User Requirement Specification (URS) Document

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Project Overview:

The proposed system aims to manage and track operations involving warehouses, inventory, products, orders, and user interactions efficiently. It will provide a robust platform for managing stock levels, product information, user data, and purchase orders, streamlining the overall process from warehouse management to customer checkout.

Scope:

This document defines the requirements and expectations for the database and interface that will support the operations of an e-commerce or retail business structure. It includes the management of warehouses, inventory tracking, product details, user accounts, and order processing.

System Users:

1. Warehouse Managers - Oversee warehouse operations and manage inventory levels.
2. Customers- Browse products, place orders, and manage their accounts.

Functional Requirements:

1. Warehouse Management
- 1.1: Ability to create and manage warehouse details including location and associated inventory.
- 1.2: Real-time tracking of inventory levels within each warehouse.

2. Inventory Management
- 2.1: Manage inventory with details such as product ID, current stock, and expiration date.
- 2.2: Automatic update of inventory levels upon shipment and receipt of stock.

3. Product Management
- 3.1: Each product must have a unique identifier and associated details like name, quantity, storage location, expiry date, and price.
- 3.2: Ability to update and manage product details through an administrative interface.

4. User Management
- 4.1: Secure registration and login process for users.
- 4.2: Users can update their profile information including name, location, and contact details.
- 4.3: Encryption of sensitive user information such as passwords.

5. Order Processing
- 5.1: Users can place orders through an integrated cart system.
- 5.2: Real-time updates of order status and tracking.

- 5.3: Integration with payment gateways for secure transaction processing.

6. Cart Management
- 6.1: Temporary storage of chosen products before order confirmation.
- 6.2: Ability to modify quantity, remove items, and review prices within the cart.

Non-Functional Requirements

1. Performance
- 1.1: System should handle up to 10,000 concurrent users without performance degradation.
- 1.2: Inventory updates should reflect in real-time to ensure accuracy in stock levels.

2. Security
- 2.1: Use of SSL/TLS for secure data transmission.
- 2.2: Compliance with data protection regulations to secure user data.

3. Scalability
- 3.1: The system should be scalable to accommodate growth in user base and product inventory.

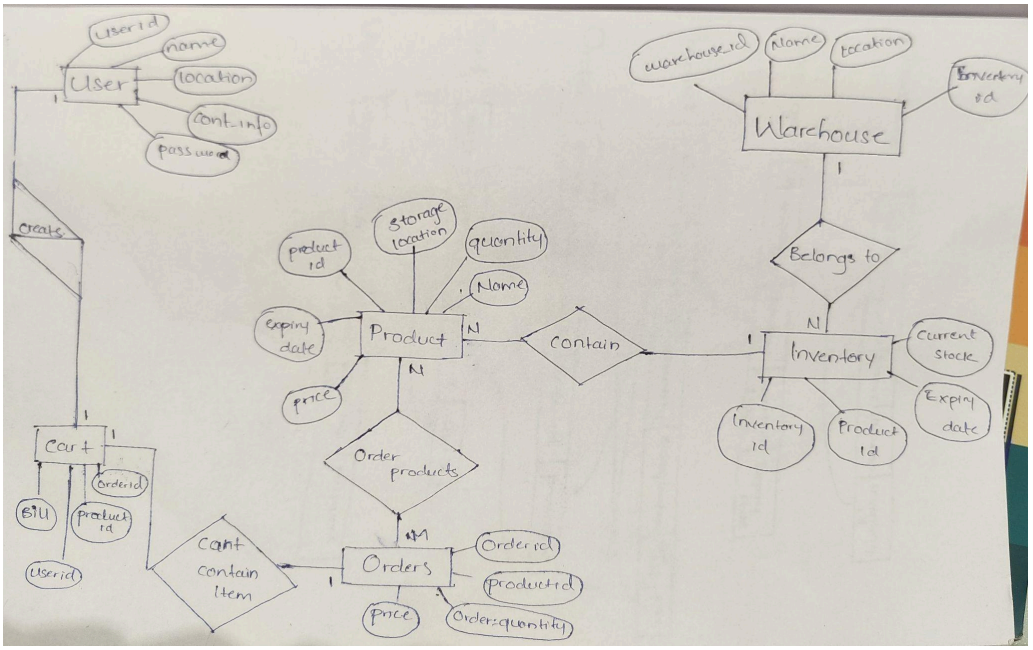
4. Reliability
- 4.1: System uptime should be at least 99.9% outside scheduled maintenance windows.

Constraints:

Data Security - Sensitive information, such as personal user data, must be encrypted to ensure privacy and security.

Scalability - The system should be capable of growing to support an increasing number of users and items over time.

ER Diagram:



Relational Schema: