Becky Scott

CS 360

1/22/2023

Project 1: App Development Proposal – Option 1 Inventory App

**Project Goals**

The goal of this project is to produce a mobile app which will allow a company to manage their inventory with ease and precision. The app should be connected to a main database containing all the inventory data for a company, including item number, item description, quantity, and warehouse location. The app will have users with different access rights, so the app will need role-based access controls. The user roles will be stored in a separate database. The major components of the app will be pages that allow users to read from the inventory database, and another which allows users to add new items and edit existing items in the database, provided the have sufficient permissions. Additionally, the app will need a search function to find inventory items by an ID or by a description.

**Application Users**

There are 3 main user groups for this app: warehouse workers, purchasing department, and customers. Warehouse workers will interact with the app to perform their job of storing items in the warehouse, retrieving items to fill orders, and updating the inventory database to reflect the current stock. To achieve these goals, warehouse workers will need to read items from the database, and be able to use the search functionality to find inventory items. Warehouse workers should also be able to edit quantities of items, and the location within the warehouse.

The purchasing department’s goal will be to make sure that items stay in stock as they are needed for the business. The purchasing department will also update items in the warehouse to tell the warehouse workers that an item needs to be retrieved for shipping. To achieve these goals, the purchasing department will need to be able to read the inventory database, as well as search on item number and descriptions. The purchasing department will also need to be able to edit inventory to flag it for shipping, however they won’t need to be able to change the quantity in stock or the location in the warehouse.

Lastly, the customer’s goal is to understand if an item is in stock. The customer would be interacting with the application through a storefront or web page with the goal of buying items. The customer should be able to search the stock, and purchase items.

**Application UI**

The first screen a user will interact with is the login screen, which should contain a place to enter their username and password, and a button that will try to log the user in to the app. After logging in, the users should see a listing of the inventory and key high-level data, such as the description and amount in stock. The screen should also have a text field and a button on top that will allow the user to search for inventory using key terms.

Warehouse and purchasing department workers should be able to select inventory items and load an additional page with relevant data and new UI elements. This page should also include the ability to modify data that the user is able to edit, and two buttons: one to save changes and one to discard changes and return to the list.

**Functional App Requirements**

The app will need a function to support the login function. This should take the username and password given by the user, and search them against the database of users with valid credentials. It is considered a best practice for security to not store passwords in plain text in the database, so this function would likely convert the password to a hash function before comparing it to the database value. The function should also give the user a particular session role, which will let them access the correct elements.

To display all of the inventory data, the app will need a function that reads all of the relevant information from the database and print it to the app in a table. The table will need to be interactable to allow handling onClick events when the user selects a row. As well, the table will need to be able to save edits to the inventory data when corrections are made.

To support the search function, a function will need to be created to take in the search term, and search the database to find relevant items, and then display those to the screen in a table.

The app will also need to support a function to update the database based on the input received by the user. The app will take the item id, and the update data, and will update that row in the database with the new data.