

# Smart Inventory Management System

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# Meaning of this project

It is a digital system that makes inventory handling easier, faster, and more accurate for small businesses by automatically tracking, managing, and organizing their stock.

# Existing System

The current or existing system used by small businesses is manual, time-consuming, error-prone, and lacks automation. It cannot provide real-time visibility or organized management of inventory.

# Modules

## 1. Authentication Module/role based login

The Authentication module allows a user to log into the system. The system checks the username and password, and if the user is valid, it allows them to access the application.

## 2. Product Management+Stock tracking

This mainly stores the details and also tracks the stock in and the stock-out with proper history.

# Modules

## 3.Low Stock Alerts/Reorder Management

In this module monitors the minimum stock levels. When the stock<threshold then the alert appers on the dahboard.This mainly helps to avoid the stock-out situations.

## 4.Transactions History and Logs

Every purchase or the sale is recorded with time,quantity,person, and product.

# Modules

## 5.Exportable Reports

Generate the professional reports for the business systems and decisions and mainly useful for audits, and monthly reviews.

# System Configuration

Frontend:React/Angular/HTML

Backend:Java Spring Boot

DataBase:MySQL

Notification:Email

# Module 1-Authentication

## Module/role based login

- This mainly allows a user to log into the system.
- The system checks the username and password, and if the user is valid, it allows access to the application.

# Module 1-Main Features

- 1.Secure Login System
- 2.JWT-Based Authentication
- 3.Admin can create/delete the employee accounts.
- 4.Prevent unauthorized users from accessing inventory data.

# Module 1-Main Classes

1. **User class**->Represents user details

- Class And user are userid,username,password,role

2. **AuthController**->This mainly receives login request

- This class mainly includes the login(),logout()

3. **Authservice**->This checks user validity

- validateLogin(username,password)

# Module 1-Database Schema

## 1.Users

Column-Name	Data type	Constrains	Description
User_id	INT	Primary key	Unique id
username	VARCHAR	Uniquekey	Login username
Password	VARCHAR	Not null	Encrypted
username	VARCHAR	Uniquekey	Login username

# Module 1-Database Schema

## 2.User roles

Improves the flexibility if the system has multiple roles.

Column-Name	Data type	Constrains	Description
Role_id	INT	Primary key	Role ID
Role_name	INT	Primary key	Role ID
Role_name	INT	Primary key	Role ID

# Module 1-Database Schema

## 3. User/Role Mapping(Only is using many to many)

Not required for simple one to one role assignment but useful in advanced systems.

**Thank  
You**