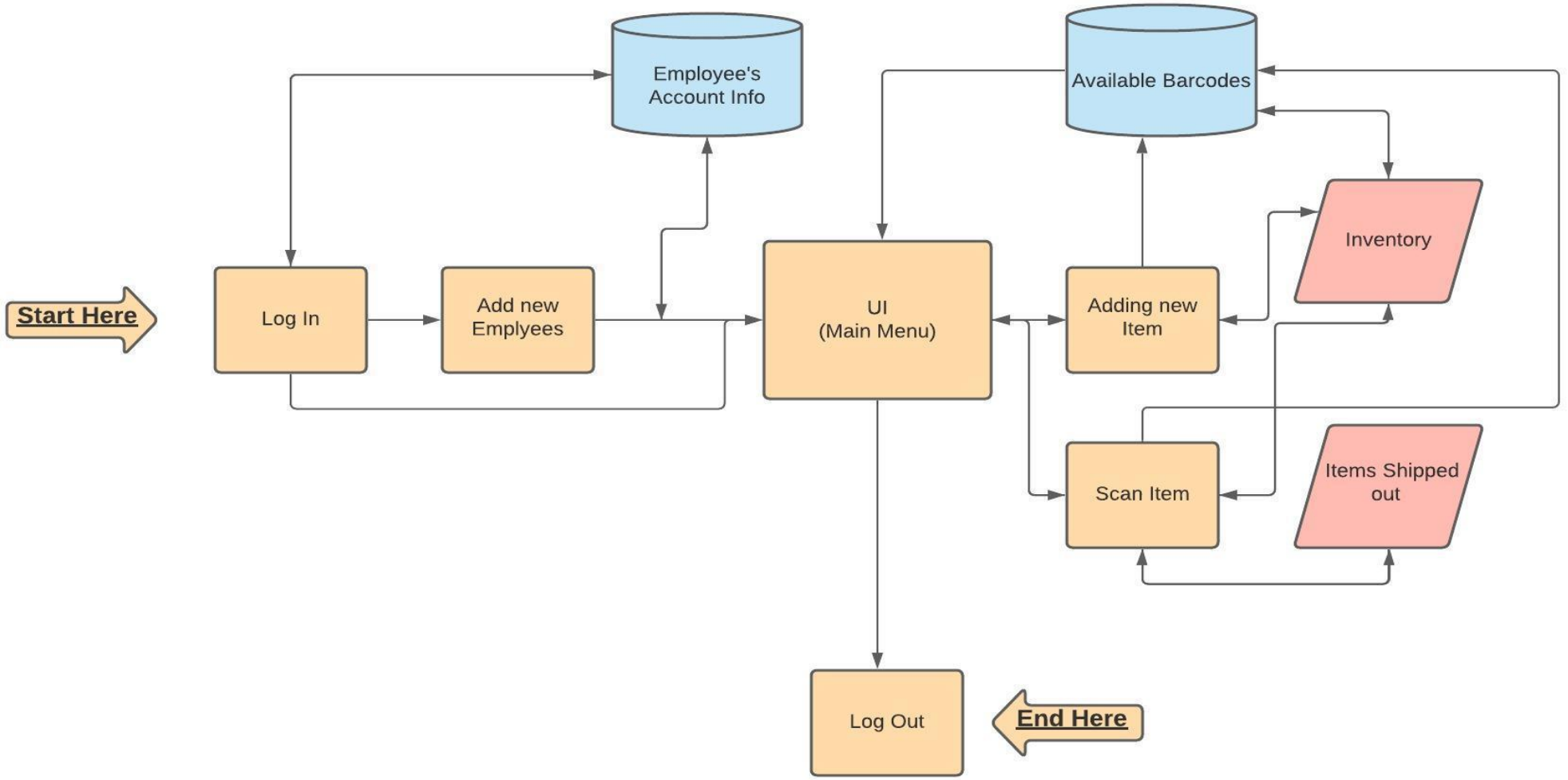
- For application cost, we would start with our app being a free app. The idea is to obtain a good start with some people, to later more people purchasing our app while we fix bugs or add more features suggested by customers or self-decided. Then we would start to increase the price as our projected success starts to increase, starting with $0.99.
- Another route can also include a month free a company has to pay for using our application. (After further updates)

Interface Mockup

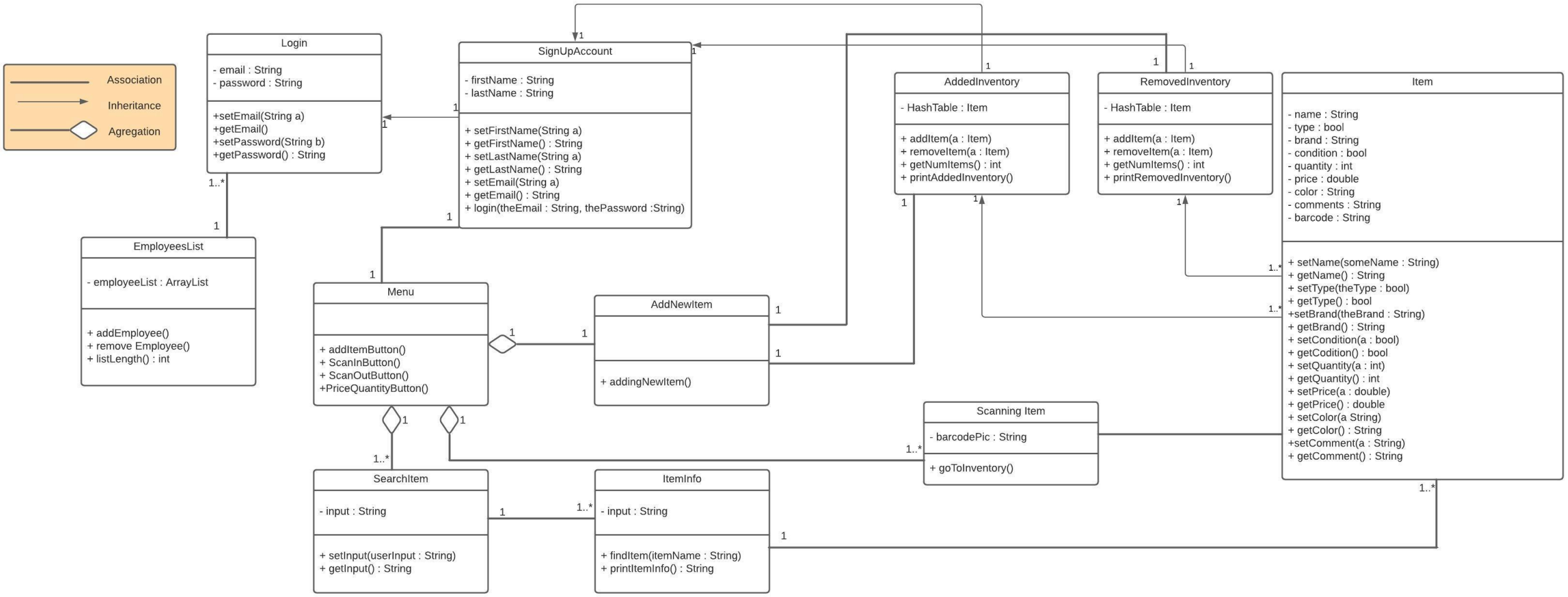
Design - Use Case Diagram



Design - Detailed Design Part 1
System Diagram

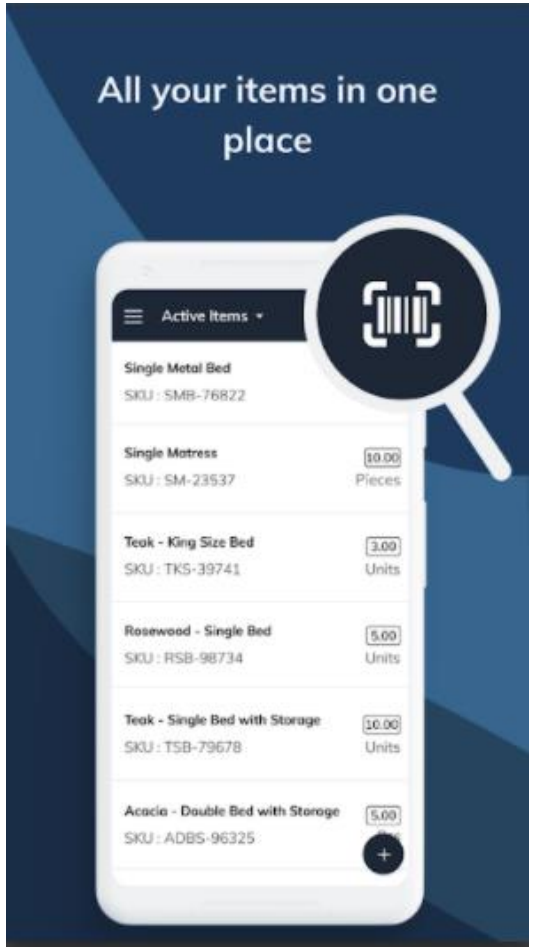


Design - Detailed Design Part 2
UML Class Diagram



Related Work

- Related products would be Warehouse management, Easy Inventory Management, and the Inventory Management app - Zoho Inventory from the Play Store to hold items in users' inventories. The Zoho Inventory Management app enables small businesses to effectively manage inventory and non-inventory items for shops and warehouses. It lays all the items in one place when the user looks through the list of active items in their inventory. It contains options to handle stock between warehouses, manage contact details, and generate sales orders.



Inventory Management App – Zoho Inventory

Frameworks/Services/Cloud/Backends

- Since we are building an Android application, we will be using the Android framework within Android Studio. We'll be managing the backend with Google Firebase. Which will provide tools for tracking analytics, reporting and fixing app crashes, and managing databases.

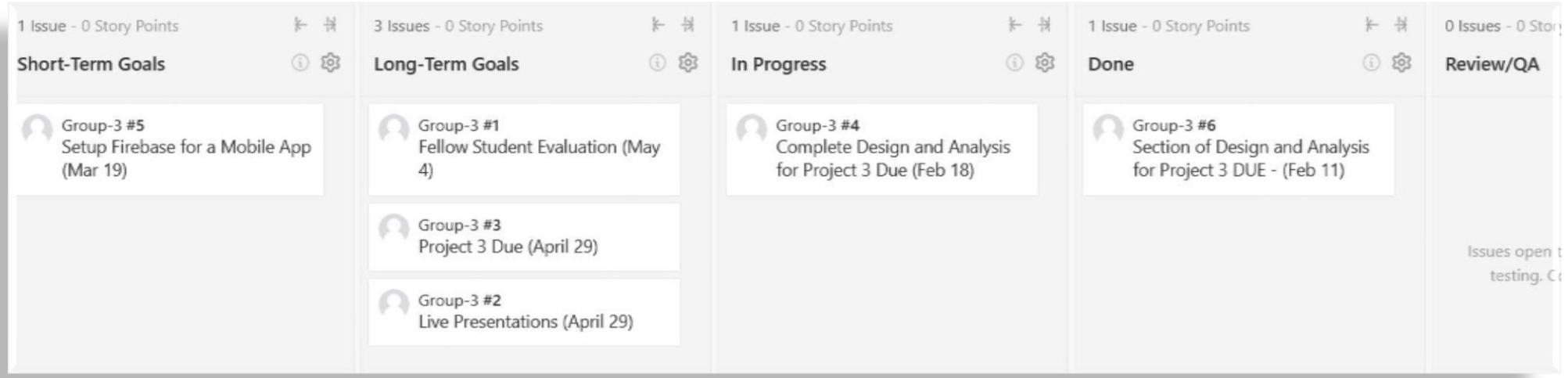
Testing

- A first account, normally a test account would be created by a volunteer from the industry. The volunteer would then try adding a new item and accessing the barcode and the quantity of the item which they inserted into the app. They would then try scanning in an item with the camera to check the inventory, as well as scanning out an item from the inventory. The volunteer will finally scan an item to read its quantity and price. They will then fill out a survey on their experience with our app and provide comments on how it can be improved.
- During the development of the app, a Twitter, Instagram, and YouTube channel would be created for the app, where updates and new features of the app would be posted. Customers would have access to leave comments and criticism on the app, sharing their opinions on what should be changed in order for us to reach out to them.
- Additionally, the framework “Jnit” will be used throughout the development process to ensure no defects are found in our code. And to eliminate any error found.

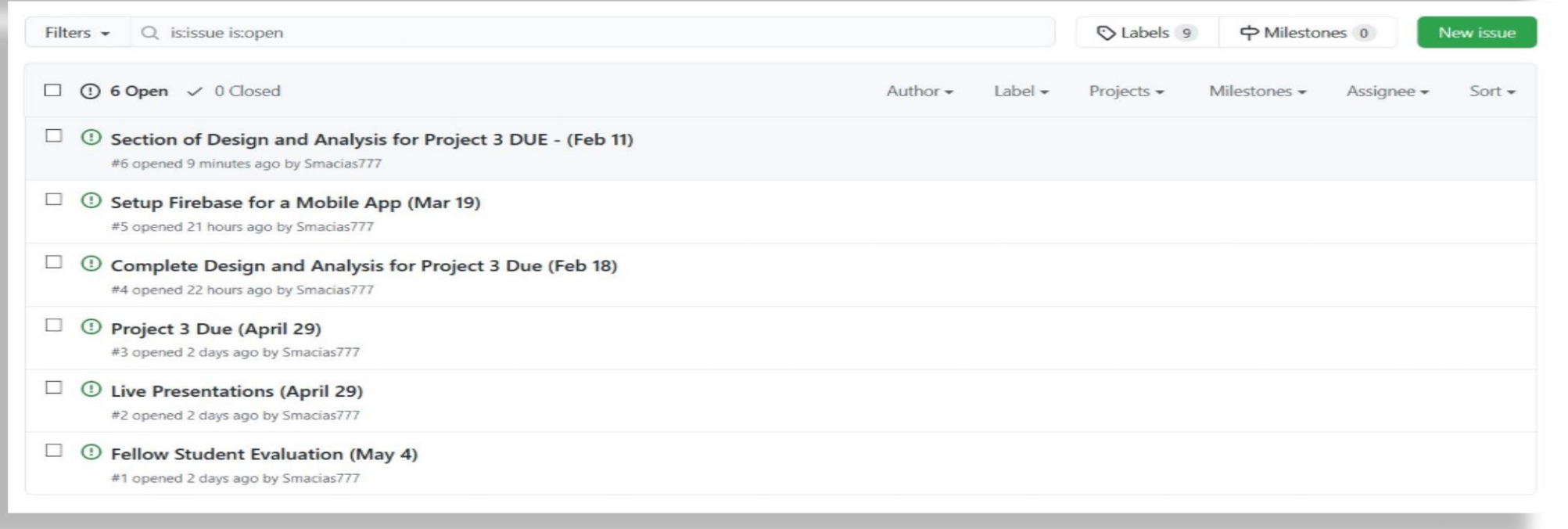
Schedule

All the important deadlines were placed within both ZenHub and GitHub. We would then split the work accordingly, adding any additional issues that need to be worked on throughout the process.

ZenHub



GitHub



Dependencies

- Some dependencies required for this application would include the need for a collection of data for every single employee. Each employee has their own account. This app would have a personal profile for each employee and all the work done by that employee would be found in that account. Thus, if any mistakes are made then it would be clearly seen in the data collected by the app. Additionally, data for each individual product would be needed. Just as each employee has a personal profile, each product in a way also has a profile with specific information. Lastly, a camera API is required for this application. As it is one of its main functions that will allow any employee to process products quickly.