**Goals**

**Creating an inventory application will set a few goals in motion. The biggest is serving a purpose for multiple different types of users. Trying to accomplish an application that will serve all user's needs means the application must be as simple as possible. To appeal to both personal use users and business users, this application must be free up to a certain number of items the application can hold, with an option to pay for more extensive storage. Personal use users may only need to keep track of items in a small space and won’t be interested in the application if they can find others for free. If the application is easy to use, serves the main needs of the user, and is free, they will choose this over the competitor. For business purposes, the application needs an option for additional storage. For a small business that could be the deciding factor if this is the application for them. They may have to keep track of hundreds of items.**

We must consider the essential user needs, including what that application must accomplish. This application will track all the items the user wants to organize and keep a quantity. The user will be able to add multiple different items with their preferred quantity with a simple button. Each item will also have buttons to increase or decrease the amount. Another function this application will have, is to utilize a login screen that requires a unique username and password. This will be essential to keep a person's profile and personal data secure and personalized. To ensure that a user can get into the app if they do not already have an account, there will be a register account button on the login screen. The application will utilize a local database to store the user's data for the account. This database will be split into two different tables. One will be for the user's login credentials and the other for the inventory data. This application will maintain a grid-like structure to display the inventory to the user. A notification must also pop up to ensure the user knows when any of their inventory reaches a quantity of zero. Overall, the goal is to design a simplistic application that is easy for a user to use.

**Discuss users**

**There are two main types of users for this application. The first one is any person who is just trying to organize their life. This type of user can utilize the application for things like keeping track of what is in their personal pantry. They can add each item they have into the application and a quantity they currently have in it. The application's functionality of being able to increase or decrease the quantity and will allow the user to know how much of anything they have at any time. This will allow them to understand what groceries they may need to buy. A personal user may possibly go for an application called BoxOrganizer for this type of usage. This competitor allows you to create boxes, each with its own inventory. This would be great for doing cabinets, pantry, and refrigerator separately, but the screens can get confusing. Almost all the main functionalities of our application can be done on one screen except for login. The application's notifications will also let the users know what may be needed in a more urgent scenario. If the user is a member of a family that shares the mobile device on which the application is downloaded, the unique login will provide the option to let multiple users have their own inventory on the same device.**

**A second user type would be a small convent store business owner or manager. This user will use the application to help keep track of their stock. As in-stock sells down, they would keep track by lowering the quantity on the application. When they get shipments, the user would press a button to increase the quantity of the item’s stock. Seeing the stock numbers will allow the user to watch sales and know when to reorder for the business. This type of user may be possible for a competitor application called Inventory. The competitor’s application does contain statics that may help follow trends in sales. What will provoke the user to choose our application is the simplicity, which will allow for quick modifications of the in-stock counts. The secure login feature will let the user feel at ease knowing that all the business’s data is secure. The items they sell and how much of that product is needed to make a profit could be a business secret, making this ideal for the user.**

**As a third user for the inventory application, more unconventional uses must be considered. An example would be a student. A student can use the app as a type of checklist. The classes could be entered as a type of item in the inventory app, while the quantity number could represent how many assignments the student has left in that class. This not only makes the application useful, with its main functionality but also, as the assignment gets completed and the quantity goals are down, it will serve as a type of motivation for the student. Our notification feature will enhance this feeling. When an item hits zero, and the notification is sent, the user will then know that a particular class is completed.**

**UI Design**

The user interface or UI will consist of three screens the user will interact with. The first screen they will encounter is the Login screen. Everything on this page will be simi-centered. The application's title will be present on the top of the screen to help signify what application the user is using. Following the title, there will be a field labeled username. A line will be next to the username to let the user know that a username is required here. Under the username, there is a password field. Just like the username, another line signifies that the user’s password goes here. For the filled-in fields to do anything, there will be a submit button after the password field. This button will do nothing if the username or password is incorrect, or it will take the user to the application's main page. After the submit button, a button will be labeled to create an account. This will be used for new users to create a new username and password if one has not yet been created. This layout allows the application to stay minimal yet intriguing. Though at first, it may look like there is empty space under the create account button, it is intentionally like that to leave space to provide a flexible space for the user to interact with a keyboard to input data into the fields. (*Design & plan  :   android developers*)

The next page the user would come across would create an account page (assuming it's the first time using the app). To let the user know what page they are on, there will be a title at the top, letting the user know it is the “Create a Profile” page. This page will look similar to the login page but with more fields to fill out. This page will have four fields in the following order: First Name, Last Name, Email (which will be the username), and Password. Under the password field, there will be a submit button. This button will either let the user know that the username is already in use or will accept the new account and reroute the user back to the login screen to log in. This layout gives a sense of similarity. It will allow the application to feel whole as if it is one thing and not a separate app for which the user is signing up.

The last page the user will interact with is the main application. At the top left corner of the application, a plus symbol will be used to add items to the user's inventory. When the application is new, and no inventory is created, this will be the only thing visible on the screen. Assuming more than one item is already in the inventory, the screen will display the items in a grid-like structure. You can see a minus, a number, and a plus sign on the left side of the grid. This shows and controls the quantity number of the item. On the right side, you will see the item name. Following the grid-like structure, the items are then listed in a vertical list. The layout for this page is built for functionality at its simplest.

A close-up of a paper

Description automatically generatedA white paper with writing on it

Description automatically generatedA sheet of paper with writing on it

Description automatically generated

Submit

Submit

**Code Design**

The application's user interface will have to make a few different calls. This is a trigger for the application to load one page over another. The main component that will activate the call will be different buttons. While looking at the login screen, the first visible component will be laid out using TextView in Android Studio. This component will display the application's name, “MyInventory.” Under the TextView there will be a PlainText(EditText) component. The text in this component will say “username”. PlainText will allow a space for the user to type their username next to the text. Directly under the username PlainText will be another PlainText for the password with the same interaction as the username. Underneath the password Plaintext will be a button component. The button will have text that says submit. The text up the button is inserted using “android:text="@string/submit"”. Another button will be under that which text will say “Create an Account.” The submit button will take the user to the main inventory page, and the create an account button will take the user to the create an account page.

The Create an Account page is built similarly to the login with a couple more PlainText fields. This page will have four different PlainText fields: first name, last name, email, and password. Each of the PlainText fields text will correspond with what is required for the user to input. Under the password, PlainText will be a button component that will say submit and coded as “android:text="@string/submit".” This button will save the data the user inputs to the database and will return the user to the login screen.  
 The main inventory page will have a little more going on the first thing will be the button on the to left corner. The code for the button would look similar to the following:

<Button  
 android:id="@+id/buttonAddItem"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="150dp"  
 android:layout\_marginTop="15dp"  
 android:text="@string/plus"  
 android:textColor="#FFFFFF"  
 android:textStyle="bold"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />

Each item in the inventory list will have a plus and minus button along with it to edit the correct in stock amount. The item names will use a View text on the right side of the counts.

<TextView  
 android:id="@+id/itemName"  
 android:layout\_width="245dp"  
 android:layout\_height="59dp"  
 android:layout\_marginStart="80dp"  
 android:layout\_marginTop="432dp"  
 android:text="Item1"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />

After an item is added to the database, it is displayed in a grid-like table. The button options will be used with options from a CRUD file to perform the necessary actions.

**Summary**

Overall, this application is an excellent fit for many individuals, whether for personal or business use. It can add and remove items in the inventory and increase and decrease the quantity of items. It is easy to use and can help simplify someone's life. All of this while feeling the data is safe within a secured profile. Compared to other applications, these qualities will help this one stand out. The code being used to create the application will be organized and readable in Android Studio.

**References**

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

*Download Android Studio & App Tools*. Android Developers. (n.d.-b). https://developer.android.com/studio?gad\_source=1&gclid=Cj0KCQjwu8uyBhC6ARIsAKwBGpRE1yHY5mHMsMHWtakMgflZGUP813sXUd-Jn2Q78mevoveQsBLCkEgaAgFXEALw\_wcB&gclsrc=aw.ds