# Project Specification: Products Management System

Project Number: 4

Project Title: Products Management System

Project Authors: Mateusz Marciniak, Oskar Wojtkowiak

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## 1. Domain of Application, Motivation, and Goals of the Web Site

### Domain of Application:

The Products Management System (PMS) is a web-based application designed to manage products, warehouses, orders, and invoices efficiently. It serves businesses that require seamless inventory tracking, order processing, and financial management. The system integrates data from multiple warehouses, providing real-time insights into stock levels and order fulfillment statuses.

### Motivation:

Many businesses struggle with inefficient inventory management, leading to overstocking, stockouts, and revenue loss. Manual tracking systems or disparate software solutions create inefficiencies. Also, manual management of large quantities of stock between multiple warehouses is a difficult task. This project aims to centralize product and order management, ensuring accuracy and improving operational efficiency.

### Goals:

- Automate inventory management by providing a centralized platform for tracking products and warehouses.

- Streamline order processing through a structured workflow that manages order placements, shipments, and deliveries.

- Generate financial documents such as invoices automatically, reducing errors and ensuring compliance.

- Enhance decision-making via an analytics dashboard that provides key performance indicators (KPIs) and trends.

- Implement role-based access control (RBAC) to ensure secure and restricted data access.

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## 2. Description of the User Roles

### Business Roles:

* Boss of company (CEO)– Manages users, system settings, and high-level configurations, highest in the hierarchy.
* Warehouse Manager/Logistics manager – Oversees stock levels, updates warehouse records, and manages product movements.
* Regular Worker – moves stock from one place to another, can use different equipment such as f. ex. Forklift to do so
* Sales Manager – Handles order approvals, customer relations, and sales tracking.
* Accountant – Generates invoices, manages payments, and ensures financial reporting compliance.
* Customer – Places orders, tracks shipments, and views invoices.

### Technical Roles:

* System Administrator (SysAdmin) – Manages user accounts, roles, and system permissions, ensuring system security and configurations.
* Database Administrator (DBA) – Oversees database management, updates records, ensures data integrity, and handles backup/recovery.
* Developer – Modifies system code, deploys updates, fixes bugs, and enhances system functionality.
* IT Support Technician – Troubleshoots system issues, assists users with technical problems, and maintains system health.
* Security Officer – Monitors system security, investigates threats, and manages encryption, firewalls, and security protocols.
* DevOps Engineer – Manages system deployments, cloud infrastructure, and automation processes for seamless operations.
* Integration Specialist – Configures external system integrations, manages API connections, and ensures smooth data exchange.

## 3. Functionalities of the Project (TODO)

### Web Pages and Sections:

### Home Page – Overview of the system, login and sign-up options.

### Dashboard – Role-based interface displaying relevant data and controls.

### Product Management – Manage stock levels, add/update products, and track movements.

### Orders & Sales – Place orders, manage approvals, and track sales.

### Finance & Accounting – Invoice generation, payment tracking, and financial reports.

### User Management – Role-based access, user account creation, and permissions.

### Reports & Analytics – Data visualizations, performance insights, and operational statistics.

### System Settings – Configuration options, security settings, and integration controls.

### Data Analysis Functionalities:

### Stock Analytics – Monitor inventory trends, low-stock alerts, and demand forecasting.

### Sales Analytics – Track sales performance, revenue insights, and customer purchase behavior.

### Financial Reports – Generate income statements, balance sheets, and expense tracking.

### Operational Reports – View logistics efficiency, order processing times, and workflow optimization.

### Security Monitoring – Track login attempts, detect anomalies, and audit logs

### Access Control:

Access control is structured in a tiered privilege system, ensuring that users have only the necessary access for their responsibilities.

High-Level Access (Full System Control)

Chief Executive Officer (CEO) – Has unrestricted access to all system functionalities, including user management, financial settings, and business-wide configurations.

System Administrator (SysAdmin) – Manages user roles, permissions, security configurations, and system maintenance.

Administrative-Level Access (Departmental Control)

Warehouse Manager / Logistics Manager – Controls stock levels, updates warehouse records, manages product movement, and oversees logistics operations.

Sales Manager – Manages customer orders, sales tracking, and order approvals.

Accountant – Manages invoices, financial reports, and payment processing with restricted access to other business functions.

Database Administrator (DBA) – Maintains database integrity, handles backups, and ensures data consistency without modifying business rules.

Operational-Level Access (Task-Specific Permissions)

Regular Worker – Limited access to move stock, operate equipment, and update stock movement records.

Customer – Can place orders, track shipments, and view invoices with no administrative privileges.

IT Support Technician – Troubleshoots system issues and assists users but cannot modify critical configurations.

Technical & Security-Level Access (Infrastructure Management)

Developer – Can modify system code, deploy updates, and fix bugs but has no access to financial data or user management.

Security Officer – Monitors system security, investigates potential threats, and manages encryption and firewalls.

DevOps Engineer – Handles cloud infrastructure, system automation, and deployment processes without modifying business operations.

Integration Specialist – Configures API connections, external system integrations, and ensures smooth data exchange while restricting access to core business data.