

### 3. Requirements Gathering

#### Stakeholder Analysis

##### Identifying key stakeholders and their needs:

1. **Business Owner / Management** – Needs real-time stock visibility, reports, and analytics.
  2. **Warehouse Managers** – Require efficient tracking of inventory levels and low stock alerts.
  3. **Sales Team** – Needs an easy way to place and track customer orders.
  4. **IT Team / Developers** – Need system security, performance optimization, and scalability.
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#### User Stories & Use Cases

##### Illustrating scenarios of how users interact with the system:

1. **As a Warehouse Manager**, I want to receive low-stock alerts so that I can reorder products on time.
  2. **As a Sales Representative**, I want to create and manage customer orders so that I can fulfill purchases efficiently.
  3. **As an Admin**, I want to manage user roles and permissions so that only authorized users can access critical functionalities.
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#### Functional Requirements

##### List of key features and functionalities:

- **User Management**
  - Admin, Manager, Staff roles with permissions.
  - Secure login and authentication.
- **Inventory Management**
  - Add, update, and delete products.
  - Categorize products and manage stock levels.
  - Warehouse-wise inventory tracking.
- **Supplier & Procurement Management**
  - Supplier database management.

- Generate purchase orders.
    - Track supplier deliveries.
  - **Order Processing**
    - Create and process customer orders.
    - Link orders to specific warehouses.
    - Order history and tracking.
  - **Shipment & Delivery**
    - Assign shipments to orders.
    - Track shipment status.
    - Integration with third-party shipping providers (if applicable).
  - **Reports & Analytics**
    - Sales reports, stock reports, and financial summaries.
    - Predictive analytics for stock demand.
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## Non-functional Requirements

### Quality attributes to ensure system performance and reliability:

- **Performance** – The system should support up to **10,000+ concurrent transactions** without lag.
- **Security** – Data encryption, role-based access control, and secure authentication.
- **Usability** – Intuitive UI/UX for seamless user interaction.
- **Scalability** – Ability to add more warehouses, products, and users as the business grows.
- **Reliability** – 99.9% uptime with automatic backup and recovery solutions.