CS-360-J7037 Mobile Architect & Programming

Module 3-3 Project One: Inventory App

Stephen Owusu-Agyekum

Southern New Hampshire University

September 16, 2023

The mobile app I have chosen to work on is option 1, which is the Inventory application. The inventory app will perform multiple functions, such as tracking inventory counts and keeping track of stock and supplies. Businesses can track parts across global job sites and improve the accuracy of inventories. It will have a function where the first-time users of the app will need to create a login account that will be used to get access to the inventory database system. A user must have a username and password to create and use the account when logging in.

Additionally, the app will contain a function that automatically stores the user's username and password (in a hash form). In order to make sure the app is secure; it will also have the functionality to confirm that only legitimate users can access it by validating their login information. The app should be able to add, remove, and track increment inventory and alert users when any inventory item's quantity is below the required allowance list in the system. When the inventory app is launched, a screen with a grid displaying inventory will appear, which users can follow to track the inventory.

I would have to keep the app's users in mind while building it and ensure the interface is simple to use and doesn't need specialized and technical training, guidance, or instructions. The inventory application could have a wide range of users, from professionals managing inventory in a warehouse, Pharmacists tracking the drugs in their hospital, farmers tracking inventory counts of their livestock, restaurants keeping track of their supplies, etc. Keeping track of the medicine stock in a hospital, goods in a warehouse, and supplies in restaurants and identifying what is getting low in stock or what is ordered high in stock will always help the company decide whether to cut down or increase the supply of such items.

Moreover, this software would also be handy for keeping track of common household supplies like food items and toiletries that wouldn't require much effort to count. The app can be used by workers and managers in Target, Walmart, Amazon, and other industries to keep inventory counts of their supplies. The user interface, like the grid view, can be used by all users, from a manager at the workplace who keeps track of office supplies to a logistics supervisor who monitors inventories for orders to be satisfied.

Access to the app should require users to log in with their username and password to prevent any unauthorized alterations to the inventory. While logged in, users should be able to navigate through different screens and use them to complete their specific tasks. Also, the user's account should be blocked when multiple login attempts occur, and the inventory manager or system administrator should be able to unblock it. There should also be a button that will be pressed to log out or log off from the app.

The most important factor I must consider is the application's user requirements. One of the requirements should be that users will require a user-friendly Interface for the program to meet their inventory demands. When a user clicks on the app, they must first be sent to a login screen with text boxes where they will be prompted to enter their username and password. After entering this data, the user needs to press a button like 'OK' or 'Login' to verify the credentials across the databases that store their usernames and passwords. If the user's information is incorrect, they should receive an error notice and be requested to provide the proper information or click a button to reset their password, enter the correct username, or register for a new account.

Once the user's login credentials have been verified, the user shall be taken to a page or screen with a table arrangement showing each item's picture and with a brief description of the item, the item's price, if available, and the number of stock available in the warehouse. The grid

view would include buttons for editing or updating item information and adding and removing items for the user. Whenever a user taps a product, they want to change the quantity of the item they currently have in stock, users are taken to a menu where they can change the number by increasing or decreasing the item by the specified amount. If an item is below its required stock allowance or there is zero in stock, the user should be notified for reorder.

The efficiency and functionality of the app will also depend on the code quality I will use. Therefore, I have to ensure that proper testing is done and there are no errors in the code by following the industry standard practices. The level of the code's quality will determine how trustworthy, secure, and safe it is, and it may also impact how well the inventory application functions as a whole. I have to ensure that I meet all the user requirements so that they can use the app easily without having any difficulties, and any form of errors should be resolved by the users.

When a user closes the app or the screen becomes inactive after some minutes, and they open back, it should take them to the initial login page or screen, which will have the login text boxes to enter their login credentials and buttons to prompt them to create an account for new users or reset password. Since all users' passwords and usernames are stored in the application database, when users enter their credentials and press the login button, the data entered would be validated and authenticated against the password and username already recorded in different databases for security. The 'forget password' button will allow users to reset their password. The 'register' or 'create new user' button would enable users to set up a new login account by entering their data in the text boxes and press ‘OK’ which will then be stored in the application’s database.

The application would provide a grid view with the user's username at the top and a button to open a drop-down menu for adding and removing items, logging out, and altering individual data or profiles after logging in. Any information that the user would change should be able to save

in the database, and the system should reject the same login credentials that another user has already used. Every item would have an image of it, a title that includes a summary, and the quantity of the item's entire stock. When a user taps on the individual item, a small menu will appear, allowing them to select an option to increase or reduce each item by pressing a button or entering a number. If there is insufficient item quantity or the quantity is zero in stock, there should be an alert to prompt the user of stock replenishment or ordering.

The device should have barcode features to scan barcoded items for faster and more efficient inventory counts. Users can use their device's camera to scan a barcode and store that item's data by pressing the add item menu or manually entering the data into the text boxes. It means that all the items in the warehouse should have a barcode label for scanning. When users want to exit the menu, they can press the back button once they press the home button or slide right or left. If an updated item information is not saved and the user decides to exit, they should be prompted to save it before exiting.

Last but not least, the app should be able to store a high volume of data in its database without running out of storage memory, and the data should be highly secured to prevent any unauthorized access. The system administrator should be able to monitor and track all users who log in to the account at any point and ensure that no unauthorized alteration of data is detected. Also, anytime a user opens their profile, they should be able to view and edit the information already saved on the application, including their identification numbers and other personal information like names, email addresses, and phone numbers, and they should be able to update the information on the associated database. When a user deletes an item, a prompt should ask the user to confirm the item deletion, like, 'Are you sure you want to delete this item?' with an 'Ok' or

'Cancel' button. Pressing the 'OK' button should delete the item and pressing the 'Cancel' button should keep the item in the database.

References

Design & plan : android developers. Android Developers. (n.d.). https://developer.android.com/design

Chakraborty, A. (2023, January 8). *Inventory management software system features & requirements*. SelectHub raquo. https://www.selecthub.com/inventory-management/inventory-management-software-top-features-requirements/