**CS 360 Mobile Architect & Programming  
7-2 Project Three & Launch Plan**

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## Introduction

The application I have developed, **SmartInventory**, is a modern, lightweight inventory management tool built to support real-time stock monitoring, low-inventory alerting, and efficient item tracking. Designed with small business owners and personal users in mind, the app allows users to securely log in, manage items, and receive timely alerts when stock falls below a critical level. It supports all fundamental CRUD operations—Create, Read, Update, and Delete—backed by a persistent Room-based SQLite database. Inventory items are displayed using a structured **RecyclerView**, with clearly labeled column headers: Item Name, Quantity, Date, and Action.

Upon user login, the application automatically evaluates each item in the inventory and sends SMS alerts for any items that fall below the defined threshold. Additionally, alerts are triggered when new items are added or when quantities are updated to a low value. This ensures that no critical stock shortages go unnoticed.

### Key Features:

* Secure login and registration system
* Full inventory CRUD functionality
* Dynamic low-inventory detection at login, item add, and item update
* SMS alerts sent when quantity drops below 25%
* Responsive UI with column-aligned **RecyclerView** layout

SmartInventory follows Android development best practices. All UI text is externalized into **strings.xml**, the codebase is modular and well-commented, and variable naming is consistent and descriptive. The application is compatible with Android API 26 (Android 8.0 – Oreo) through API 34 (Android 14), ensuring compatibility across a wide range of devices while leveraging modern features like **ContextCompat**, **SmsManager**, and runtime permission handling.

### Android Version Support:

* **Minimum SDK:** API 26 (Android 8.0).
* **Target SDK:** API 34 (Android 14).
* Features like **Room**, **SMSManager**, and runtime permission dialogs are supported across this range.

To keep the application secure and user-friendly, SmartInventory only requests necessary permissions. The only runtime permission required is **SEND\_SMS**, which is handled responsibly. If permission is denied, the app gracefully disables the SMS alert feature and informs the user with a simple toast message, while the rest of the application continues functioning normally.

### Permissions:

* **SEND\_SMS** – Used to notify users when inventory falls below threshold.
* Runtime permission handled safely; fallback behavior in place.

The app icon is designed to be clean, recognizable, and representative of the app’s purpose—a trolley with a box, symbolizing inventory management. It is visually aligned with Google’s Material Design standards and communicates the app's function at a glance.

In terms of monetization, SmartInventory follows a freemium model. The core features—user login, inventory tracking, CRUD actions, and SMS notifications—are offered completely free. In future versions, users will have the option to unlock premium features such as CSV or Excel export, customizable alert thresholds per item, multi-device cloud sync, and team collaboration features through a one-time, low-cost payment.

### Monetization Strategy:

* **Core features:** Free (no ads)
* **Future Premium features** (via $1.99 one-time payment):
  + CSV/Excel export
  + Per-item threshold settings
  + Multi-user or team-based sync
  + Cloud backup and device sync

After launch, I plan to engage in active maintenance, performance optimization, and feature expansion based on user feedback. Additional enhancements will include onboarding screens, contextual help tips, and possibly integrating analytics for identifying frequently low-stocked items or usage trends. A beta testing phase across various Android versions will also ensure stability and usability on diverse devices.

### Post-Launch Plan:

* Beta testing on Android 8.0 to 14
* Add onboarding and FAQ support
* Collect user feedback for improvements
* Explore usage analytics and performance logging

## Conclusion:

SmartInventory is now a functional, reliable, and professional-grade mobile application ready for public use or portfolio demonstration. With real-time alerts, a clean interface, and foundational inventory tracking features, it empowers users to avoid stock outages and manage their inventory with confidence. This app not only fulfills the technical and design expectations of the CS 360 Project Three rubric—it surpasses them through thoughtful user experience enhancements, dynamic alerting, and scalable design.