PORTAL FOR BIT INVENTORY MANAGEMENT SYSTEM

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PROJECT ID: 34

PROJECT TITLE: BIT INVENTORY MANAGEMENT SYSTEM

TECHNICAL COMPONENTS:

COMPONENT	TECH STACK
BACKEND	• LINUX • APACHE WEB SERVER • PHP WITH LARAVEL FRAMEWORK
FRONT END	• HTML • CSS • JAVASCRIPT
DATA BASE	MYSQL
API	REST FULL API

PROBLEM STATEMENT:

The BIT Inventory Management System aims to optimize and digitize the material request process within the campus. By transitioning from a paper-based system to a fully digital platform, the system will streamline operations from the initial request by the end user to the final bill passing. This includes implementing a robust database management system to ensure accurate, efficient tracking and handling of inventory requests, thereby improving overall efficiency and reducing errors and paperwork.

PROJECT FLOW:

Purpose

The purpose of the BIT inventory management system is to optimize and streamline the material request process within the campus, aiming to make it as paperless as possible. This system manages requests from the end-user side through to bill passing, ensuring efficient and accurate tracking of materials. It leverages a robust database management system to maintain proper records, enhancing transparency, reducing errors, and improving overall operational efficiency in handling campus inventory.

Scope

The scope of the BIT Inventory Management System is to optimize and digitize the material request process within the campus, transforming it into a paperless system. This involves streamlining the workflow from the end user’s request to bill processing, ensuring efficient tracking and management of inventory. The system will feature a robust database management component to maintain accurate records, facilitate real-time updates, and enhance overall efficiency and transparency in handling material requests and inventory control.

Business context

The BIT inventory management system aims to streamline and digitalize the material request process within the campus, minimizing paper usage. It covers the entire workflow from the end user's request to bill processing, ensuring efficient and accurate database management for optimal resource allocation and tracking.

Consideration

● **Streamlined Requests and Approvals**: Digitizing the material request process ensures quick and efficient submission, review, and approval of requests, reducing wait times and minimizing errors associated with manual handling.

● **Real-time Inventory Tracking**: Implementing a digital inventory management system allows for real-time updates and tracking of stock levels, ensuring accurate and up-to-date information for both users and administrators.

● **Enhanced Data Management**: A robust database management system secures all transaction records, providing easy access to historical data, generating insightful reports, and supporting decision-making processes with reliable data.

Dependencies

● **Database Management System**: Utilize a robust DBMS like MySQL or PostgreSQL to handle and store all inventory and transaction data securely.

● **Web-based User Interface:** Develop a user-friendly web application with responsive design to allow end-users to request materials and track statuses easily.

● **Barcode/RFID Integration**: Implement barcode or RFID technology to streamline inventory tracking, reduce errors, and improve efficiency in material handling.

● **Automated Workflow System**: Create automated workflows for approval, processing, and tracking of material requests, reducing manual interventions and ensuring transparency.

User Personas

1)End User (Faculty/Staff/Students)

Needs: Easy and quick material request submission, real-time status updates, and minimal paperwork.

Pain Points: Delays in request approvals, lack of transparency, and excessive paperwork.

2) Inventory Manager

Needs: Efficient tracking of inventory levels, automated reorder alerts, and streamlined approval processes.

Pain Points: Manual data entry, difficulty in managing inventory records, and slow approval processes.

3) Finance Department

Needs: Accurate and timely bill processing, clear audit trails, and integration with financial systems. Pain Points: Manual bill processing, errors in data entry, and lack of centralized data.

4) IT Support

Needs: System reliability, ease of maintenance, and user support.

Pain Points: System downtime, complexity in managing multiple user requests, and integration issues.

User Stories

● **End User Request:** As an end user, I want to submit material requests electronically, ensuring quick approval and streamlined processing within the campus inventory management system.

● **Bill Management:** As an administrator, I need to manage and approve bills digitally, maintaining accurate records and minimizing paper use in the campus inventory system.

Functional Requirements

1) Automated Material Requests:

Enable end users to submit material requests digitally, eliminating paper forms and streamlining the request process.

2) Real-time Inventory Tracking:

Maintain a real-time database of inventory levels to ensure accurate tracking and prevent stockouts.

3) Approval Workflow:

Implement an automated approval system for material requests to ensure proper authorization and expedite processing.

4) Bill Generation:

Automate bill generation and tracking for approved requests, ensuring accurate and timely financial processing.

5) Reporting and Analytics:

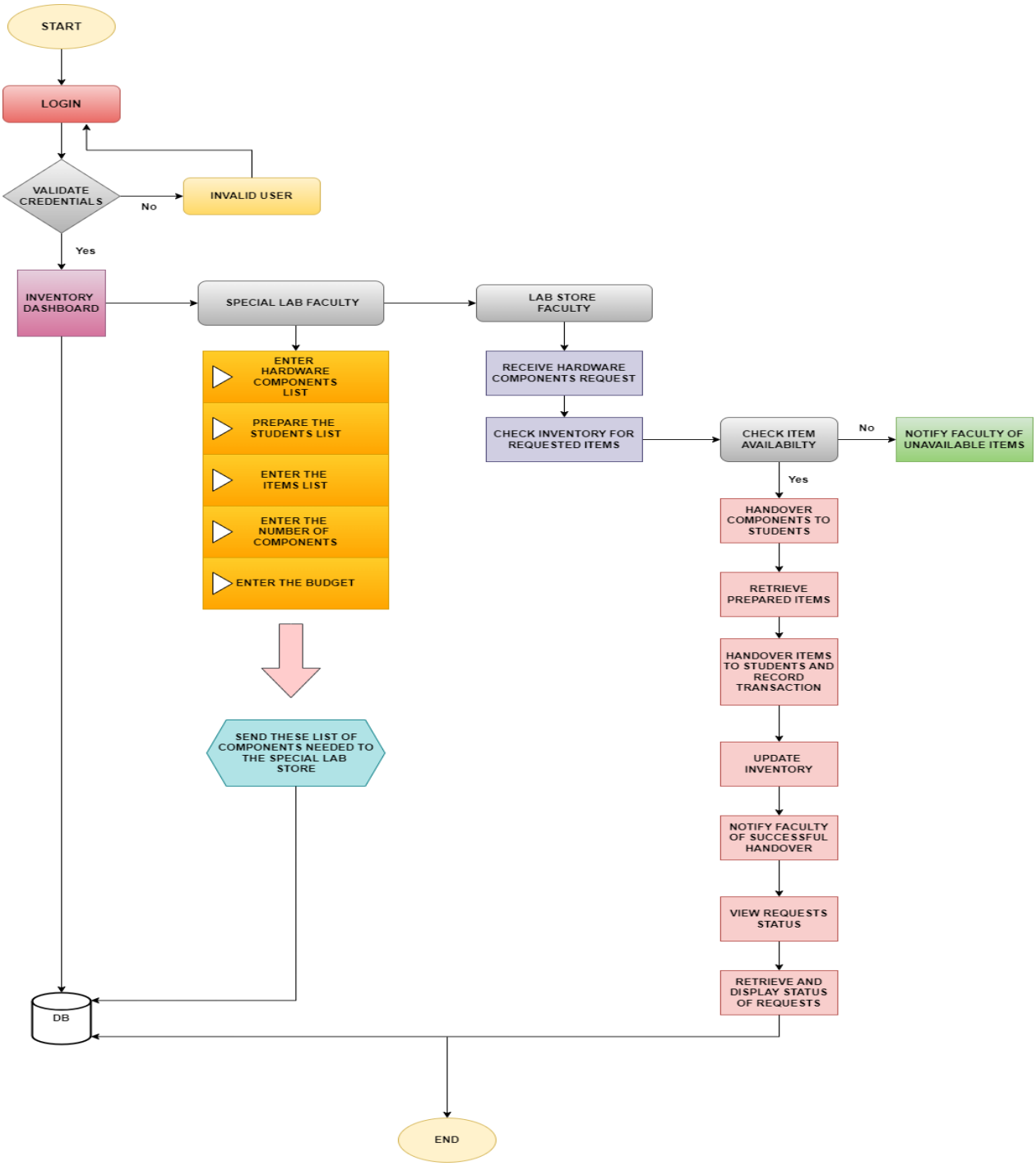
Provide detailed reports and analytics on inventory usage, requests, and financials to support decision-making and optimization.

Non-functional Requirements

1. System Availability: The BIT inventory management system must ensure 99.9% uptime and be accessible across various devices and platforms within the campus to facilitate uninterrupted material requests and billing.

2. Data Security: The system must implement robust encryption and access controls to protect sensitive data from unauthorized access and ensure secure handling of inventory and billing information.

FLOW DIAGRAM


START
LOGIN
VALIDATE CREDENTIALS
No
INVALID USER
Yes
INVENTORY DASHBOARD
SPECIAL LAB FACULTY
LAB STORE FACULTY
ENTER HARDWARE COMPONENTS LIST
PREPARE THE STUDENTS LIST
ENTER THE ITEMS LIST
ENTER THE NUMBER OF COMPONENTS
ENTER THE BUDGET
SEND THESE LIST OF COMPONENTS NEEDED TO THE SPECIAL LAB STORE
RECEIVE HARDWARE COMPONENTS REQUEST
CHECK INVENTORY FOR REQUESTED ITEMS
CHECK ITEM AVAILABILTY
No
NOTIFY FACULTY OF UNAVAILABLE ITEMS
Yes
HANDOVER COMPONENTS TO STUDENTS
RETRIEVE PREPARED ITEMS
HANDOVER ITEMS TO STUDENTS AND RECORD TRANSACTION
UPDATE INVENTORY
NOTIFY FACULTY OF SUCCESSFUL HANDOVER
VIEW REQUESTS STATUS
RETRIEVE AND DISPLAY STATUS OF REQUESTS
DB
END