

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

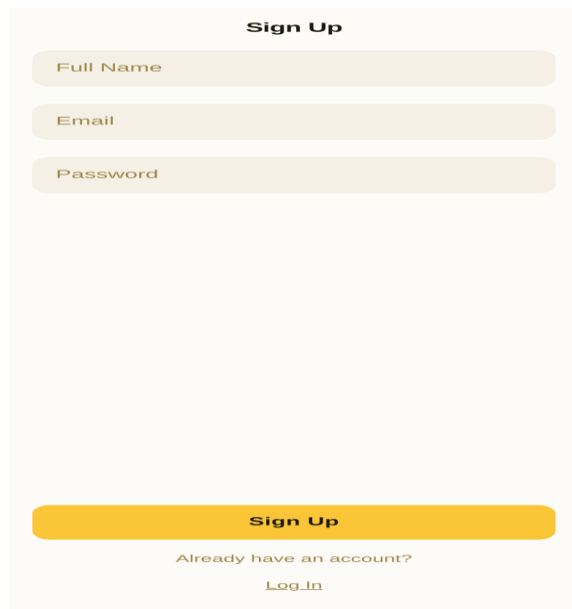
Milestone 1: Weeks 1–2

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 with a light beige background. At the top, the text 'Sign Up' is centered. Below it are three input fields: 'Full Name', 'Email', and 'Password', each with a light beige border and rounded corners. At the bottom, there is a prominent yellow 'Sign Up' button. Below the button, the text 'Already have an account?' is centered, followed by a 'Log In' link in a smaller, lighter font.

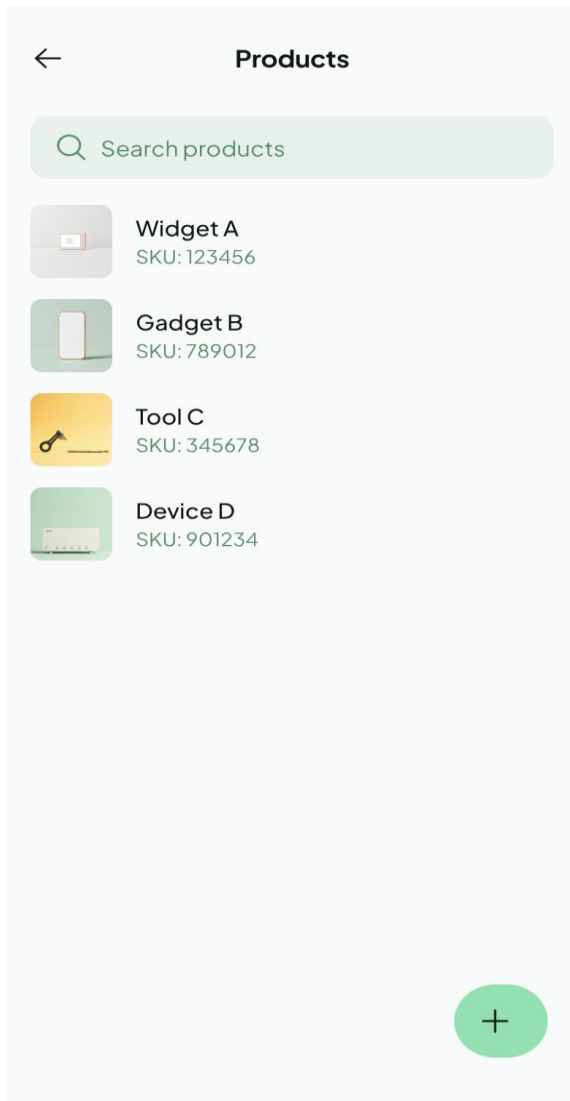
Milestone 2: Weeks 3–4

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

 **Low-Stock Alerts**

Alert Settings

Enable Alerts

Receive notifications when stock falls below the minimum threshold.

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Minimum Stock Threshold

Set the minimum stock level for each product.

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Alert Method

Email Alerts

Receive alerts via email.

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SMS Alerts

Receive alerts via SMS.

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Save Settings

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

Inventory Transactions

Add Transaction

Select Transaction Type

Product Name

Quantity

Price

Notes

Add Transaction

Transaction History

Product A

Purchase

+10

Product B

Sale

-5

Product C

Purchase

+20

Dashboard

Products

Orders

Profile

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

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Reports & Export

Inventory Summary

Generate a summary of your current inventory levels, including product names, quantities, and values.

Generate Summary

Export Reports

Export detailed reports of your inventory data, including transactions, stock levels, and more.

Select Report Type

Select Date Range

Export to PDF

Export to CSV

Dashboard

Products

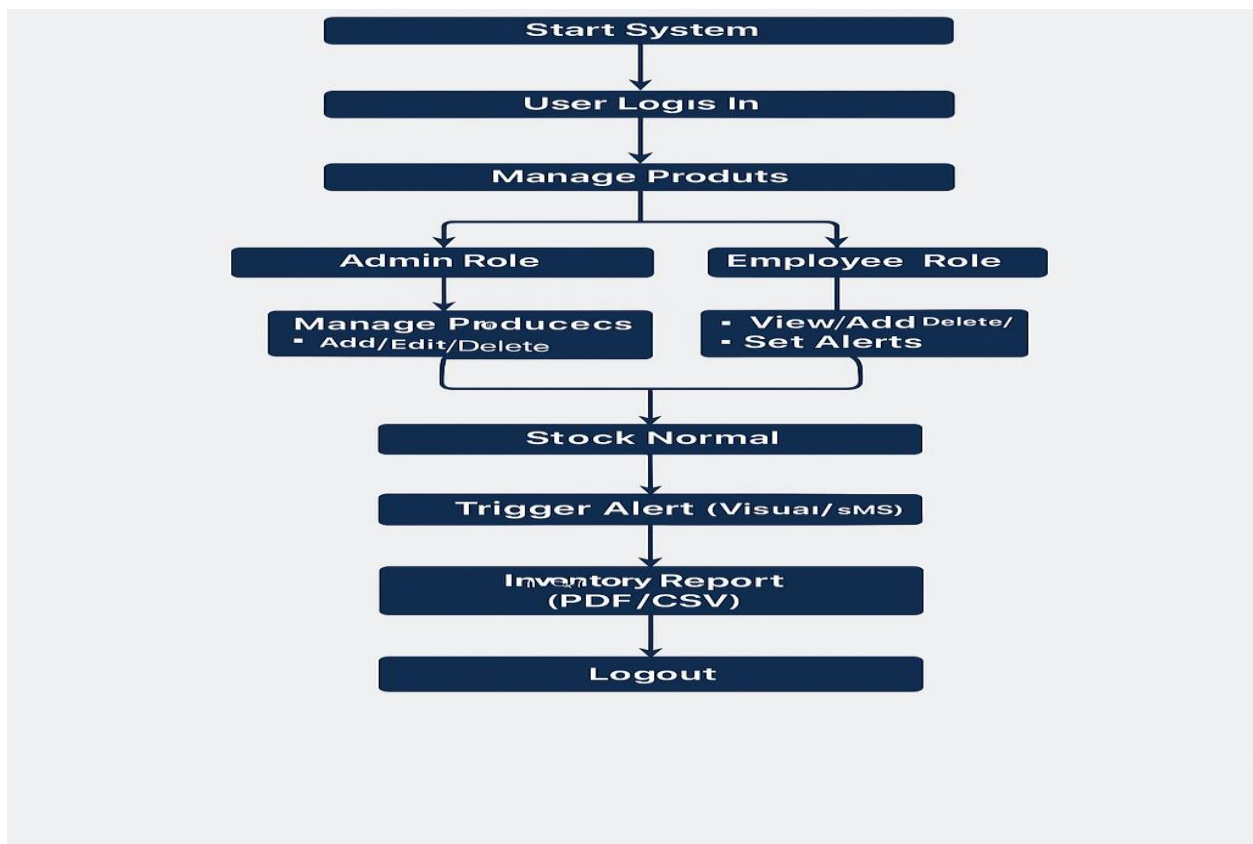
Orders

Profile

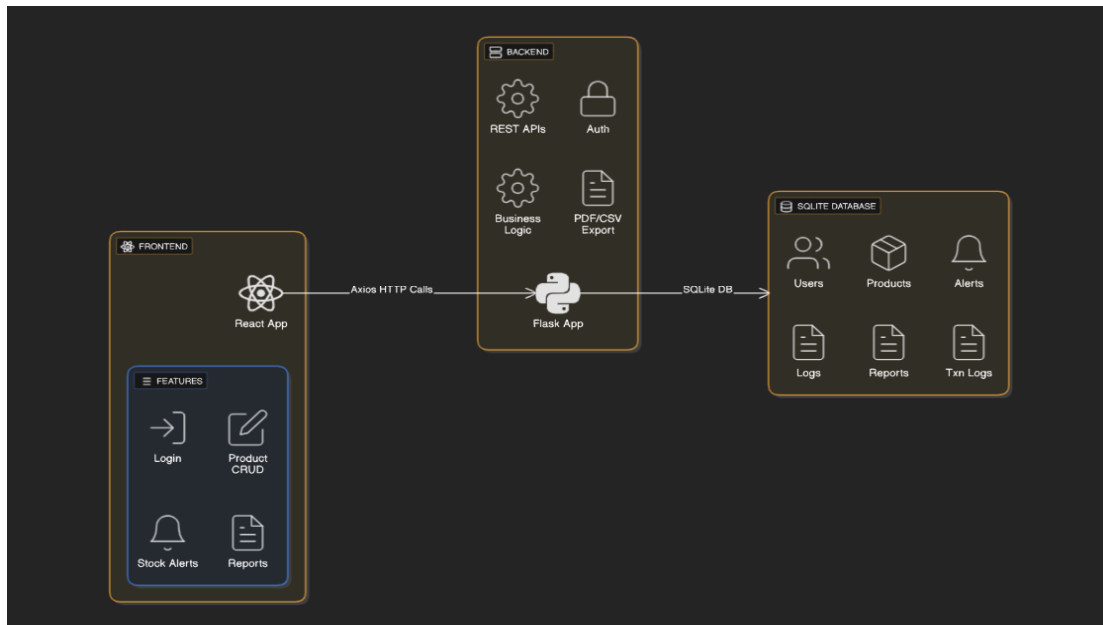
6. Evaluation Criteria:

- **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:

