**Software Requirements Specification**

**for**

**MarketHub**

**Version 1.0**

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1. **Introduction**
   1. **Purpose**

This document outlines the Software Requirements Specification for MarketHub, an integrated platform designed to streamline the management and operations of wholesale businesses. The system offers tools for suppliers and customers to ensure seamless purchasing, transport, shipment, and returns management, focusing on user satisfaction and efficiency.

* 1. **Document Conventions**

Bold: Used for module names or important terms.

Italics: Used for additional clarifications or explanations.

* 1. **Intended Audience and Reading Suggestions**

This document is intended for:

* + 1. Developers: For the technical implementation of the system.
    2. Testers: For understanding the functionalities and performance requirements.
    3. Stakeholders: To review the system's functionality, scope, and features.
  1. **Product Scope**

MarketHub is designed to support wholesale business operations, focusing on the following modules:

* + - User management, product catalogue, order management, shipment tracking, returns, and warehouse management.
    - Integration with suppliers and customers for improved efficiency.
  1. **References**
     1. MarketHub Concept Overview (Internal Document)
     2. MySQL and Oracle Database Documentation
     3. Python Flask Documentation

1. **Overall Description**
   1. **Product Perspective**

MarketHub is a web-based platform that integrates business operations for suppliers and customers. The system uses **Python (Flask)** for backend development and is powered by MySQL and Oracle databases.

* 1. **Product Functions**

The main features of the system include:

* + 1. **User Management:** registration, login, and role-based access control
    2. **Product Management:** viewing and categorizing products, reviewing products
    3. **Order Management:** Order placement, tracking and Order history
    4. **Shipment Management:** Transport assignment, status tracking, delivery estimation
    5. Discounts and Offers**:** Managing discounts and offers for products.
    6. Returns and Refunds: Handling product returns and refunds, complaint resolution
    7. Warehouse Management: Stock monitoring and restock alerts
  1. **User Classes and Characteristics**
     + Supplier: Uploads products, manages inventory.
     + Customer: Places orders, tracks shipments, handles returns.
  2. **Operating Environment**
     + Frontend: HTML, CSS, JavaScript
     + Backend: Python (Flask)
     + Database: MySQL
     + Development Tools: Visual Studio Code, Spyder
  3. **Design and Implementation Constraints**
* The platform should be designed for scalability and user-friendly navigation.
* The backend should handle a large volume of requests efficiently.
  1. **User Documentation**

Online help section detailing how to use the platform.

FAQs for common issues.

* 1. **Assumptions and Dependencies**

The platform assumes internet connectivity for online operations.

Requires MySQL/Oracle for database management.

1. **External Interface Requirements**
   1. **User Interfaces**

The user interface will be designed using **HTML**, **CSS**, and **JavaScript**.

It will provide a responsive layout for customers, suppliers, and admins.

* 1. **Hardware Interfaces**

The system will be designed to work with standard web server configurations.

* 1. **Software Interfaces**

**Backend**: Python Flask

**Database**: MySQL and Oracle (for storing and querying business data)

* 1. **Communication Interfaces**

The platform will use **HTTP/HTTPS** for communication between the frontend and backend.

1. **System Features**
   1. **System Feature 1: User Management Module**
      1. Description and Priority

This module allows users to register, log in, and manage roles for access control.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: User submits registration/login form.

Response: Platform processes the request and grants access.

* + 1. Functional Requirements
       1. Users must provide a valid email, password, phone number, and role (Supplier/Customer) during registration.
       2. Passwords must be hashed and stored securely.
       3. Role-based dashboards
  1. **System Feature 2: Product Management Module**
     1. Description and Priority

Allows Suppliers to add, update, and categorize products. Customers can browse/search products.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: Supplier uploads product details (name, price, category).

Response: Product added to the catalog and visible to Customers.

* + 1. Functional Requirements
       1. Suppliers can add/edit product details (name, description, price, category, stock).
       2. Products categorized into pre-defined groups (e.g., Vegetables, Fruits).
       3. Customers can filter/search products by name, category, or price.
  1. **System Feature 3: Order Management Module**
     1. Description and Priority

Enables Customers to place orders, track status, and view history.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: Customer adds items to cart and places an order.

Response: Order confirmation email and real-time status updates.

* + 1. Functional Requirements
       1. Order summary with total price, delivery address, and payment method.
       2. Customers can view order history and track shipments.
       3. Suppliers receive notifications for new orders.
  1. **System Feature 4: Shipment Management Module**
     1. Description and Priority

Assigns transport for deliveries and tracks shipment status.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: Order marked as "Ready to Ship."

Response: System assigns transport and updates delivery ETA.

* + 1. Functional Requirements
       1. Real-time tracking using transport ID and vehicle details.
       2. Customers receive shipment status updates (e.g., "In Transit").
       3. Delivery delays trigger automated notifications.
  1. **System Feature 5: Discounts and Offers Module**
     1. Description and Priority

Manages discounts, seasonal offers, and promotional campaigns.

Priority: Medium.

* + 1. Stimulus/Response Sequences

Stimulus: Supplier creates a discount for a product.

Response: Discounted price reflected in the product catalog.

* + 1. Functional Requirements
       1. Order summary with total price, delivery address, and payment method.
       2. Customers can view order history and track shipments.
       3. Suppliers receive notifications for new orders.
  1. **System Feature 6: Warehouse Management Module**
     1. Description and Priority

Monitors stock levels and generates restock alerts.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: Product stock falls below threshold.

Response: System alerts Supplier to restock.

* + 1. Functional Requirements
       1. Real-time inventory tracking.
       2. Automated restock alerts via email/dashboard.
  1. **System Feature 7: Returns and Refunds Module**
     1. Description and Priority

Handles return requests, refund processing, and complaint resolution.

Priority: High.

* + 1. Stimulus/Response Sequences

Stimulus: Customer submits a return request.

Response: System initiates refund and schedules pickup.

* + 1. Functional Requirements
       1. Return requests must include order ID and reason.
       2. Refunds processed within 7 business days.

1. **Other Nonfunctional Requirements**
   1. **Performance Requirements**
      1. The system must support 1,000+ concurrent users with response times under 2 seconds.
      2. Database queries should execute in <500ms.
   2. **Safety Requirements**

i. Data backups performed daily to prevent data loss.

* 1. **Security Requirements**
     1. HTTPS encryption for all data transmissions.
     2. Role-based access control (e.g., Suppliers cannot access Customer payment details).
  2. **Software Quality Attributes**
     1. Usability: Intuitive UI with <10-minute onboarding for new users.
     2. Scalability: Designed to handle 50% annual growth in users/products.
  3. **Business Rules**
     1. Customers must register and verify their email before placing an order.
     2. Suppliers can only list products within approved categories.

1. **Other Requirements**
   * 1. The system must be compatible with modern web browsers (Chrome, Firefox, Edge, Safari).
     2. Email and SMS notifications should be sent for order confirmations, dispatch, and deliveries.
     3. Mobile responsiveness is required for seamless access on smartphones and tablets.
     4. API documentation should be provided for third-party integrations.

**Appendix A: Glossary**

Key terms used in the document:

* MarketHub: A platform for suppliers and customers to manage wholesale transactions.
* Supplier: A business entity that lists and sells products on MarketHub.
* Customer: A user who purchases products from suppliers.
* Order ID: A unique identifier for each purchase transaction.
* Shipment Tracking: A feature that allows customers to track the delivery status of their orders.
* Warehouse Management: A system for suppliers to monitor and manage inventory.
* Role-Based Access Control (RBAC): A security model that restricts system access based on user roles.

**Appendix B: Analysis Models**

The Entity-Relationship Diagram (ERD) is the primary analysis model for MarketHub. It represents the database schema and the relationships between key entities:

A diagram of a flowchart

AI-generated content may be incorrect.

*Fig 1: Entity-Relationship Diagram (ERD) for MarketHub – This diagram illustrates the relationships between key entities in the system, including Users (Suppliers and Customers), Orders, Products, Warehouses, Discounts, Returns, and Transport.*

**Appendix C: To Be Determined List**

Any requirements or design decisions that are yet to be finalized:

* **Payment Gateway**: Decision on which payment processors (e.g., Razorpay, Stripe, PayPal) to integrate.
* **Transport Tracking API**: Choosing between Google Maps API or a third-party logistics API.
* **Customer Support Mechanism**: Whether to use chatbot automation or a ticketing system for issue resolution.
* **Legal and Compliance Policies**: Finalizing return policies, privacy terms, and data protection measures.