

# Flutter Intern Assignment: Raw Material Management System

## Objective:

Create a Flutter-based Raw Material Management System using **Google Sheets API**, applying **BLoC for state management**, **Hive for local storage**, and a **Clean Architecture** approach.

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## Scope of Work:

### 1. Raw Material Composition Page

- User defines product-to-material composition (e.g., Product A needs 2kg Material X, 3 units Material Y).
- Save this data locally in **Hive**, and sync with **composition\_sheet** in **Google Sheets**.
- Allow Add, Edit, Delete of compositions.

### 2. Manufacturing Log Page

- User selects a product and enters how many units are manufactured.
- Based on composition, auto-deduct material quantities from **inventory\_sheet** in **Google Sheets**.
- Update local Hive store for faster access and offline support.

### 3. Inventory Management

- Maintain raw material list in **inventory\_sheet** with:
  - Material Name
  - Current Quantity
  - Threshold Quantity
- Show current inventory from Hive and sync with Google Sheets periodically.

### 4. Threshold Alerts

- On app launch or through a manual refresh, check for materials that fall below threshold.
  - Show **daily alerts** (Toast/Dialog/Badge) if any raw material is below limit.
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## Technical Requirements

- **State Management:** Use **Flutter BLoC** (Cubit or Bloc) to manage UI state and logic separation.
  - **Architecture:** Follow **Clean Architecture** with:
    - **Presentation Layer** (UI + BLoC)
    - **Domain Layer** (Entities + Use Cases)
    - **Data Layer** (Repositories + Google Sheets + Hive)
  - **Local Storage:** Use **Hive** to:
    - Cache compositions, inventory, and manufacturing logs
    - Enable offline access and sync on connectivity
  - **Google Sheets Integration:**
    - Use Apps Script Web App or Sheets API
    - Handle OAuth2 or use published Script URL with webhooks
  - **Sync Mechanism:**
    - Manual sync button or auto sync on app open (one-way or two-way sync)
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## Deliverables

- Flutter App Code (GitHub link)
- Google Sheet Template (or live link)
- README with:

- Setup Instructions
- Architecture Overview (brief)
- Demo Screenshots or Video

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### **Bonus (Optional)**

- Export logs as CSV
- Light/Dark mode toggle