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CS 360

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The purpose of the Inventory App is to develop an easy-to-use tool for managing warehouse stock. Users can track items, manage quantities and receive alerts when supplies fall low through this app. The idea is to streamline these processes and have the app do it for the user, faster, without hassle of failures or needing inventory at any stage.

The Inventory App will consist of some main features. It is going to start with a simple database having two tables, one for login/user creds and another for items in inventory. "Having a setup like this makes sure your inventory data as well as user information is organized in the proper way. The users will land on a login page and have options to either sign in or create a new one. When they log in, they will see a table with all items like name and amount of inventory. The application will be simple with features such as adding, deleting and adjusting item counts. It also makes sure users will receive basic notifications when something runs out of stock, so you can prevent costly overstocks.

The application will have different beneficiaries, i.e., warehouse managers, currents staff and IT administrator. Managers will use it to check stock and replenish orders. This way, warehouse staff can use the device to update inventory records swiftly. User accounts will now be theoretically managed by IT administrators, and they are responsible for how the app should perform securely as applicable. The app can cater to the need of each individual user group’s requirements. Managers want to set the right levels of inventory; staff wants an easy way to update their interface and IT Admins need basic access control and user management features.

The app design will have quite a few screens and features to make this app user-friendly. The login screen takes username and password fields, a log in submit button as well as sign up link for new users. The inventory display screen is divided into a grid where users can see their item names along with the items in stock and relevant information to easily navigate through the companies' lists. This would include input fields for entering item details, buttons to add or remove items and basic controls to change the quantities on the product management screen. Basic notification system via pop-up alerts to let users know how low stock is.

The navigation of the app starting from users will be logged in page. They will then be redirected to the inventory viewing screen where they can look for items in the way that is easiest for them. Then they can proceed to the item management screen by either tap on an item or a Button "Add Item" From any screen, users will be able to receive the notifications at a glance so that they are always informed about right stock. It will result in a good user experience so that they can navigate more naturally. App features will be compiled into the code and linked to UI by clean data flows and components.

Text fields for both the login and password, a login button, a sign-up button (for example). User credentials will be verified by AuthenticationService. ListView will be used for displaying items on the inventory display screen and android's SearchView can potentially work to filter results. The item management screen will contain simple text fields to input item information, add and remove buttons as well as a basic number spinner for easily changing quantities. Would use an AlertDialog for notifications and then have a system to monitor inventory levels, getting alerts when they reach the defined level.

The app will be built on Material Design guidelines to ensure a familiar and smooth experience that works with Android devices. The app will be responsive, to work in the various screen sizes and orientation (hopefully). Security, of course, will be a prime concern - user authentication and basic data protection.

We can summarize that the Inventory App is for Warehouse Managers as well as field staff and also IT admin. Adherence to user-friendly design enhanced with respect to Android guidelines makes inventory management more effective and precise. This proposal presents a roadmap for creating a simple and user-friendly inventory management system.

**References**

* Android Developers. (n.d.). Design for Android. Retrieved from <https://developer.android.com/design>
* Nayak, M., & Mohanty, S. P. (2020). Design and implementation of a smart warehouse management system. *International Journal of Computer Applications*, *176*(19), 1-7. https://doi.org/10.5120/ijca2020920688
* Reed, R., & Deshpande, Y. (2018). Usability engineering: Scenario-based development of a user-centered inventory management system. *Journal of Software Engineering and Applications*, *11*(2), 59-72. https://doi.org/10.4236/jsea.2018.112004