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Seat no:396

Project Id: 34

Project Title: INVENTORY MANAGEMENT SYSTEM

Technical Components

Component	Tech Stack
Backend	Express JS
Frontend	React JS
Database	MongoDB
API	Open API

Implementation Timeline

Phase	Deadline	Status	Notes
Stage 1	26/07/24	In Progress	Planning and Requirement Gathering
Stage 2		Not Started	Design and Prototyping
Stage 3		Not Started	DB Designing
Stage 4		Not Started	Backend Implementation
Stage 5		Not Started	Testing & Implementation
Stage 6		Not Started	Deployment

PROBLEM STATEMENT:

The Effective inventory management is crucial for maintaining operational efficiency, reducing costs, and ensuring customer satisfaction. However, traditional methods of inventory tracking, such as manual record-keeping or basic spreadsheets, often lead to inaccuracies, inefficiencies, and lost opportunities.

- **Inaccurate Inventory Tracking:** Manual processes and outdated systems often result in data entry errors, leading to discrepancies between actual and recorded inventory levels.
- **Overstocking and Stockouts:** Without real-time tracking, businesses may experience overstocking, leading to increased holding costs, or stockouts, resulting in missed sales and dissatisfied customers.
- **Inefficient Order Management:** Managing purchase orders, receiving goods, and updating inventory levels manually is time-consuming and prone to errors.
- **Lack of Visibility:** Businesses struggle to maintain a clear and real-time view of their inventory across multiple locations or channels, making it difficult to make informed decisions

PROJECT FLOW:

Purpose:

The purpose of developing an inventory management system is to ensure accurate tracking of inventory levels, streamline and automate inventory processes, and maintain optimal stock levels. It provides real-time visibility into inventory across multiple locations and integrates seamlessly with other uses. This system also improves order management and generates insightful reports and analytics. Ultimately, it enhances operational efficiency and decision-making in inventory management.

Scope:

The scope of the inventory management system project includes real-time inventory tracking, streamlined order management, and inventory optimization. It features a user-friendly interface, comprehensive reporting and analytics, and multi-location support. The system integrates with existing business systems, ensures robust security and access control, and automates reordering processes.

Business Context:

In today's competitive business environment, effective inventory management is critical for maintaining operational efficiency, reducing costs, and ensuring customer satisfaction. Many businesses, ranging from small retailers to large enterprises, face challenges in tracking and managing their inventory due to reliance on manual processes or outdated systems. This project aims to develop a robust inventory management system that addresses these challenges and supports business growth

1. Admin and Lab In-Charge Login:

- **Admin Login:**
 - **Credential Entry:** Admin enters their username and password.
 - **Authentication Process:** System checks the credentials against the database records.
 - **Access Grant:** If credentials match, the admin gains access to the dashboard. If not, an error message "Invalid Account" prompts a retry or recovery process.
- **Lab In-Charge Login:**
 - **Credential Entry:** Lab in-charge provides their login credentials.
 - **Authentication Process:** System verifies credentials against the database.
 - **Access Grant:** Successful login directs the lab in-charge to the stock management system.

2. Inventory and Order Management

- **Admin Inventory Management:**
 - **Adding Inventory:** Admin can add new items by inputting detailed information such as item name, SKU, quantity, and price.
 - **Updating Inventory:** Adjustments to existing items, including quantity updates, item description changes, and price modifications.
 - **Viewing Inventory:** Admin can access a list of current stock, with details for each item.
 - **Deleting Inventory:** Removing outdated or obsolete items from the system.
 - **Generating Reports:** Compiling data on inventory for performance insights, including turnover rates and stock levels.
 - **Viewing Reports:** Analyzing generated reports to make informed decisions.
- **Order Management:**
 - **Creating Orders:** Inputting order details, including customer info, order items, and quantities.
 - **Approving Orders:** Reviewing orders to ensure accuracy and availability before approval.
 - **Fulfilling Orders:** Processing approved orders for delivery, ensuring correct packing and dispatch.
 - **Tracking Orders:** Monitoring the order status throughout the fulfillment process.

3. Stock Management by Lab In-Charge:

- **Entering and Storing Stock Details:**
 - **Stock Entry:** Inputting new stock items with specifics like item name, quantity, and supplier information.
 - **Data Storage:** Saving the entered stock details into the database for future reference and tracking.
- **Search and Allocate Components:**
 - **Component Search:** Lab in-charge searches for specific components using the database.
 - **Database Query:** System queries the database to check for the availability of the searched component.
 - **Component Availability:**
 - **Available:** If the component is available, it is displayed in green.
 - **Unavailable:** If the component is not available, it is displayed in red.
 - **Component Allocation:** Allocating available components to the relevant projects or departments.
 - **Updating Database:** The database is updated to reflect the new allocation status.
- **Adding to Purchase List:**
 - **Unavailable Components:** Items not available are added to a purchase list for future procurement.

4. Reporting and Notifications

- **Admin Reporting:**
 - **Order and Inventory Reports:** Generating comprehensive reports on orders processed and inventory status.
- **Lab In-Charge Reporting:**
 - **Stock Level Reports:** Generating reports on current stock levels, allocations, and component usage.
 - **Notifications:** System-generated alerts for low stock levels or critical component needs.

- **Submission of Reports:**

- **Google Form Submission:** All reports and purchase lists can be submitted via a Google form for transparency and records.

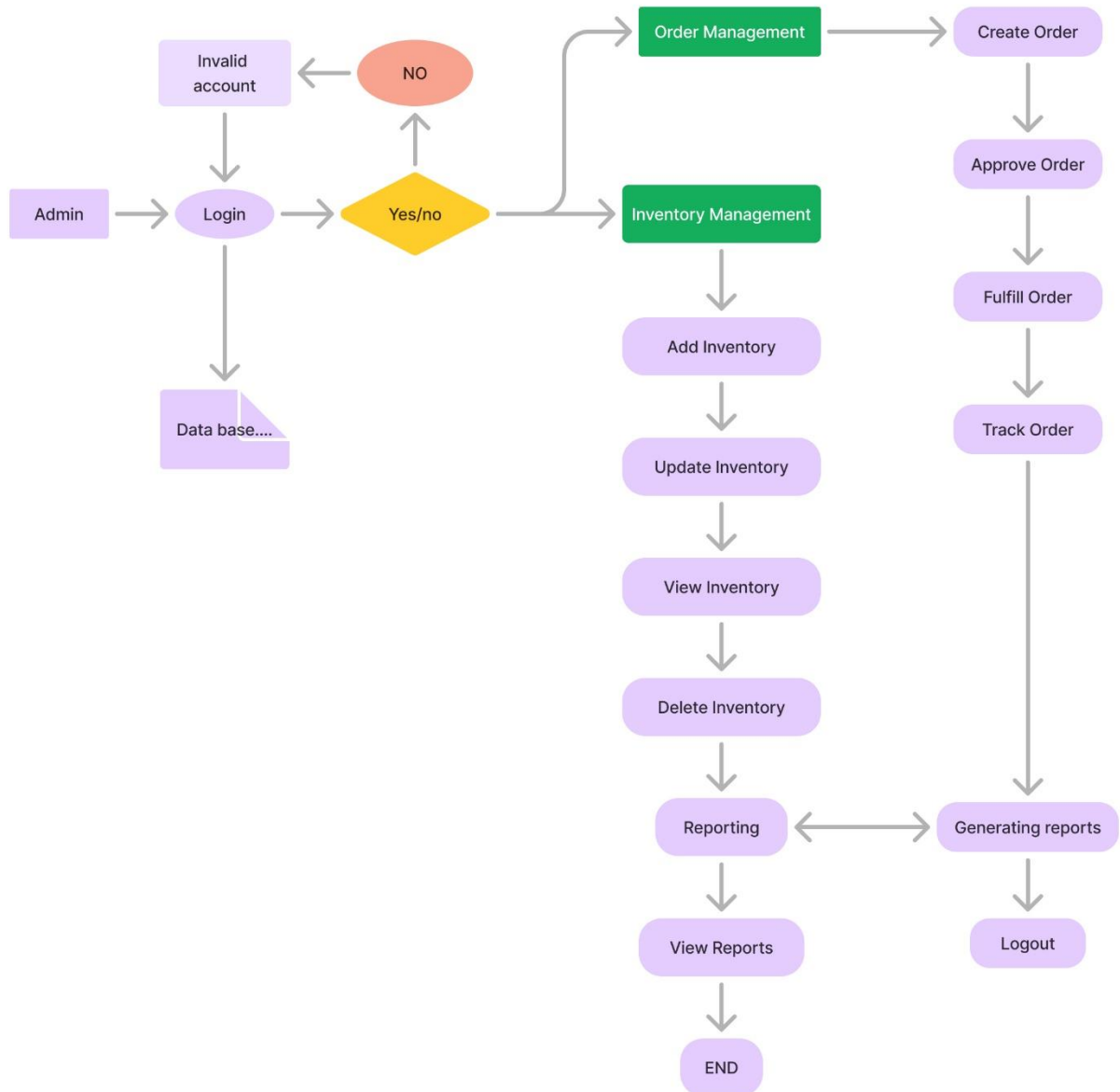
5. Logout:

- **Secure Logout:**

- **Session Termination:** Admin and lab in-charge log out securely, ensuring that the session is closed and no unauthorized access can occur.
- **Return to Login Screen:** The system returns to the initial login screen, ready for the next user.

FLOWCHART:

Admin Flowchart:



Staff Flowchart:

