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Project Id: 34

Project Title: BIT INVENTORY MANAGEMENT SYSTEM

Technical Components

	Tech Stack
Frontend	angular
Backend	Express JS
Database	MongoDB
API	Node JS

Implementation Timeline

Phase	Deadline	Status	Notes
Stage 1		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:

Ensuring cutting expenses, and preserving operational efficiency all depend on effective inventory management. But conventional inventory monitoring techniques, such handwritten records or simple spreadsheets, can result in errors, inefficiencies, and missed 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- **Inaccurate Inventory Tracking:** Manual processes and outdated systems often result in data entry errors, leading to discrepancies between actual and recorded inventory levels.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:

Creating an inventory management system is intended to guarantee precise inventory tracking, optimize stock levels, and automate and streamline inventory procedures. It smoothly interacts with other purposes and offers real-time view into inventory across many locations. Additionally, this system produces intelligent reporting and analytics and enhances order administration. In the end, it improves inventory management decision- making and operational efficiency.

Scope:

Real-time inventory tracking, simplified order processing, and inventory optimization are all included in the scope of the inventory management system project. It has an easy-to-use UI, extensive analytics and reporting, and support for multiple locations. The solution automates reordering procedures, guarantees strong security and access control, and interfaces with current business systems.

Business:

Effective inventory management is essential for preserving operational effectiveness, cutting expenses, and guaranteeing customer satisfaction in today's cutthroat business climate. Many companies, from tiny shops to major corporations, struggle to maintain and manage their inventory because they still rely on antiquated technology or manual methods. The goal of this project is to create a solid inventory management system that tackles these issues and promotes company expansion.

Functional Requirements:

- **User Management:**
 - **Authentication:** Allow users to log in and log out securely.
 - **Authorization:** Assign roles and permissions to users (e.g., admin, faculty, staff).
 - **User Registration:** Enable new users to register with appropriate details.
 - **Profile Management:** Allow users to view and update their profiles.
- **Inventory Management:**
 - **Item Tracking:** Track and manage all inventory items, including books, lab equipment, computers, furniture, etc.
 - **Categorization:** Organize items into categories for easy management and retrieval.
 - **Item Details:** Store detailed information for each item, such as name, category, quantity, location, condition, and acquisition date.
- **Inventory Operations:**
 - **Add Items:** Enable users to add new items to the inventory.
 - **Update Items:** Allow users to update details of existing items.
 - **Delete Items:** Provide the functionality to remove items from the inventory.
 - **Search and Filter:** Enable users to search for items and filter results based on different criteria (e.g., category, location, condition).
- **Check-in/Check-out System:**
 - **Issue Items:** Allow users to check out items for a specific period.
 - **Return Items:** Enable users to return checked-out items.
 - **Due Dates and Reminders:** Set due dates for item returns and send reminders to users.
- **Reporting and Analytics:**
 - **Inventory Reports:** Generate reports on the current status of inventory items, including quantities and locations.
 - **Usage Reports:** Provide insights into the usage patterns of inventory items (e.g., most frequently checked-out items).
 - **Audit Trails:** Maintain a log of all inventory transactions and changes for auditing purposes.
- **Notification System:**
 - **Alerts:** Send alerts for low stock levels, overdue items, and maintenance requirements.
 - **Reminders:** Notify users about upcoming due dates and required actions.

FLOW DIAGRAM:

Inventory Stock Management System



