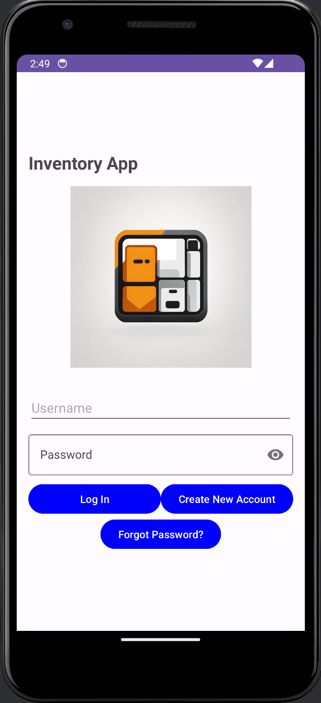
**7-2 Project Three: Inventory Management App (Option 1)**

This project marks the culmination of the development journey for our cutting-edge mobile application – the Innovative Inventory Management App. The primary objective of this app is to revolutionize inventory tracking by leveraging the power of mobile devices. For instance, within the confines of a warehouse, the app's seamless item tracking facilitates efficient logistics management, propelling business growth and expansion. This application provides users with an user friendly, real-time inventory visibility experience across all devices, irrespective of location. Notably, the initial development phase focuses on catering to Android Devices.

**User Authentication**

A screenshot of a cell phone

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Our Innovative Inventory Management App commences its user experience with the LoginActivity. Here, users input their credentials (email and password) and proceed by tapping the sign-in button. The app meticulously cross-references these credentials with our database. If the credentials are not found within our records, users receive an alert notifying them of the incorrect input. To join the app, users can easily click on the register button, which directs them to the RegisterActivity. In this section, users input the necessary details and finalize the process by tapping the sign-up button. The app ensures that all fields are accurately filled; any empty or invalid fields prompt an error message in the RegisterActivity for instant rectification. Upon successful validation of user information, the app stores this data within the UsersDatabase (UsersDatabase.DB), delivering a message of success. Subsequently, users are directed back to LoginActivity for seamless sign-in. Once logged in, a congratulatory message appears, marking the initiation of the ItemsActivity.

**Database Dynamics**

Security is paramount in our app's architecture, and thus, it interacts with two distinct databases: UsersDatabase and ItemsDatabase. The former houses a singular table equipped with four columns (id, name, phone, email, password), while the latter accommodates an equally organized table with four columns (id, email, item description, item quantity). Crucially, the app performs Create, Read, Update, and Delete (CRUD) operations within the user database using the UserSQLiteHelper class, while the items database operations are managed through the ItemSQLiteHelper class and the ItemDBManager class.

**Navigating the Items Realm**

A screenshot of a phone

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Upon successful login, users are welcomed into the heart of the app - the ItemsActivity. For first-time users, a message aptly communicates that the database currently holds no entries. This space serves as the app's central hub, where users can seamlessly add items, toggle SMS notifications, peruse their item list, adjust quantities, remove items, and sign out. Notably, every action taken in the ItemsActivity dynamically updates the persistent database.

**Intuitive Item Management**

**A close-up of a phone

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Selecting an item from the list involves a simple click on the radio button adjacent to the item row. This action instantaneously activates the increase and decrease buttons at the bottom, along with the delete button for the selected item. Conversely, if no item is chosen, these buttons remain dormant, accompanied by a prompt urging users to make a selection.

**Zero Quantity Alert**

An intriguing feature surfaces when a user decreases an item's quantity to zero – the item's quantity cell transforms to a striking red hue, and an SMS notification is dispatched to the user's phone. This notification is contingent on the user's allowance for the app to access the SMS API on their device, coupled with the enabling of the app's SMS notification feature. If the SMS notification feature is disabled or the SMS API access is restricted, the app dutifully notifies users of the constraints. Users can grant SMS API access via app permissions if initially denied.

**Seamless SMS Management**

Within the app's realm, users wield control over SMS notifications. The SMS button (hued in cheerful yellow) serves as the gateway to enabling or disabling this feature. Upon its first use, a device permission dialog materializes, seeking the user's endorsement for the app's SMS API access. Once granted, the SMS button triggers a user-friendly alert dialog, allowing toggling of the SMS feature. Enabled or disabled, this choice culminates in a confirming message. For successful SMS dispatch on item quantity reaching zero, app SMS notification and device SMS API access must align. If the app SMS feature is declined during the device permission dialog, users can subsequently rectify this via app permissions.

**Coding Standards**

Our app aligns with industry-standard coding practices, incorporating strategies like in-line comments and precise naming conventions to bolster code quality. Globally scoped variables adopt CamelCase CapWords nomenclature, while local and key variables embrace camelCase or lower case dash\_names. In-line comments are strategically positioned throughout the codebase, elucidating class methods and functions. JAVA class files adopt CamelCase CapWords naming conventions, while layout files opt for lowercase names. Method names embody a representation of their purpose and functionality, with overriding methods from the superclass named in camelCase with an initial lowercase word. Non-overriding methods feature camelCase with CapWords.

**Unveiling the App**

The launch of our meticulously crafted app necessitates adherence to Google Play's stipulated tasks and guidelines, ensuring a seamless and successful introduction. This encompasses a holistic approach to app quality, encompassing descriptions, in-app experiences, and core quality standards, all geared towards streamlining the publishing process.

**Targeting the Right Audience**

Our app has universal appeal, catering to a diverse range of users. Start-ups and small businesses seeking an intuitive inventory tracking solution are well-served, as are home-based entrepreneurs in need of pocket-accessible inventory management. Professionals from various sectors find solace in the simplicity of our app, empowering them to orchestrate their office and home essentials with ease.

**Crafting the Description**

Our app's description encapsulates its essence:

"The Innovative Inventory Management App empowers users to seamlessly track inventory via Android mobile devices. Simplifying item management, this app provides users a centralized platform for quantified item tracking, delivering real-time visibility on the go."

**Iconic Representation**

**A logo of a computer

Description automatically generated**

Our envisioned icon takes shape as a dynamic stack, harmoniously integrating essential components within a sleek box. The vibrant play of colors further enhances its allure, with the primary hue being an invigorating shade of orange, seamlessly transitioning into crisp white, sophisticated gray, and timeless black. This visual composition captures the essence of the Innovative Inventory Management App. Its refined aesthetics and layered symbolism serve as a testament to the app's purpose and functionality. As the app continues to evolve, the icon's visual elements may expand, mirroring the app's evolution and adaptation to user needs and preferences.

**Cross-API Compatibility**

Our app's development has been orchestrated around API 16, a benchmark that engulfs 99.98% of Android devices. This ensures compatibility across a wide spectrum of devices, old and new. While certain features may cater to the latest versions, the app's core functionality remains robust across devices, underpinned by rigorous testing.

**Sensible Device Permissions**

Our app's functionality revolves around notifications and alerts triggered by depleted inventory quantities. To achieve this, we diligently seek user consent to access the device SMS API on their Android device. This permission can be toggled at any juncture by tapping the SMS button. Routine operation mandates no other specialized permissions, fostering a seamless user experience.

**Monetization Strategy**

Given its fundamental inventory capabilities, our app's initial launch as a free download primes it for widespread discovery on the Play Store. As user engagement intensifies and the app finds its place among favorites, incremental enhancements catered to the primary user base shall ensue. Subsequently, elevated features could be introduced as part of an in-app purchase model. The free version could be capped at a specified item limit, with users offered the opportunity to transcend this limit through a nominal fee.

In a nutshell, ensuring a seamless and quality app launch entails:

• A meticulously curated developer profile linked to a validated payments merchant account.

• Accurate APK version uploads.

• Optimization of the Play Store page.

• Appropriate pricing configuration.

• Strategic country targeting and pricing alignment.

• Enumeration of compatible devices.

• Inclusion of the correct support email address and website.

• Adherence to Play Store rules.

• Acknowledgment of app compliance with Android content guidelines on the Play Store.