

1. Title:Smart Inventory Management System

2. Project Statement:

Small businesses often struggle to track inventory, manage restocking, and handle sales reporting. This system enables owners and staff to manage inventory levels, receive low-stock alerts, and generate transaction reports in an efficient, digital way.

3. Outcomes:

- Role-based login for admins and employees.
 - Product management with stock-level tracking.
 - Low-stock alert notifications and reorder management.
 - Transaction history and inventory movement logs.
 - Exportable reports in PDF/CSV.
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4. Modules to be implemented:

- **User Authentication and Role Management**
Admin and employee login and access control.
- **Product and Inventory Management**
CRUD operations on products, units in/out.
- **Low-Stock Alerts and Notifications**
Alert system based on minimum stock threshold.
- **Transaction History**
Track every inventory movement (sale/purchase).

- **Reports and Export Tools**

Inventory reports and export to Excel/CSV.

5. Week-wise module implementation and high-level requirements:

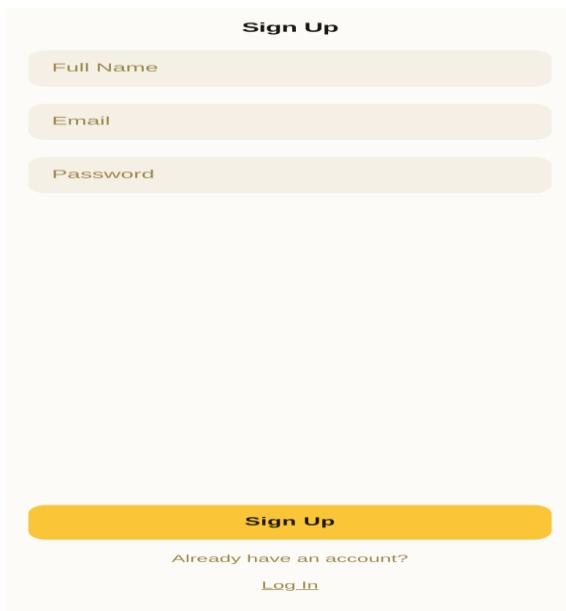
Milestone 1: Weeks 1–2

Authentication and Roles

- Implement JWT-based authentication for both roles.
- Allow admins to register and manage employee accounts.

Role-Based Access Control

- Admins access full inventory and user management.
- Employees have limited access to stock operations.



The image shows a 'Sign Up' form interface. At the top, the word 'Sign Up' is centered in a bold black font. Below it are three input fields: 'Full Name', 'Email', and 'Password', each with a light gray placeholder text. At the bottom of the form is a large yellow button with the text 'Sign Up' in white. Below this button, there is a small line of text 'Already have an account?' followed by a blue 'Log In' link.

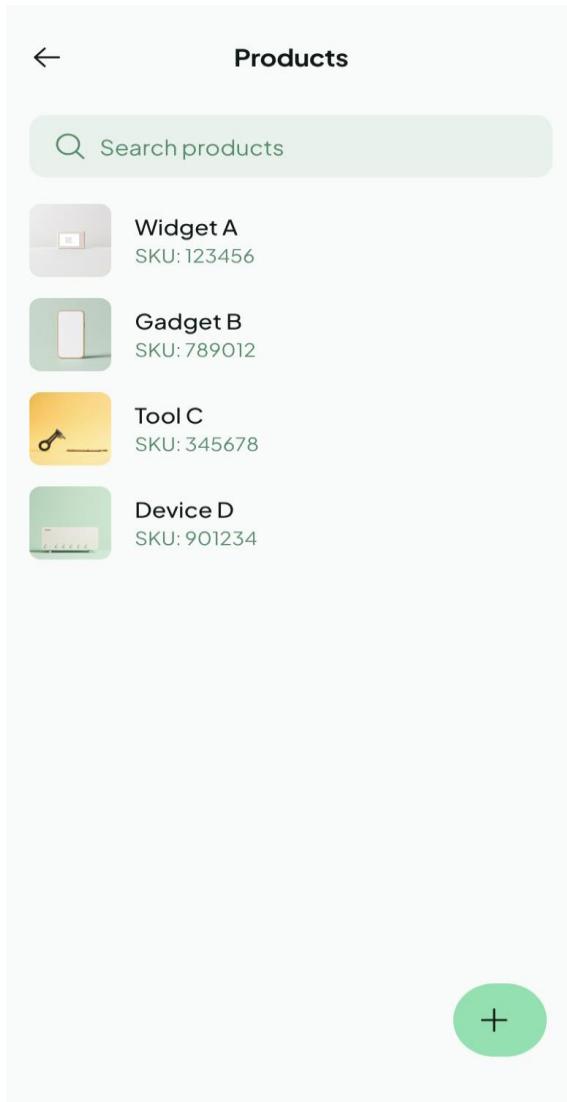
Milestone 2: Weeks 3–4

Product Management

- Include fields like SKU, product name, category, supplier, and unit price
- Ensure each product is uniquely identifiable and searchable

Stock Level Updates

- Input quantities for stock-in and stock-out actions
- Log each change for historical tracking and audits



Milestone 3: Week 5

Low-Stock Thresholds

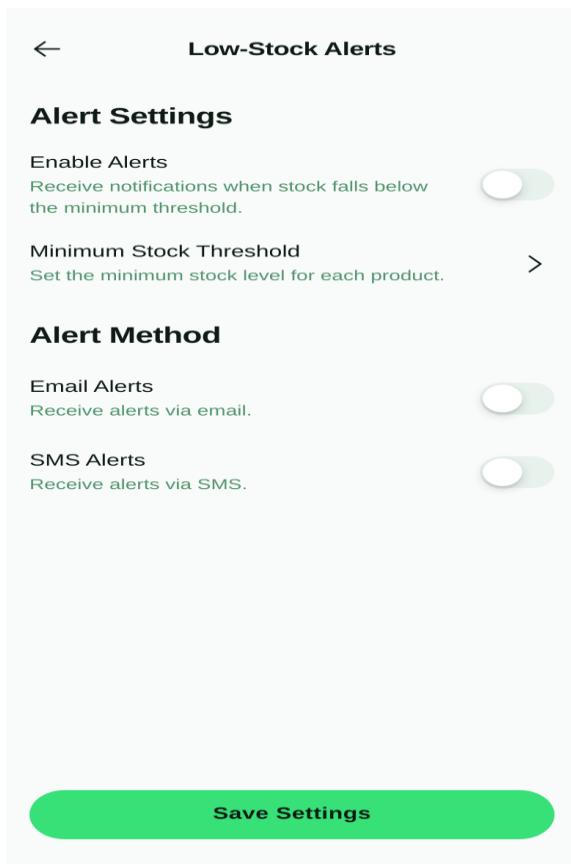
Allow admins to set minimum stock levels for each product.

- Define custom threshold values based on item type
- Store thresholds in the product metadata

Alerts and Notifications

Trigger alerts when stock falls below the set threshold.

- Display visual alerts on the dashboard
- Send email or SMS notifications to designated staff



Milestone 4: Weeks 6–7

Purchase and Sales Logging

Record each inventory transaction with relevant details.

- Log product name, quantity, transaction type (purchase/sale), date, and user
- Maintain a full audit trail for transparency

Stock Movement Tracking

Automatically update stock based on transactions.

- Increase stock on purchases and decrease on sales
- Reflect real-time stock levels in the inventory dashboard

The screenshot shows a mobile-style application interface for managing inventory transactions. At the top, there is a back arrow and the title "Inventory Transactions". Below this, the "Add Transaction" section is displayed, containing fields for "Select Transaction Type" (with a dropdown icon), "Product Name", "Quantity", "Price", and "Notes". A large green "Add Transaction" button is located at the bottom of this section. Below the add form, the "Transaction History" section lists three entries:

Product	Type	Change
Product A	Purchase	+10
Product B	Sale	-5
Product C	Purchase	+20

At the bottom of the screen, there is a navigation bar with four items: "Dashboard" (home icon), "Products" (box icon), "Orders" (list icon), and "Profile" (user icon).

Milestone 5: Week 8

Inventory Summary Reports

Generate detailed reports of current stock status and activity.

- Include product details, stock levels, transaction history, and low-stock items
- Filter reports by date range, category, or supplier

Export Functionality

Allow users to export reports in common formats.

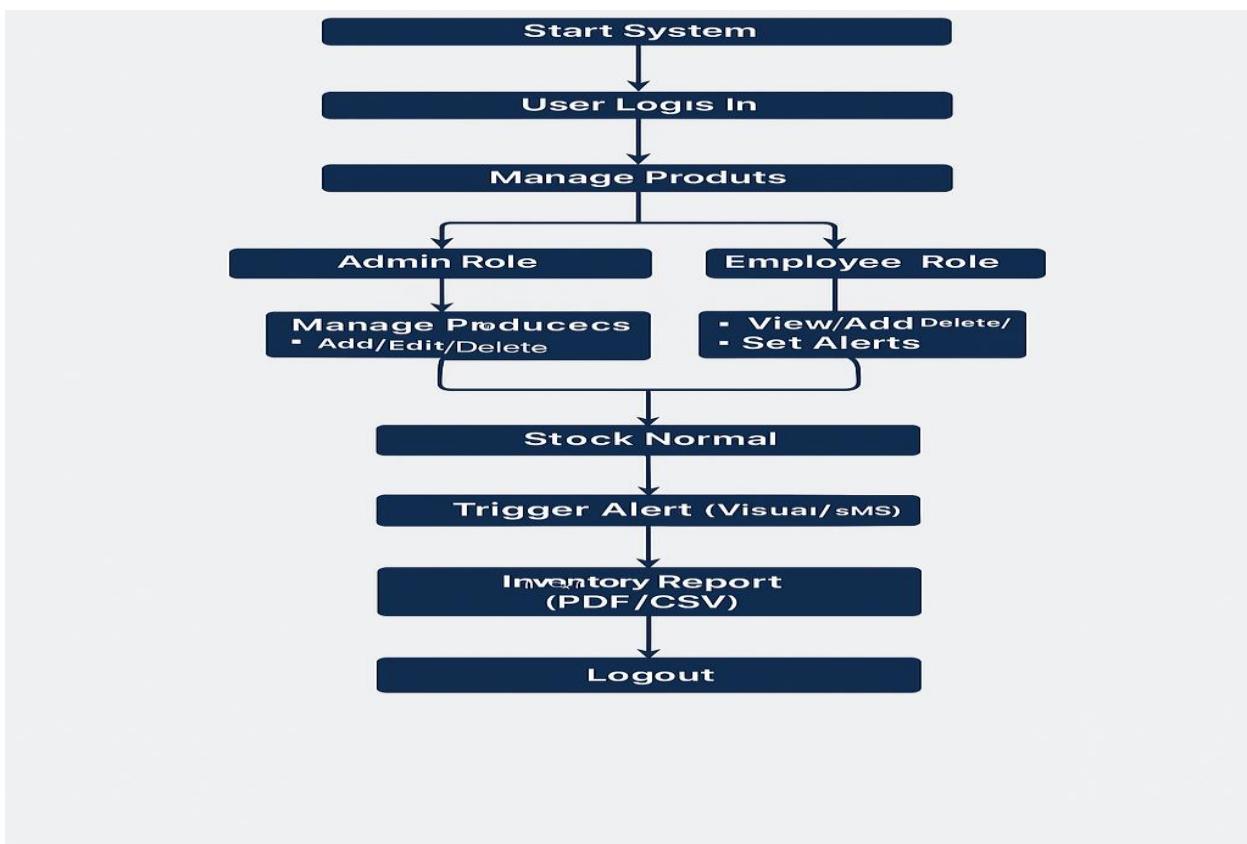
- Support PDF and CSV file generation
- Enable downloads or email delivery of reports

The screenshot shows the 'Reports & Export' section of the application. At the top, there is a back arrow and the title 'Reports & Export'. Below this, the 'Inventory Summary' section is shown with a description: 'Generate a summary of your current inventory levels, including product names, quantities, and values.' A green 'Generate Summary' button is present. The 'Export Reports' section follows, with a description: 'Export detailed reports of your inventory data, including transactions, stock levels, and more.' It features two dropdown menus: 'Select Report Type' and 'Select Date Range', each with a downward arrow icon. Below these are two buttons: 'Export to PDF' (gray) and 'Export to CSV' (green). At the bottom of the screen, there is a navigation bar with four icons: Dashboard (home), Products (cube), Orders (grid), and Profile (magnifying glass).

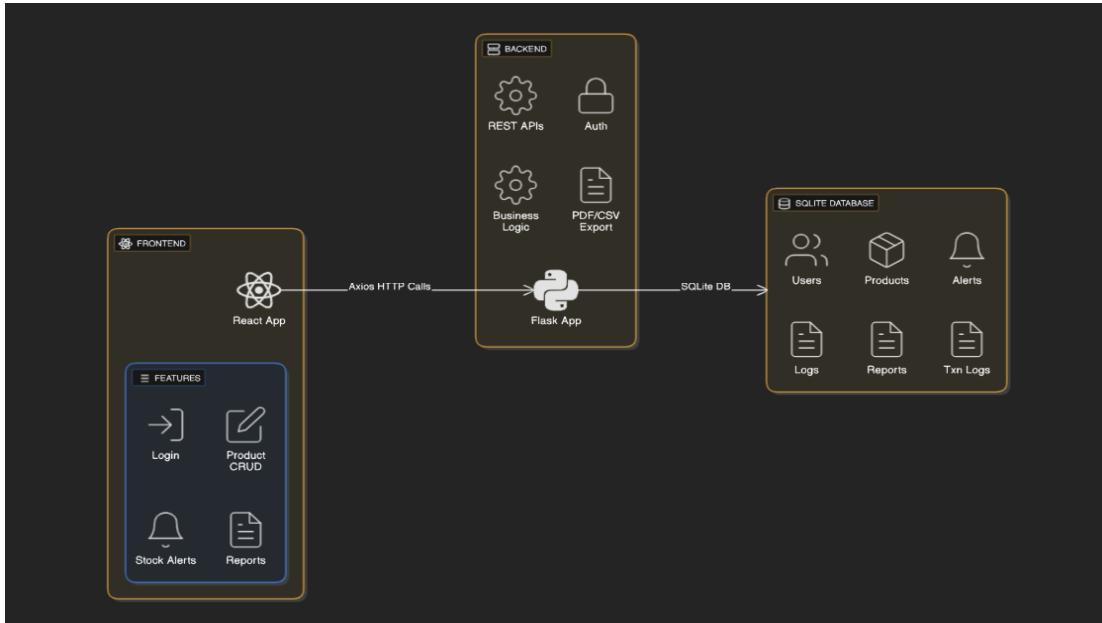
6. Evaluation Criteria:

- **Week 2:** Secure login and user roles working.
 - **Week 4:** Products can be added, updated, and listed.
 - **Week 5:** Low-stock alerts trigger correctly.
 - **Week 7:** Transaction history is accurate.
 - **Week 8:** Reports are exported successfully.
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7. Workflow diagram:



8. Architecture diagram:



9. Schema diagram:

