**7-2 Project Three**

**CS-360-10405-M01 Mobile Architect & Programming**

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The InventoryApp is a streamlined, user friendly application specifically designed to meet the needs of small businesses and warehouse managers who require an efficient way to monitor and manage their stock levels. Its primary goal is to simplify the inventory management process by providing an intuitive interface that allows users to easily add new items, modify existing entries, or remove items that are no longer in stock. Additionally, the app offers categorization features, enabling users to organize their inventory into different groups for better clarity and management. One of its key functionalities is the automatic alert system that notifies users when stock levels fall below a predefined threshold, helping prevent stockouts and ensuring smooth operations. By integrating these features into a lightweight and accessible platform, InventoryApp aims to enhance productivity and accuracy, reducing the time and effort typically associated with manual inventory tracking.

In the app store description, particular attention will be given to highlighting the security features, such as the robust login and registration system that protects user data and ensures only authorized access. The description will clearly explain how users can seamlessly add, edit, or delete inventory items, including specifying quantities and categorization details, to maintain an up to date inventory database. It will also emphasize the app’s modern and responsive user interface, designed with RecyclerView to provide smooth scrolling and a visually pleasing experience across various device sizes. Furthermore, the SMS alert system will be introduced as a critical feature that enhances real time monitoring of stock levels by sending automated notifications directly to users’ phones. The ability to operate offline by storing data locally on the device will be underscored, making the app reliable even in environments with limited or no internet connectivity. These features collectively demonstrate the app’s practicality and its focus on delivering a secure, efficient, and user centric inventory management solution.

The visual identity of the app will be conveyed through a carefully designed icon that adopts a clean, flat aesthetic consistent with contemporary design trends. The icon will feature a simple depiction of a clipboard combined with a checkmark or barcode symbol, representing organization, tracking, and verification of core elements of inventory management. The color palette will be composed of calming blue and green tones, chosen deliberately to evoke feelings of trust, stability, and productivity, aligning with Android’s Material Design principles. This visual approach aims to create a recognizable and professional brand image that appeals to small business owners and entrepreneurs seeking a reliable tool for managing their inventories efficiently. The icon’s straightforward design ensures it remains clear and identifiable across various screen sizes and resolutions, contributing to a cohesive visual identity for the app.

The development process for InventoryApp was carried out using Android API level 33 (Android 13), ensuring compatibility with the latest devices and operating system features. To maximize accessibility, the minimum SDK version has been set to 21, allowing users with older devices to still benefit from the app’s core functionalities. This extensive range of compatibility ensures that the app can reach a broad audience, from early Android adopters to those using more recent hardware. The development team also took advantage of modern Android features such as ActivityResultLauncher for handling activity results more efficiently and edge-to-edge layouts to provide an immersive visual experience. These technical choices demonstrate a commitment to adhering to current development best practices while maintaining broad device support, thereby ensuring the app’s longevity and usability across a diverse range of Android devices.

The app requests only a single permission: SEND\_SMS, which is strictly necessary for its core low-stock notification feature. This feature automatically sends SMS alerts to users when inventory quantities drop to critical levels, providing real-time updates that support proactive stock management. The permission handling process is designed with user privacy and trust in mind; the app requests SMS access only at the moment it is needed, accompanied by clear explanations of its purpose. If the user denies permission, the app continues to function normally, albeit without SMS notifications, ensuring that core functionalities remain accessible. The app’s manifest file is minimalistic, including only essential permissions and explicitly avoiding requests for unrelated access such as camera, microphone, internet, or location services. This approach reflects a responsible development philosophy, emphasizing user privacy and security while delivering the app’s intended features without unnecessary permissions.

Currently, InventoryApp is offered as a completely free and ad-free application, with no in-app purchases or monetization tactics implemented at this stage. This decision was made to lower entry barriers, promote trust, and ensure that users can experience the app’s functionality without financial or intrusive advertising concerns. Looking ahead, future versions may introduce diverse monetization strategies to support ongoing development and maintenance. One potential approach is a freemium model, offering a basic version at no cost with optional paid upgrades for premium features like cloud backups, synchronization across multiple devices, or exportable inventory reports. Alternatively, the app could incorporate unobtrusive app advertisements on secondary screens, such as the item addition or SMS permission pages, which would generate revenue without disrupting user experience. Another option includes a one-time paid upgrade that unlocks all premium features and removes ads altogether. These monetization options aim to balance accessibility and revenue generation, enabling users to try the app risk-free while providing sustainable support for future improvements.

The InventoryApp application is now fully developed, rigorously tested, and aligned with current best practices in Android software development. Its intuitive user interface, robust internal architecture, and careful permission management position it as a reliable and efficient tool for small scale inventory management. The comprehensive deployment plan ensures that the app will be prominently featured in the app store, compatible across a wide spectrum of Android versions, and adaptable for future monetization strategies. With its thoughtful design and solid technical foundation, the app is poised to achieve successful adoption among small business owners, entrepreneurs, and warehouse operators seeking a dependable and straightforward inventory solution. This preparation lays the groundwork for a successful launch and sustained usage, supporting the app’s goal of simplifying inventory tasks and enhancing operational efficiency.