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**3-3 Project One**

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The first goal of the inventory application is to provide workers and staff with a secure, user-friendly solution to track the inventory of the warehouse or beyond. Something quick and easy to use will be necessary. The more hands-free work everyone can do, the better. This is also prominent for preventing costly human error. Reliability on this application should mean that there are safeguards in place to ensure that no data loss can occur, and if downtime needs to happen, it needs to be something that doesn’t bottleneck workflow. We can leverage costs for client-workers by making workers use a smartphone through a secure connection. This is better and cheaper than using proprietary hardware that can be lost or stolen.

There are multiple necessary core components to make the application successful. We will need a database, login system, inventory grid, the ability to complete CRUD (create, read, update, delete) operations, an alert system for when inventory runs out, and a barcode system for quick entries. This app will use an HTML based system, so it can be accessed and managed cross platform.

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The inventory app is useful for most types of workers and staff within the company. It is especially useful to warehouse workers, who will be logging and adjusting data to keep inventory up to date. Managers must also be able to see inventory along with worker activity to complete their tasks or investigate efficiently. Auditors will also need access to the inventory application to ensure that records are accurate. IT personnel will also need access to the application to do maintenance, functionality checks, and user management.

An easy-to-understand user interface that can be picked up and used by anyone will be important to prevent any needed training or learning curves. The application will need to be run on a wide variety of mobile devices. IT workers will need integration with familiar Microsoft tools like remote administration tool to manage users and other information with the application.

Every necessary screen in the app will include a login page, account recovery page, Auditor history page, sortable inventory grid, inventory and user search function, account management page, add custom item page, administrative tools for controlling the application’s services and administrative logs on performance history.

The main page after logging in should have a hamburger menu in the top left corner, when pressed, or by swiping left to right, it should open a navigation drawer for more options, especially if the user is part of the auditor or IT department, where both departments have appropriate tools for searching or controlling the system based on what their jobs require. The top should display a very obvious search bar and the right side should be some quick sort options. Pressing the hamburger menu or swiping right to left should open up more sort options

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along with a personal activity history. There should be navigation help popups until the user disables them.

The database for the app should include at least an inventory table, and a user table. These tables should include a string for the item name, an integer for quantity, and an ID for the barcode scanner so it can point to and adjust the data for the correct entry in the database. The table for the users should include the username as a string, a password as a string, and a string value acting as a label for the user type. The user type gives different permissions to the user. You don’t want workers to have access to anything they aren’t qualified for.

Permissions should be enacted for new users when creating an account. You don’t want a stranger who has access to the local network to be able to make an account and view or manage inventory. A basic account needs to be created, then the worker logs into the app to finalize it. We also need user management from the IT department to manage access for workers, especially if they don’t work on site anymore.

Backups and uninterrupted power supplies or backup generators will be needed to ensure downtime or hardware failure does not include data loss or service loss. Downtime prevention, even in high use environments, is paramount for a dependable product.