

Software Requirements Specification

1. Introduction

1.1 Purpose

This document provides a detailed specification for the development of a Shipping Platform that allows vendors to manage product shipping and delivery logistics. The platform will serve as an intermediary between vendors, buyers, and delivery couriers, facilitating the processing of orders and providing tracking capabilities.

1.2 Scope

The platform will provide functionality for:

- (Buyers to place orders – to be implemented in future versions.)
- Vendors to create the orders and upload their products for inventory management.
- Couriers to receive assigned deliveries.
- Notifications for all involved parties regarding order statuses.

1.3 Definitions, Acronyms, and Abbreviations

- **Vendors:** Businesses that upload their order products for sale.
- **Couriers:** Delivery companies or individuals responsible for transporting goods from vendors to buyers.

2. Overall Description

2.1 Product Perspective

This product will be a web-based platform accessible via browsers, with a clean, user-friendly interface. The platform will initially target small businesses who want to manage their shipping and delivery process, offering them a way to easily handle orders, inventory, and deliveries. The system will have different interfaces for vendors, couriers, and buyers.

2.2 Product Features

1. **Vendor Management:** Vendors will create orders and upload product information (names, stock quantity, etc.) into the platform.
2. **Order Management:** Vendors will manage their orders manually or through future system integration.
3. **Courier Assignment:** The system will automatically assign orders to couriers based on location and availability.

4. **Notifications:** Vendors, buyers, and couriers will receive real-time updates on order statuses.
5. **Product Inventory Management:** Vendors will track stock quantities and be notified when items are out of stock or require restocking.

2.3 User Classes and Characteristics

- **Vendors:** Small business owners who want to handle order fulfillment and shipping.
- **Couriers:** Delivery service providers who will be assigned to deliver packages.
- **Buyers:** End customers who will place orders (in the second version of the application).

3. System Features

3.1 Version 1: Vendor-Only Platform

3.1.1 Product Upload and Inventory Management

- Vendors will upload orders and product information.
- The system will allow vendors to track stock levels and receive alerts when items are out of stock.

3.1.2 Order Management

- Vendors will manually create orders after receiving customer inquiries.
- Vendors will assign products from their inventory to an order.

3.1.3 Courier Assignment

- The system will assign a courier based on availability and order delivery address.
- Couriers will receive notifications about assigned deliveries.

3.1.4 Notifications

- Notifications will be sent to vendors, and couriers about order statuses, including:
 - Order creation
 - Courier assignment
 - Delivery tracking

3.2 Version 2: Full E-Commerce Integration

3.2.1 Buyer Access

- Buyers will be able to browse available products and place orders directly through the platform.
- Vendor product availability will be displayed to buyers.

3.2.2 Order Processing and Courier Assignment

- Once an order is placed, the system will notify the vendor and assign the order to a courier.
- The system will provide real-time tracking information for vendors, buyers and couriers.

3.3 Version 3: Shared Warehouse/Storage

3.3.1 Centralized Warehouse

- Vendors will be able to send their products to a centralized warehouse managed by the platform.
- The system will track stock and send product alerts to vendors when stock levels are low.

3.3.2 Delivery and Courier Integration

- Couriers will be assigned deliveries directly from the warehouse to the buyer's address.
- Vendors can choose to have their products stored in the warehouse or sent directly to buyers.

4. External Interface Requirements

4.1 User Interfaces

- **Vendor Dashboard:** A platform interface where vendors can upload products, manage inventory, create and monitor order statuses.
- **Courier Interface:** A simple interface for couriers to receive and track orders.
- **Buyer Interface (Version 2):** A shopping experience allowing buyers to browse products, place orders, and track deliveries.

4.2 Hardware Interfaces

The platform will be accessible via any standard desktop or mobile browser.

4.3 Software Interfaces

- **Payment Gateway:** Integration with a third-party service (like Stripe or PayPal) for handling payments (optional, depending on version).
- **Courier APIs:** Integration with courier services (e.g. DHL) to manage deliveries and real-time tracking.

5. System Architecture

5.1 Frontend

- React will be used for building the user interface. Components will be developed to support vendor management, order handling, and notifications.
- Material UI will be used for consistent design and responsive layout.

5.2 Backend

- Node.js and Express will be used to build the backend API that will handle order creation, vendor management, and courier assignments.
- PostgreSQL will be used to store product, order, and user data.

6. Non-Functional Requirements

6.1 Performance Requirements

- The system should be able to handle up to 10,000 active vendors and 100,000 orders per day in future iterations.
- The platform should load pages within 3 seconds for an optimal user experience.

6.2 Security Requirements

- All user data must be stored securely (e.g., encrypted passwords).
- Authentication will be managed using JWT or OAuth.
- Communication with external services (e.g., couriers, payment gateways) must use HTTPS for security.

6.3 Reliability and Availability

- The system must be available 99.9% of the time, with scheduled downtime for maintenance.

6.4 Maintainability

- The platform codebase will follow best practices and will be well-documented for future scalability and ease of maintenance.

7. Assumptions and Dependencies

- Integration with external courier services will be possible via public APIs.

- External payment services (e.g., Stripe, PayPal) will be used for payment processing if required.
- Vendors will upload products manually via CSV/Excel in the first version, with future versions introducing automated product imports.

8. Glossary

- **Vendor:** A business that lists its products on the platform and create the orders.
- **Courier:** A delivery service that picks up and delivers products from the vendor to the buyer.
- **Buyer:** A customer purchasing products directly from the vendor and in future versions, on the platform.