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Purpose

The purpose of this project is to deliver a system that fulfills the primary objectives of Advanced Smart Inventory Stock Management System by addressing specific user needs and ensuring the system's reliability, usability, and performance. Defining clear requirements will enable targeted development, minimize potential misalignment with user expectations, and establish benchmarks for evaluating the system's effectiveness.

Through this process, the project seeks to create a solution that not only meets technical standards but also provides value to its stakeholders.

Updated list of stake holders

Stakeholder	Description
Store Owner	<p>Description: Business owners directly benefit from the system, which impacts their business's performance and profitability. They rely on it for inventory management, sales tracking, and customer relationship management.</p> <p>Interests: Store owners prioritize features that streamline operations, improve customer satisfaction, and support business growth. They value system reliability, scalability, and the ability to meet evolving business demands.</p>
External Regulatory Body	<p>Description: Regulatory bodies ensure the system complies with industry standards, legal regulations, and security requirements, such as data privacy and financial transaction standards.</p> <p>Interests: Their focus is on system security, data protection, and legal compliance to safeguard consumer rights and data privacy.</p>
Board Members	<p>Description: Board members are high-level stakeholders focused on the system's impact on business goals, growth, and profitability. They may not interact with the system directly but are invested in its strategic alignment.</p> <p>Interests: Board members prioritize system reliability, cost-effectiveness, and scalability to support long-term goals, strategic direction, and risk management.</p>
Inventory Manager	<p>Description: Responsible for monitoring stock levels, reordering supplies, and ensuring smooth inventory flow, the inventory manager relies on the system for efficient inventory tracking and reordering.</p> <p>Interests: They prioritize accurate inventory tracking, low-stock alerts, and easy reorder functionality to avoid stockouts and optimize stock levels.</p>
Sales Associates	<p>Description: Sales associates use the system for customer interactions and at the point of sale, relying on real-time inventory and sales data for effective customer service.</p> <p>Interests: They need easy access to product availability, reliable transaction processing, and support for discounts or promotions during transactions.</p>
IT and System Administrators	<p>Description: Responsible for system maintenance, updates, troubleshooting, and ensuring security, IT and system administrators ensure smooth operations.</p> <p>Interests: They value system stability, ease of maintenance, security, and detailed documentation for troubleshooting and upgrades.</p>
Customers	<p>Description: Though not direct system users, customers benefit from system features that enhance product availability, transaction experience, and customer support.</p> <p>Interests: Customers prioritize smooth, efficient transactions, accurate product information, and reliable support.</p>

Updated Functional Requirements

- **Inventory Tracking:** Enable real-time inventory tracking with alerts for low stock, automated reordering, and stock level history to assist inventory managers in efficient stock management.
- **Sales Processing:** Facilitate fast and reliable sales processing, integrating with the point of sale for quick and accurate transactions.
- **Financial Reporting:** Generate detailed financial reports, tracking revenue, expenses, and profits to assist the finance team in maintaining accurate financial records.
- **User Access Control:** Implement role-based access control for secure data access, ensuring that only authorized personnel can view and modify sensitive information.
- **Regulatory Compliance Management:** Include features to support compliance with data privacy, transaction security, and industry-specific regulatory requirements.
- **Customer Relationship Management:** Store and manage customer interactions and transaction history to assist customer support in providing efficient service.
- **Automated Notifications:** Provide automated alerts and notifications for critical events, such as low stock levels, pending approvals, and sales reports for stakeholders.
- **Scalable Data Storage:** Ensure the system can handle increasing data loads, supporting both current needs and future growth.

Updated Non-Functional Requirements

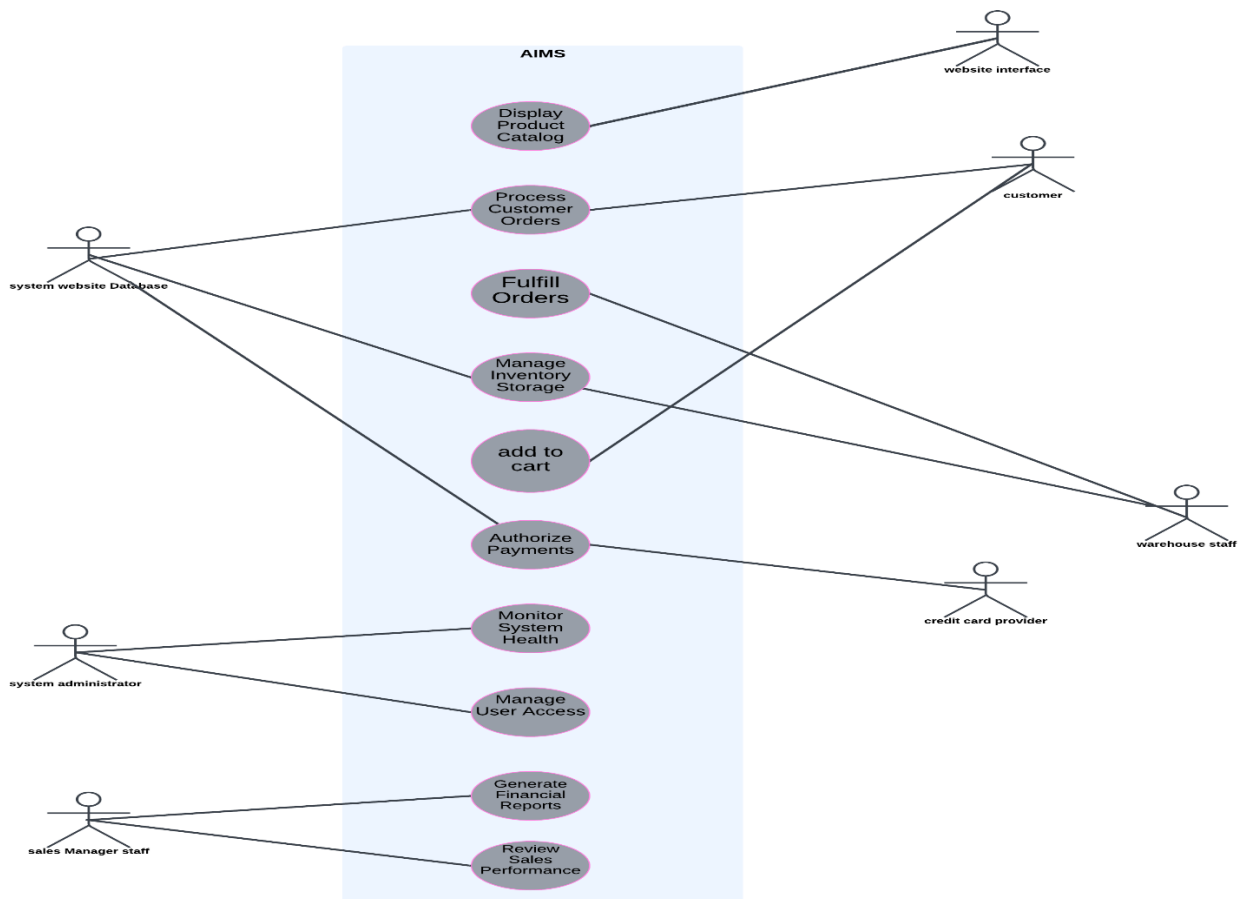
- **Scalability:** Ensure the system can scale horizontally to support growing business demands, including increased transaction volumes and data storage.
- **Reliability:** Maintain system uptime with redundancy and failover options to provide uninterrupted service for all stakeholders.
- **Usability:** Prioritize an intuitive user interface that enhances productivity, allowing users to complete tasks efficiently and accurately.
- **Security:** Implement comprehensive security protocols, including data encryption, access controls, and regular audits, to protect sensitive business and customer data.
- **Performance:** Ensure quick system response times, even under high transaction loads, to maintain productivity for daily operations.
- **Compliance:** Guarantee adherence to local and international data protection laws, industry standards, and regulatory requirements for secure and lawful operation.
- **Maintainability:** Design the system to be easily upgradable and maintainable, with clear documentation for future modifications or troubleshooting.
- **Actionable Insights:** Integrate analytics capabilities that provide actionable insights, helping stakeholders make informed decisions based on system data.

Actors

- Website Interface
- System Website Database
- Customers
- System Administrator
- Credit Card Providers
- Warehouse Staff
- Sales Manager Staff

Use Cases with Descriptions

Use Case	Description
Display Product Catalog	Allows customers to browse available products with details such as pricing, stock availability, and descriptions via the website interface.
Process Customer Orders	Facilitates the ordering process by enabling customers to add items to their cart, proceed to checkout, and finalize purchases.
Fulfill Orders	Enables warehouse staff to pick, pack, and prepare customer orders for shipment based on system-generated order details.
Manage Inventory Storage	Allows warehouse staff to organize inventory, ensuring items are stored safely and efficiently for quick retrieval.
Apply Discounts/Promotions	Allows sales manager staff to create and apply promotional codes or discounts to orders to enhance customer engagement.
Authorize Payments	Ensures secure payment processing by allowing credit card providers to authorize and process transactions at checkout.
Monitor System Health	Allows system administrators to monitor the website and database for performance, security, and uptime, ensuring smooth operation.
Manage User Access	Enables system administrators to configure and control user roles and permissions, ensuring secure access based on roles.
Generate Financial Reports	Provides the finance team with tools to generate detailed financial reports, tracking revenue, expenses, and profit.
Review Sales Performance	Allows sales manager staff to monitor sales metrics and performance reports, analyzing data to make informed business decisions.



1. Display Product Catalog

Primary Actor: Website Interface

1. Customer navigates to the product catalog page.
2. The website interface retrieves product information (name, description, price, stock availability) from the database.
3. The catalog displays the product listings to the customer.
4. Customer can filter or sort products by criteria like category, price, or popularity.
5. The website updates the product display based on the customer's filters or sorting selections.

2. Process Customer Orders

Primary Actor: Customers

1. Customer adds selected products to the cart.
2. Customer proceeds to checkout, where they review the cart contents.
3. The system calculates the total cost, including any applicable taxes or discounts.
4. Customer enters payment and shipping information.
5. The system validates the payment details through the credit card provider.
6. Upon successful payment authorization, the order is confirmed, and a confirmation message is sent to the customer.
7. The system updates inventory to reflect the products sold and sends the order details to warehouse staff for fulfillment.

3. Fulfill Orders

Primary Actor: Warehouse Staff

1. Warehouse staff receives a notification of a new order in the system.
2. Staff accesses the order details, including product information and quantity.
3. Warehouse staff picks the items from storage and prepares them for shipment.
4. Staff updates the system to mark the order as "Packed" or "Shipped."
5. The system sends a shipment confirmation and tracking information to the customer.

4. Manage Inventory Storage

Primary Actor: Warehouse Staff

1. Warehouse staff receives new inventory from suppliers.
2. Staff logs the new inventory into the system, including product details, quantity, and location in storage.
3. System updates stock levels to reflect the new inventory.
4. Staff organizes and stores products in designated warehouse locations for efficient retrieval.
5. Periodically, staff conduct inventory checks to verify quantities and adjust stock levels if discrepancies are found.

5. Apply Discounts/Promotions

Primary Actor: Sales Manager Staff

1. Sales manager creates a new discount or promotional code in the system.
2. Sales manager sets the discount parameters (e.g., percentage off, applicable products, and promotion duration).
3. The system stores the promotion details and applies it during the checkout process for eligible products.
4. Customers can enter the promotion code at checkout, and the system verifies its validity.
5. If valid, the discount is applied to the customer's order, and the final total is adjusted.

6. Authorize Payments

Primary Actor: Credit Card Providers

1. Customer submits payment information at checkout.
2. The system securely sends payment details to the credit card provider for authorization.
3. Credit card provider verifies the payment details and checks for available funds.
4. If the payment is approved, the provider sends an authorization confirmation back to the system.
5. If the payment is declined, an error message is displayed, and the customer is prompted to use an alternative payment method.

7. Monitor System Health

Primary Actor: System Administrator

1. System administrator accesses the system monitoring dashboard.
2. The dashboard displays real-time metrics, including server load, database response time, and error logs.
3. Administrator monitors system health, identifying any potential issues or performance bottlenecks.
4. If issues are detected, the administrator takes corrective actions, such as increasing server capacity or restarting services.
5. The system logs all health monitoring activities for future reference and troubleshooting.

8. Manage User Access

Primary Actor: System Administrator

1. System administrator logs into the admin panel and navigates to user management.
2. Administrator creates new user accounts or modifies existing ones, assigning appropriate roles and permissions.
3. The system enforces access control based on each user's role.
4. Administrator reviews user access logs to ensure compliance with security policies.
5. Administrator can revoke or modify permissions if any unauthorized or suspicious activity is detected.

9. Generate Financial Report

Primary Actor: Finance Team

1. The finance team selects the desired report type and time range in the reporting module.
2. The system retrieves relevant sales, expense, and revenue data from the database.
3. The report is generated, detailing key metrics like total revenue, expenses, and profit margins.
4. The finance team reviews the report and may export it in a format (e.g., PDF or Excel) for external analysis or record-keeping.
5. The system logs report generation activities for auditing purposes.

10. Review Sales Performance

Primary Actor: Sales Manager Staff

1. Sales manager accesses the sales performance dashboard.
2. The dashboard displays metrics such as total sales, revenue, top-selling products, and sales trends over time.
3. Sales manager analyzes the data to identify sales patterns, customer preferences, and potential improvement areas.
4. Based on insights, the sales manager may adjust promotions, pricing, or inventory levels.
5. The system saves any changes or adjustments made by the sales manager for future reporting and analysis.

