Software Requirements Specification

for

“Eagle Service” E Commerce Platform

Version 1.0 approved

Prepared by

Group 30

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to provide a comprehensive overview of a Single Vendor E-Commerce Platform, catering specifically to the needs of a local chain retailer. This platform is meticulously designed to facilitate a seamless experience for both the company's administrators and customers. The document encompasses the platform's core objectives, features, and software specifications. Furthermore, it delves into the functional and non-functional system requirements, security provisions, operational constraints, and contingency plans for external factors. This document serves as a valuable resource for both end-users and the development team responsible for building and maintaining the platform.

1.2 Document Conventions

This document was created based on the IEEE template for System Requirement Specification Documents.

1.3 Intended Audience and Reading Suggestions

This document is designed for the following audience groups:

1. **System Users**:
   - Company Administrators
   - Employees

2. **Development Team**:
   - System Developers

3. **Quality Assurance Team**:
   - System Testers

4. **Stakeholders and Decision-Makers**:
   - Responsible Authorities

Reading Suggestions:

- **Users**: Company administrators and employees are encouraged to review relevant sections detailing system functionalities, use cases, and user-related requirements. This will help them understand how to effectively utilize the system to meet their needs.

- **Development Team**: System developers should thoroughly examine both functional and non-functional requirements to gain a comprehensive understanding of the project's scope and goals. This will guide their development efforts.

- **Quality Assurance Team**: System testers should focus on the sections that detail use cases, functional requirements, and non-functional requirements to prepare for comprehensive testing scenarios.

- **Stakeholders and Decision-Makers**: Responsible authorities should pay special attention to the overarching project goals, objectives, and any sections that pertain to compliance, security, and scalability. This will aid in decision-making and project oversight.

By tailoring their focus to the relevant sections, each group can make the most of this document to support their respective roles and responsibilities within the project.

• Section 1 is primarily written for all the intended audience to get a basic understanding of the project
• Section 2 and 3 can be used by typical users to get a better understanding about the product and its functionality.
• Section 4 and 5 mainly focuses on the technical aspects and the architecture of the system and mainly intended for the developers and system testers.

1.4 Product Scope

This is an e-commerce platform development project for "C," a Texas-based local chain retailer. The objective is to enhance C's online presence and competitiveness. C, which is currently a family-owned business managed by two brothers, aims to leverage technology to expand its customer reach.

C has recognized the need for an e-commerce platform to cater to its Texan customer base more effectively. The company already maintains its stock in various warehouses and operates a courier service subsidiary for deliveries. To begin, C plans to focus on consumer electronics and toys, a subset of its extensive product range comprising over 10,000 items.

The proposed e-commerce platform will enable customers to browse, select, and purchase products online, providing a seamless shopping experience. The platform will also integrate with C's existing infrastructure, including inventory management and delivery services, to ensure efficient order fulfillment.

By taking this strategic step into the digital realm, C aims to bolster its visibility and competitiveness within the Texas market, aligning with its long-standing commitment to efficient and reliable service.

1.5 References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
https://standards.ieee.org/ieee/830/1222/

2. Overall Description

2.1 Product Perspective

C is a local chain retailer in Texas. C is now considering reaching the technology side as an effort of keeping up with the competition. C is family owned and currently run by the brothers. C has decided to hire a team of experts to analyze and design an e-commerce platform for the store. The company maintains its own stock in several warehouses and already has a courier service subsidiary which takes care of delivery functions.

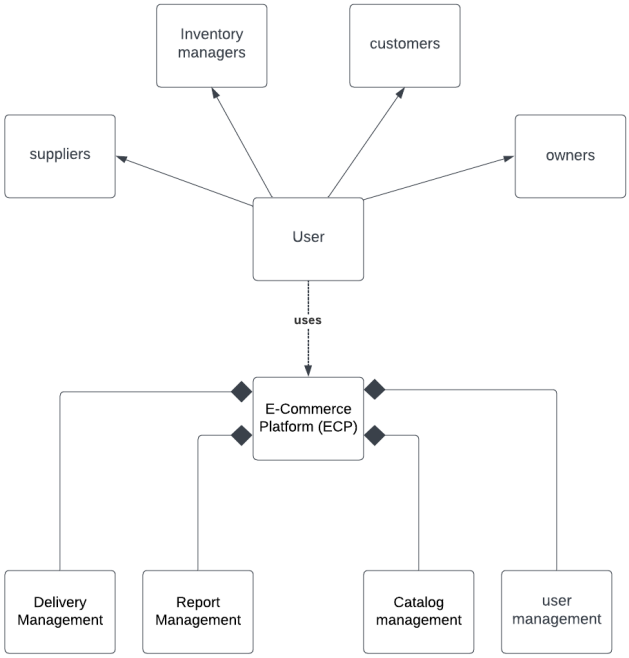


Figure 1 : High level class diagram

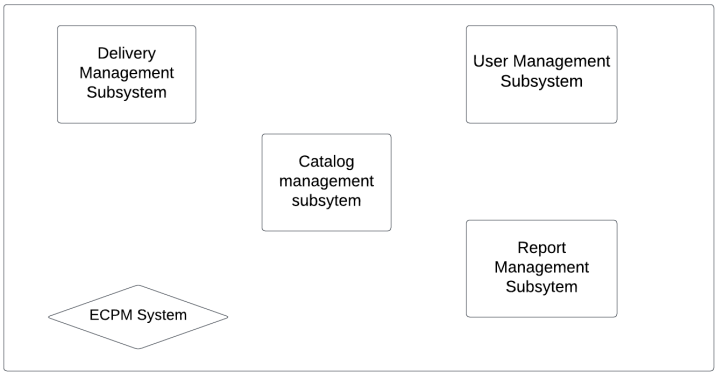
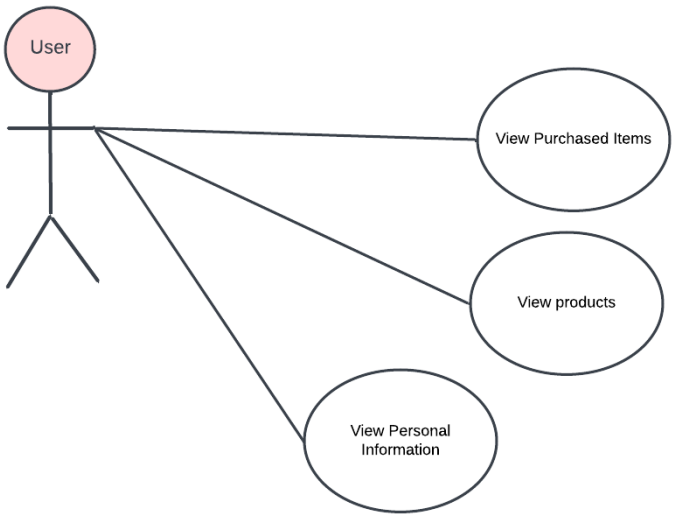


Figure 2: System Environment

2.2 Product Functions

2.2.1 User Use Cases

Diagram:



2.2.1.1 Use case : View Personal Information

Brief Description:
With this use case users can view their personal information that they provided during the registration process.

Step by step Description:
In order to initiate this use case, users must be registered to the system.

01. Select the "My Account" option.
02. Then select "Personal Information".
03. System checks the database for the particular user's information, fetches it and displays it to be seen.

2.2.1.2 Use case : View Purchased Items

Brief Description:
This use case lets users have an insight to products that they have bought.

Step by step Description:

01. Select the "My Account" option.
02. Then select "History".
03. The system will display list of items that the user has purchased.

2.2.1.3 Use case: View Products

Brief Description:

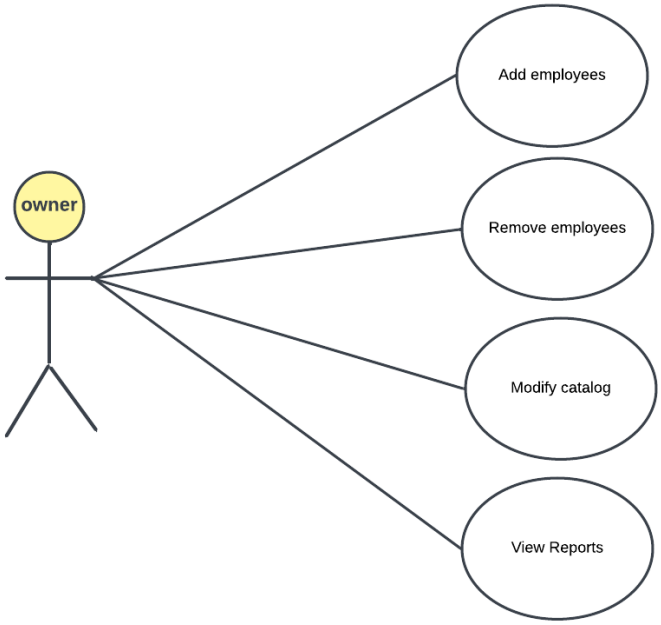
This use case let any user who visits the site to have a look at all the products to be sold.

Step by step Description:

01. You can search for any product using the search bar.
02. Then the system will fetch the product from the database.
03. By clicking on the product you can get more details of the product.

2.2.2 Owner Use Cases

Diagram:



2.2.2.1 Use Case: Add Employee

Brief Description:
Owner is responsible for adding new employees and their details to the system. Once the owner want to add a new employee this use case take place.

Step by step Description:
Before this use case initiates, the Owner must log in to his account and access the add employee page.

1. Request to add a new employee.
2. System prompts a application form to be filled.
3. Owner fills the form with employee details and submits the form.
4. System validates the data and added to the database

2.2.2.2 Use Case: Remove Employee

Brief Description:
Owner has the privilege to remove employees(Inventory manager,workers, etc.) from the system. Once he requested to remove employee, system will change employee status from able to unable in the database.

Step by step Description:
Before this use case initiates, the Owner must log in to his account and access the remove employee page.

1. Request to delete a specific employee by entering the id number.
2. Basic information of the employee is prompted.
3. Owner confirms to remove.
4. System changes the status from able to unable in the database.

2.2.2.3 Use Case: Modify Catalog

Brief Description:
In some cases the owner has to modify the catalog. If a new product is introduced to the shop, change the attribute of the product or remove some product in the platform the catalog should be changed. The system will change the inventory and the product attributes in the database.

Step by step Description:
Before this use case initiates, the Owner must log in to his account and access the modify catalog page.

1. Owner accesses the catalog.
2. The system displays catalog.
3. The owner selects the product that he wants to change.
4. The system display the product.

5. If the owner wants to remove the product there is a 'Remove' button to to remove the product.
6. If the owner wants to add new attributes to the product owner click on 'Edit' button.
7. If the owner wants to add the product there is a 'Add Product' button to to add the product.
8. System update the product.

2.2.2.4 Use Case: View Reports

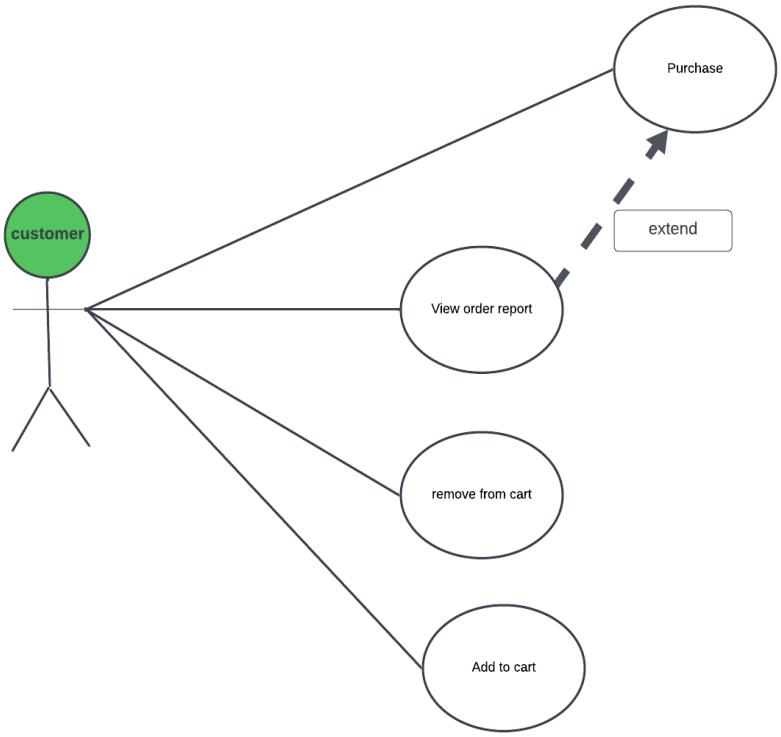
Brief Description:
Owners need to get the quarterly sales report for a given year, products with the most number of sales in a given period and product category with most orders. Once the owner requests to get a report system will create the report.

Step by step Description:
Before this use case initiates, the Owner must log in to his account and access the get report page.

1. Owner accesses the get report page.
2. System displays the types of reports.
3. If the owner needs to get the quarterly sales report there will be a place to enter the year.
4. If the owner needs to get the products with the most number of sales, the system finds the most number of sales from the database.
5. Then the system will provide the report.

2.2.3 Customer Use Cases

Diagram:



2.2.3.1 Use Case: Purchase

Brief Description:
Customers can purchase on the platform. This use case outlines the process of making a purchase.

Step by step Description
1. Customer browses the product listings.
2. Customer selects the desired product(s) by adding them to their shopping cart.
3. Customer proceeds to the shopping cart.
4. Customer reviews the items in the cart and can make changes if necessary.
5. Customer clicks on the "Proceed to Checkout" button.
6. Customer provides shipping and payment information.
7. Customer confirms the purchase.
8. The system processes the payment and updates the order status.
9. The system notifies the Customer of the successful purchase.

2.2.3.2 Use Case: Add to Cart

Brief Description:
Customers have the ability to add products to their shopping cart when they wish to make a purchase. This use case outlines the process of adding items to the shopping cart.

Step by step Description:

Before this use case initiates, the Customer must be logged in to their account and be browsing the product listings.
1. Customers navigate to the product they want to add to their cart.
2. Customer selects the desired quantity of the product.
3. Customer clicks on the "Add to Cart" button.
4. The system updates the shopping cart with the selected product and quantity.
5. The system confirms the addition of the product to the cart.
6. Customer can continue shopping or proceed to checkout as needed.

2.2.3.3 Use Case: Remove from Cart

Brief Description:
In some cases, the customer may need to remove items from their shopping cart before making a purchase. This use case describes the process of removing items from the shopping cart.

Step by step Description:
Before this use case initiates, the customer must be logged in to their account and have items in their shopping cart.
1. Customer accesses their shopping cart.
2. The system displays a list of items in the shopping cart.
3. Customer selects the item(s) they wish to remove.
4. Customer confirms the removal action.
5. System updates the shopping cart, removing the selected item(s) from it.

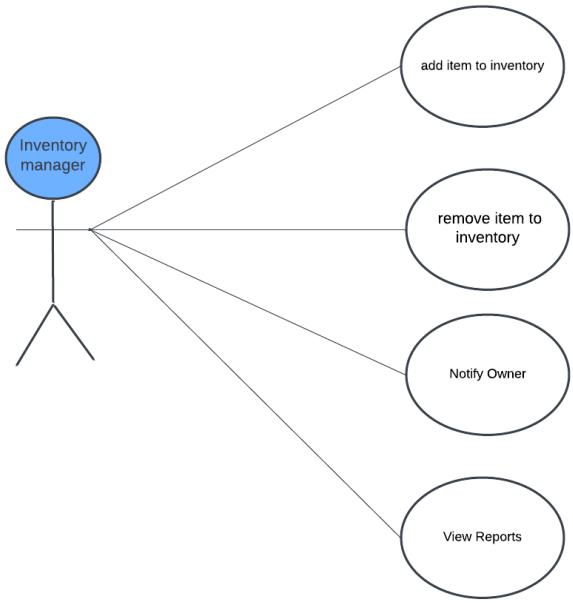
2.2.3.4 Use Case: View Order Report

Brief Description:
Customers can view their order reports on the platform. This use case outlines the process of accessing and viewing order reports.

Step by step Description:
1. Customer logs in to their account on the platform.
2. Customer navigates to the "Order History" or "View Order Reports" section.
3. The system retrieves and displays a list of the customer's order reports, organized by date or order number.
4. Customer selects a specific order report they want to view.
5. The system displays detailed information about the selected order report, including order items, quantities, prices, and order status.
6. Customer can choose to print or download the order report for their records.

2.2.4 Inventory Manager Use Cases

Diagram:



2.2.4.1 Use Case: ***Add product stock to inventory.***

Brief Description:
The inventory manager can add products to their respective inventory when the new stocks arrive.

Step by step Description
Before this use case initiates, the inventory manager must log in to his account.
1. The manager selects the add stock option.
2. The system prompts a form to be filled with the new stock details.
3. The manager fills the form and clicks submit.
4. The system verifies the details.
5. The database is updated with the new stock.

2.2.4.2 Use Case: ***Remove product stock from inventory.***

Brief Description:
The inventory manager can remove products from their respective inventory.

Step by step Description
Before this use case initiates, the inventory manager must log in to his account.
1. The manager selects the remove stock option.
2. The system prompts a list of available products.
3. The manager selects the product.

4. The database is updated with the removed product.

2.2.4.3 Use Case: *Notify owner for stock purchase.*

Brief Description:
The inventory manager must notify the owner when new stock purchases are needed.

Step by step Description
Before this use case initiates, the inventory manager must log in to his account.
1. The inventory manager checks the inventory level of products.
2. The system prompts a form to be filled with the required stock quantities.
3. The manager fills the form and clicks submit.
4. The system adds the purchase request to the database.
5. Send the notification to the owner.

2.2.4.4 Use Case: *View Reports*

Brief Description:
The inventory manager can view the product sales and other trends in sales.

Step by step Description
Before this use case initiates, the inventory manager must log in to his account.
1. The manager selects the "view reports" option.
2. The system displays the list of products.
3. The manager selects the required product.
4. The system displays the current inventory amounts, sales charts etc.

2.3 User Classes and Characteristics

User Classes and Characteristics for an E-commerce Vendor Platform:

1. **Admin User**
   Frequency of Use - Daily or as needed.
   Characteristics
   - Full control over the platform.
   - Manages user accounts, permissions, and configurations.
   - Access to all platform functionalities, including database management.
   - Responsible for overall platform management.

2. **Customer**
   Frequency of Use - Frequent, whenever shopping is desired.
   Characteristics
   - Browses, searches, and purchases products or services.

- Adds items to the shopping cart.
- Proceeds to checkout and completes purchases.
- May create accounts for personalized experiences.

3. **Inventory Manager**

Frequency of Use - Periodic for data analysis &
Characteristics

- Access to data analytics and reporting tools.
- Generates reports and analyzes customer behavior.
- Tracks sales trends and platform performance.
- Optimizes marketing strategies and customer experience.

Each user class has distinct roles and responsibilities within the E-commerce Vendor Platform, aligning with their needs and objectives. The platform is designed to provide tailored experiences and functionalities to meet the requirements of each user class while maintaining security and data integrity.

2.4 Operating Environment

This application is designed to be a web-based platform accessible across various operating systems. It leverages a MySQL database for its data storage and operates on a cloud server infrastructure. Users can conveniently access the system using a web browser on any computer or mobile device with a reliable internet connection. Also our web-based application is made responsive for both mobile devices and desktops.

2.5 Design and Implementation Constraints

The successful operation of this web-based system hinges on the availability of a robust and consistent internet connection. A stable internet connection is paramount as the system retrieves data from a remote MySQL database. Any disruptions in the connection may impede the system's functionality. The choice of MySQL as the database solution not only ensures data security but also mitigates issues related to data redundancy, inconsistencies, and supports concurrent access by multiple users. Additionally, it provides essential data backup capabilities to safeguard against data loss.

The performance and efficiency of the system once implemented on a cloud platform are contingent upon the platform's ability to handle varying levels of traffic. The system's responsiveness and speed will directly correlate with the cloud infrastructure's capacity to manage incoming requests and data processing effectively.

Furthermore, it's important to note that the system is designed to operate primarily in the English language, which is a fundamental language requirement. This constraint ensures a consistent and seamless user experience in English.

In summary, a dependable internet connection, the utilization of MySQL for database management, and the adaptability of the chosen cloud platform to handle traffic loads are critical elements that impact the functionality and efficiency of this web-based system.

2.6 User Documentation

Every user will receive a comprehensive user manual outlining the system's functionalities and offering a quick start guide for easy system navigation. In addition to this, an online system website will be readily available to provide users with continuous support and supplementary information.

Moreover, the system will feature an integrated help center accessible from within the application, offering contextual assistance and detailed instructions whenever users encounter challenges or require further guidance. This dynamic help resource will empower users to swiftly resolve issues and optimize their experience with the system.

2.7 Assumptions and Dependencies

This system is engineered with a user-friendly design, taking into consideration the following prerequisites:

- Dependable Internet Connectivity: Users are expected to maintain a stable internet connection to ensure uninterrupted access to the system.

- Cloud Service Performance Impact: The system's functionalities are intricately tied to the performance of the chosen cloud service provider. Reliability and responsiveness of the system are contingent on the cloud infrastructure.

- Basic Web System Proficiency: Users should possess a fundamental understanding of interacting with web-based systems, including navigating web interfaces and using standard web conventions.

- User Interface Familiarity: A basic knowledge of how to interact with the system's user interface is essential. Users are expected to be acquainted with standard user interface elements and controls.

- English Literacy: Users should be proficient in the English language as the system is primarily designed to operate in English, ensuring effective communication and interaction.

- Device Compatibility: Users must have access to a computer or mobile device with a compatible web browser to access the system.

- Security Awareness: Users should be aware of basic online security practices to safeguard their data and privacy while using the system.

- Regular Software Updates: It is advisable for users to keep their web browsers and devices up to date to ensure optimal performance and security when using the system.

By considering these factors, the system aims to provide an accessible and user-friendly experience, optimizing usability and effectiveness for all users.

3. External Interface Requirements

3.1 User Interfaces

This section describes the interface requirements for the users of this system.

- User login system
- User profile view
- View product catalog
- Customer
  - View of cart items
  - View of payment portal
  - View of order
- Owner
  - Add/remove employees.
  - Add/remove products from catalog
  - View reports
- Inventory Manager
  - Add/remove products from inventory
  - View for sending notifications
  - Product analysis views

Prototypes:
Following images shows the sample prototypes of the user interfaces
1. Login Page – Fig. 1
2. Add Employee Page - Fig. 2
3.User account Page - Fig. 3

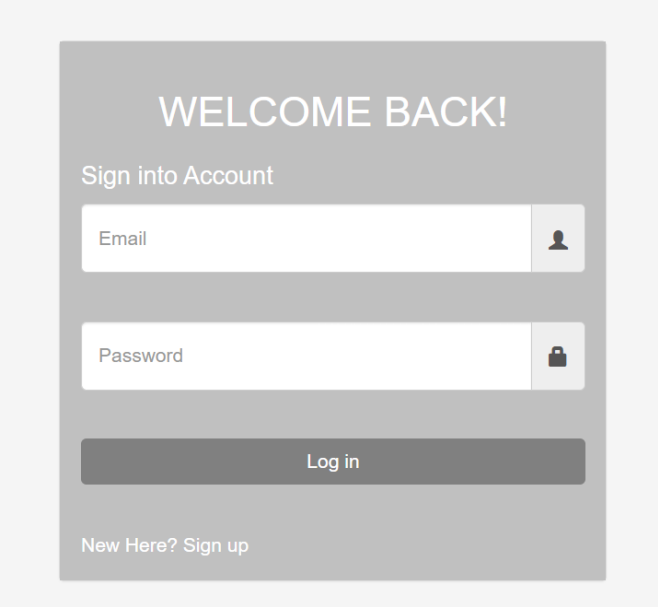


Fig.1 - Login Page

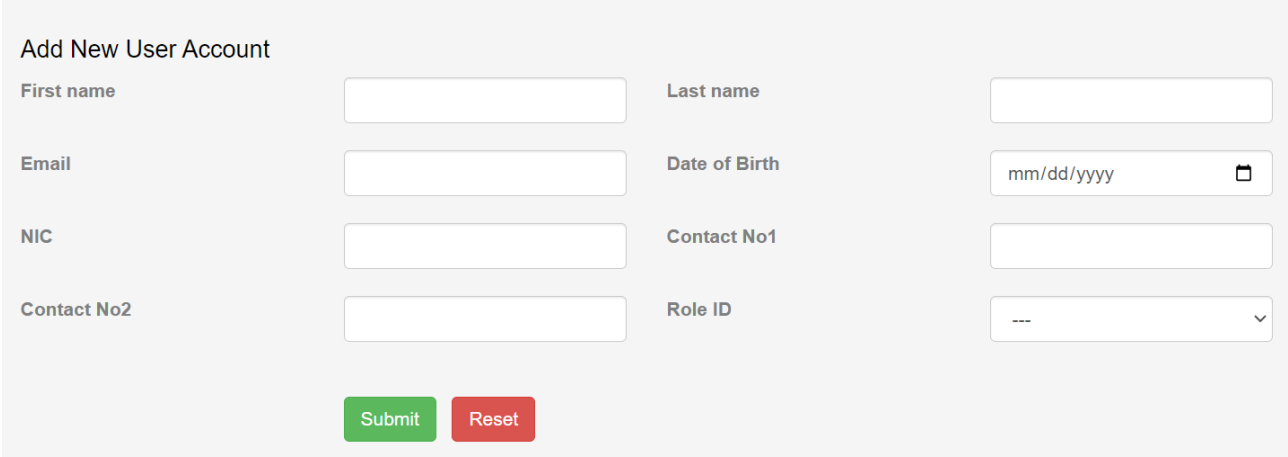


Fig 2 - Add employee page

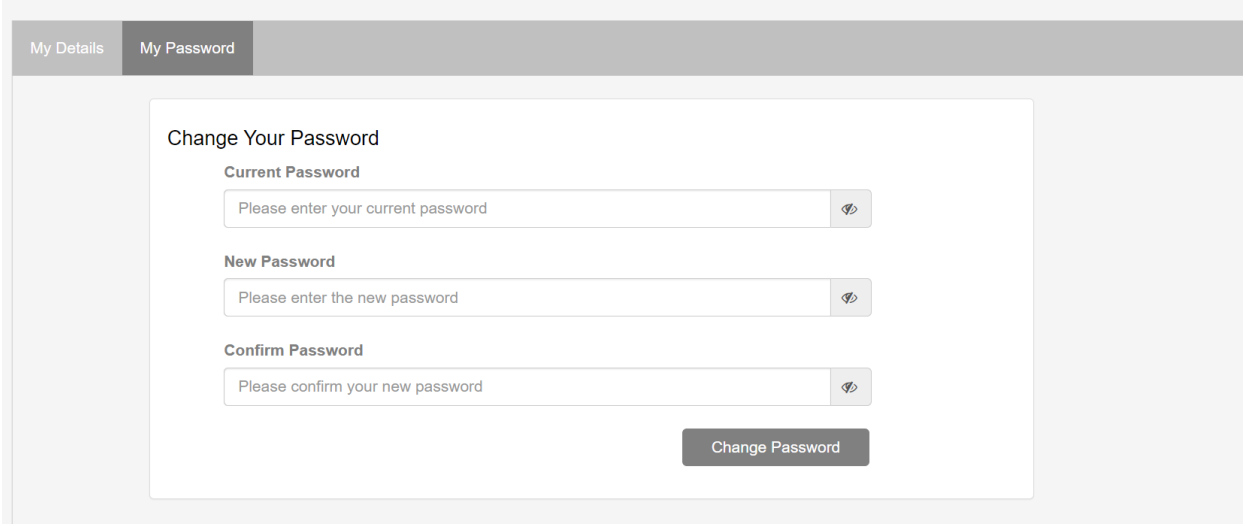


Fig. 3 - User account view

3.2 Hardware Interfaces

This is a web application that connects with customers and database servers to carry out tasks. It requires ample server storage because it needs to store over 1000 customer and product records. The backend is to be built using NodeJS, and it will manage requests from client devices using the HTTP protocol. Users can request services from the system using HTTP, and data is stored and shared in JSON format.

3.3 Software Interfaces

As an internet-dependent web-based e-commerce platform, this system is independent of any specific operating system. It will be accessible on personal computers via web browsers. The user interface will be created using the ReactJS framework, while the backend will be powered by NodeJS. Communication with the database servers will be facilitated through HTTP protocols. The database model for the e-commerce software will be designed to work with the MYSQL environment as the DataBase Management System (DBMS). Deployment will be on a cloud server, and a dedicated database server will be part of the infrastructure.

3.3 Communications Interfaces

The communication between the different parts of the system is important since they depend on each other. When the inventory manager submits a purchase request form it should be notified to the owner. All the communications with the server will be handled by HTTP protocol. All the passwords will be encrypted in communication. JSON is used in data exchanging.

4. System Features

This section illustrates the logical structure of the functional requirements for the product. Sequence of steps to execute this use case is given here.

4.1 View Personal Information

Use Case Name	View Personal Information
XRef	Section 2.2.1.1, View Personal Information
Trigger	Any user tries to view their personal information.
Precondition	User must be registered to the system.
Basic Path	1. Select the "My Account" option. 2. Then select "Personal Information". 3. System checks the database for the particular users information, fetch it and display to be seen.
Alternative Paths	None.
Postcondition	User's personal information displayed.
Exception Paths	With this use case user has the privilege to see his personal information. Every user has the privilege to edit their personal details.
Other	None.

4.2 View Purchased Items

Use Case Name	View Purchased Items
XRef	Section 2.2.1.2, View Purchased Items
Trigger	Any user tries to view items that they have purchased.
Precondition	User must be registered to the system.
Basic Path	01. Select the "My Account" option. 02. Then select "History". 03. The system will display list of items that the user has purchased.
Alternative Paths	None.
Postcondition	Items that the user has purchased are displayed.
Exception Paths	With this use case user has the privilege to see purchased items.
Other	None.

4.3 View Products

Use Case Name	View Products
XRef	Section 2.2.1.3, View Products
Trigger	Any one visits the site.
Precondition	None.
Basic Path	01.You can search for any product using the search bar. 02.Then the system will fetch the product from the database. 03.By clicking on the product you can get more details of the product.
Alternative Paths	None.
Postcondition	Products to sold are displayed on the home page.
Exception Paths	Any visiter can have a look at p
Other	None.

4.4 Add Employee

Use Case Name	Add Employee

XRef	Section 2.2.2.1, Add Employee
Trigger	The owner selects to Add Employee
Precondition	The Owner must be logged in to their account and access the add employee page.
Basic Path	1. Request to add a new employee. 2. System prompts a application form to be filled. 3.Owner fills the form with employee details and submits the form. 4. System validates the data and added to the database
Alternative Paths	None.
Postcondition	The new Employee is added to the database.
Exception Paths	None.
Other	This use case representing an employee is added to the system by the owner.

4.5 Remove Employee

Use Case Name	Remove Employee
XRef	Section 2.2.2.2, Remove Employee
Trigger	The owner selects an employee to Remove.
Precondition	The Owner must be logged in to their account and access the remove employee page.

Basic Path	1. Request to delete a specific employee by entering the id number. 2. Basic information of the employee is prompted. 3. Owner confirms to remove. 4. System changes the status from able to unable in the database.
Alternative Paths	None.
Postcondition	The selected employee is removed from the database.
Exception Paths	None.
Other	This use case representing an employee is removed to the system by the owner.

4.6 Modify Catalog

Use Case Name	Modify Catalog
XRef	Section 2.2.2.3, Modify Catalog
Trigger	The owner select Modify Catalog button to modify the catalog.
Precondition	The Owner must be logged in to their account and access the modify catalog page.
Basic Path	1. Owner accesses the catalog. 2. The system displays catalog. 3. The owner selects the product that he wants to change. 4. The system display the product. 5. If the owner wants to remove the product there is a 'Remove' button to to remove the product. 6. If the owner wants to add new attributes to the product owner click on 'Edit' button.

	7. If the owner wants to add the product there is a 'Add Product' button to to add the product. 8. System update the product.
Alternative Paths	None.
Postcondition	The database is updated after doing the changes.
Exception Paths	None.
Other	This use case is representing the add/remove new product item to the catalog and change attributes of products.

4.7 View Reports

Use Case Name	View Reports
XRef	Section 2.2.2.4, View Order Report
Trigger	When the owner selects view reports.
Precondition	The Owner must be logged in to their account and access the view reports page.
Basic Path	1. Owner accesses the get report page. 2. System displays the types of reports. 3. If the owner needs to get the quarterly sales report there will be a place to enter the year. 4. If the owner needs to get the products with the most number of sales, the system finds the most number of sales from the database. 5. Then the system will provide the report.
Alternative Paths	None.

Postcondition	The owner has successfully viewed the selected type of report.
Exception Paths	None.
Other	This use case is representing the Quarterly sales report for a given year, Products with most number of sales in a given period,Product category with most orders and Given a product, time period with most interest to it.

4.8 Purchase

Use Case Name	Purchase
XRef	Section 2.2.3.1, Purchase
Trigger	The Customer selects to make a purchase from the e-commerce platform.
Precondition	The Customer has accessed the e-commerce platform and is logged in.
Basic Path	1. A customer browses the product listings. 2. Customer selects the desired product(s) by adding them to their shopping cart. 3. Customer proceeds to the shopping cart. 4. Customer reviews the items in the cart and can make changes if necessary. 5. Customer clicks on the "Proceed to Checkout" button. 6. Customer provides shipping and payment information. 7. Customer confirms the purchase. 8. The system processes the payment and updates the order status. 9. The system notifies the Customer of the successful purchase.
Alternative Paths	None.
Postcondition	The purchased items are recorded in the system, and the order status is updated.

Exception Paths	The Customer may abandon the operation at any time.
Other	Ensure that order and payment details are appropriately archived for record-keeping purposes.

4.9 Add to Cart

Use Case Name	Add to Cart
XRef	Section 2.2.3.2, Add to Cart
Trigger	The Customer selects to add a product to their shopping cart.
Precondition	The Customer must be logged in to their account and be browsing the product listings.
Basic Path	1. Customers navigate to the product they want to add to their cart. 2. Customer selects the desired quantity of the product. 3. Customer clicks on the "Add to Cart" button. 4. The system updates the shopping cart with the selected product and quantity. 5. The system confirms the addition of the product to the cart. 6. Customer can continue shopping or proceed to checkout as needed.
Alternative Paths	None.
Postcondition	The selected product is added to the customer's shopping cart.
Exception Paths	None.
Other	This use case represents the process of a customer adding a product to their shopping cart while shopping on the e-commerce platform.

4.10 Remove from Cart

Use Case Name	Remove from Cart
XRef	Section 2.2.3.3, Remove from Cart
Trigger	The Customer selects to remove an item from their shopping cart.
Precondition	The customer must be logged in to their account and have items in their shopping cart.
Basic Path	1. Customer accesses their shopping cart. 2. The system displays a list of items in the shopping cart. 3. Customer selects the item(s) they wish to remove. 4. Customer confirms the removal action. 5. The system updates the shopping cart, removing the selected item(s) from it.
Alternative Paths	None.
Postcondition	The selected item(s) are removed from the customer's shopping cart.
Exception Paths	None.
Other	This use case represents the process of a customer removing an item from their shopping cart while shopping on the e-commerce platform.

4.11 View Order Report

Use Case Name	View Order Report
XRef	Section 2.2.3.4, View Order Report
Trigger	The Customer can view a report after making a purchase.

Precondition	The customer must be logged in to their account and have sufficient funds in their payment method.
Basic Path	1. Customer logs in to their account on the platform. 2. Customer navigates to the "Order History" or "View Order Reports" section. 3. The system retrieves and displays a list of the customer's order reports, organized by date or order number. 4. Customer selects a specific order report they want to view. 5. The system displays detailed information about the selected order report, including order items, quantities, prices, and order status. 6. Customer can choose to print or download the order report for their records.
Alternative Paths	None
Postcondition	The customer has successfully viewed the selected order report.
Exception Paths	None
Other	This use case represents the process of a customer viewing their purchase history report while using the e-commerce platform.

4.12 ***Add product stock to inventory.***

Use Case Name	Add product stock to inventory.
XRef	Section 2.2.4.1, Add product stock to inventory.
Trigger	The inventory manager selects the add stock option.
Precondition	The inventory manager must be logged into his account.

Basic Path	1. The manager selects the add stock option. 2. The system prompts a form to be filled with the new stock details. 3. The manager fills the form and clicks submit. 4. The system verifies the details. 5. The database is updated with the new stock.
Alternative Paths	None
Postcondition	The database is updated with the new stock records.
Exception Paths	None
Other	This use case represents the process of the Inventory manager adding a new product stock to the system.

4.13 *Remove product stock from inventory*

Use Case Name	Remove product stock from inventory
XRef	Section 2.2.4.2, Remove product stock from inventory
Trigger	Manager selects remove stock option.
Precondition	Inventory manager must be logged into the account.
Basic Path	1. The manager selects the remove stock option. 2. The system prompts a list of available products. 3. The manager selects the product. 4. The database is updated with the removed product.
Alternative Paths	None

Postcondition	The database is updated with the removed product.
Exception Paths	None
Other	This use case represents the process of the Inventory manager removinging a stock from the system.

4.14 ***Notify owner for stock purchase.***

Use Case Name	Notify owner for stock purchase.
XRef	Section 2.2.4.3, Notify owner for stock purchase.
Trigger	Manager wants to request a stock purchase.
Precondition	Inventory manager must be logged into the account.
Basic Path	1. The inventory manager checks the inventory level of products. 2. The system prompts a form to be filled with the required stock quantities. 3. The manager fills the form and clicks submit. 4. The system adds the purchase request to the database. 5. Send the notification to the owner.
Alternative Paths	None
Postcondition	The system adds the purchase request to the database.
Exception Paths	None
Other	This use case represents the process of the Inventory manager notifyinging the owner on requesting new purchases.

4.15 ***View Reports***

Use Case Name	View Reports
XRef	Section 2.2.4.4, View Reports
Trigger	Manager selects view reports.
Precondition	Inventory manager must be logged into the account.
Basic Path	1. The manager selects the "view reports" option. 2. The system displays the list of products. 3. The manager selects the required product. 4. The system displays the current inventory amounts, sales charts etc.
Alternative Paths	None
Postcondition	The reports will be displayed.
Exception Paths	None
Other	This use case represents the process of the Inventory Manager viewing reports.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

These performance requirements are crucial for ensuring a responsive and efficient platform usage that can meet the needs of both customers and administrators while maintaining optimal performance under various circumstances.

5.1.1 Response Time:

01. The platform should have a fast response time for user interactions, such as searching for products, adding items to the cart, and completing the checkout process.
02. Page load times should be under 2 seconds for most pages to ensure a smooth user experience.
03. Product search results should be generated in less than 1 second.

5.1.2 Concurrent User Support:

01. The platform must support a high number of concurrent users, especially during peak shopping hours (e.g., Black Friday or holiday seasons).
02. The system should be able to handle at least 1000 concurrent users without significant performance degradation.

5.1.3 Database Performance:

01. Database queries for product information, user data, and order processing should execute efficiently.
02. Database response times should be under 100 milliseconds for common queries.
03. Indexing and caching mechanisms should be implemented to optimize database performance.

5.1.4 Checkout Process:

01. The checkout process, including payment processing, should be completed in less than 5 seconds to prevent cart abandonment.
02. Payment gateway response times should be monitored, and any delays should be addressed promptly.

5.1.5 Inventory Management:

01. Real-time inventory updates should be reflected on the platform within 1 second of a purchase.
02. Out-of-stock items should be marked as such immediately to prevent customer dissatisfaction.

5.1.6 Security:

01. Security checks, such as user authentication and authorization, should not introduce significant delays, with login times under 2 seconds.
02. The platform should be protected against common security threats to maintain performance and protect user data.

5.2 Safety Requirements

Ensuring the safety and security of users and their data is paramount in the design and operation of our E-Commerce Platform. This section outlines a set of critical safety requirements and measures that are vital to prevent loss, damage, or harm that could result from the use of our platform.

5.2.1 Payment Security:

01. Payment transactions must be processed securely using PCI DSS (Payment Card Industry Data Security Standard) compliant methods.
02. Implement fraud detection and prevention measures to safeguard against unauthorized transactions.

5.2.2 Privacy:

01. Respect user privacy by providing clear and transparent privacy policies.
02. Allow users to control their data, including the ability to delete accounts and request data removal.

5.2.3 Backup and Data Recovery:

01. Regularly back up critical system data, including user accounts, orders, and product information.
02. Implement a reliable data recovery process to restore lost or corrupted data in case of system failures or data breaches.

5.2.4 Product Liability:

01. Clearly define product liability responsibilities and limitations in the platform's terms and conditions.
02. Provide accurate product descriptions and disclaimers to avoid misleading customers.

5.3 Security Requirements

Most important part in a system. The privacy for an individual must be ensured because of the system is facilitated on the cloud server. Users' access must be limited only to their workspace. By the terms of a user rights, client must be confined.
Following are some of the security measures in this system:

- Limit access to personal information to only authorized personnel.
- Allow users to control their personal data and provide options for data deletion.
- Ensure secure registration processes to verify user identities.
- Implement role-based restrictions on data editing and viewing.
- Enable automatic session timeouts to log out inactive users.
- Encourage strong password creation with complexity requirements.
- Monitor system logs for suspicious activities and security incidents.
- Keep staff informed about emerging threats and security updates.

5.4 Software Quality Attributes

- **Usability** - Ensure that the platform is designed with a user-friendly interface and intuitive navigation to enhance usability.
- **Availability -** This system should be available anywhere at any time.
- **Maintainability** - Promote maintainability by ensuring that code is well-documented and follows coding standards to facilitate ease of maintenance.
- **Robustness** - Design the platform to gracefully handle unexpected inputs and adverse conditions, such as high traffic loads or malformed requests, to ensure robustness.
- **Adaptability** - Ensure that the platform can adapt to changing market conditions, user behaviors, and emerging technologies.

- **Correctness -** Conduct thorough testing to verify that the platform functions correctly under various scenarios.

- **Flexibility -** Prioritize flexibility to accommodate future feature enhancements and evolving business requirements.

5.5 Business Rules

- Only registered users with authenticated accounts can access personalized features.
- Customers must provide accurate and valid information during registration.
- While registration is encouraged, guests can also make purchases without creating an account.
- Customers can place orders 24/7, but payment processing and order fulfillment may occur during business hours.
- Orders are confirmed via email to the address provided during registration or guest checkout.
- Payment authorization is required before order processing.
- In the case of payment failure, the system will notify the customer and attempt to reauthorize the payment.
- Returns are accepted within 30 days of the purchase date, subject to the platform's return policy.
- Refunds are issued in compliance with the platform's refund policy and may take a specific number of business days to process.
- Product availability and pricing are subject to change and may vary based on location.
- Out-of-stock products will be clearly marked as unavailable for purchase.
- The platform complies with data protection regulations, and user data is used only for order processing and communication.
- Users can access and modify their personal information in compliance with privacy policies.

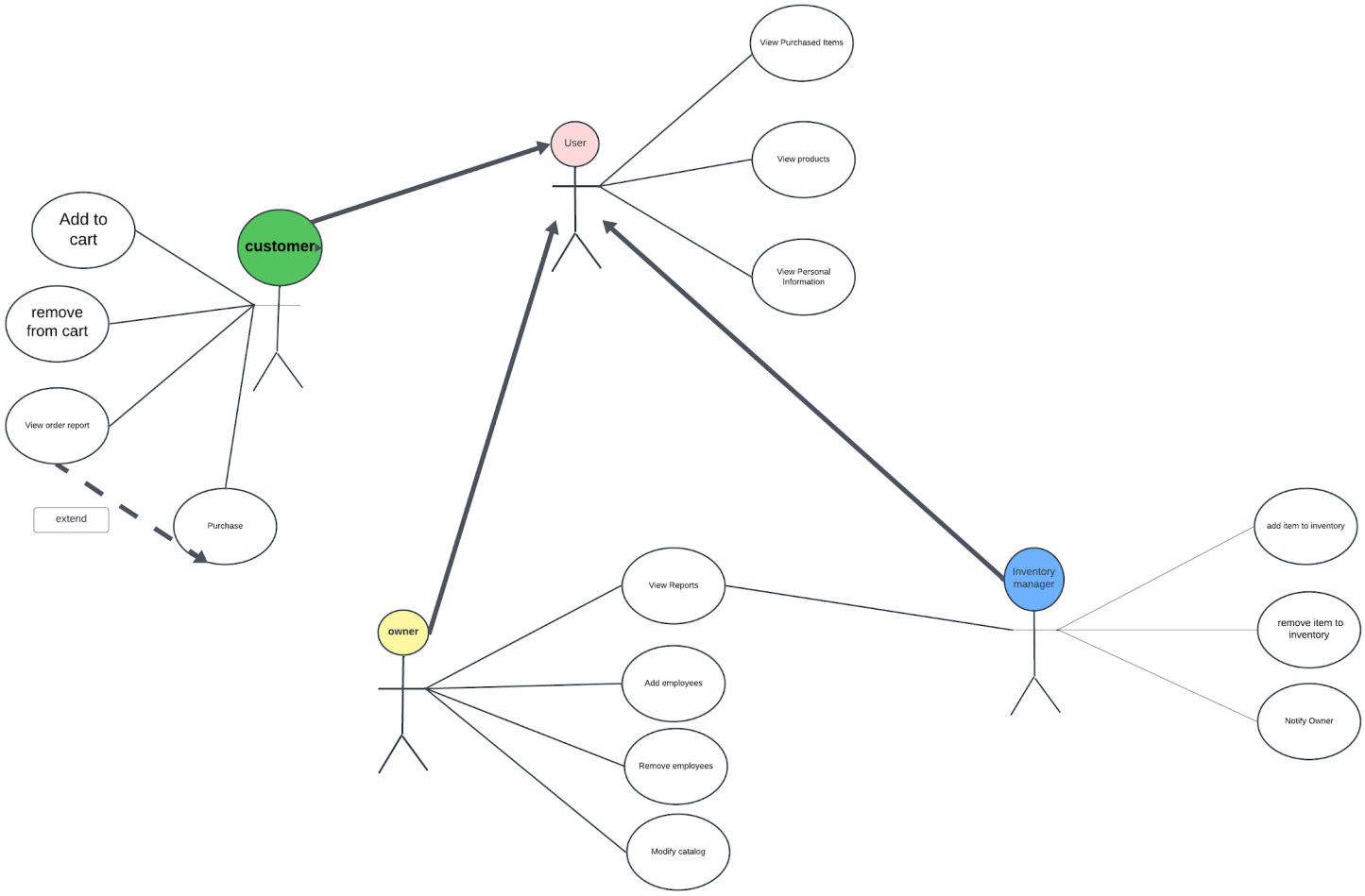
6. Other Requirements

Appendix A: Glossary

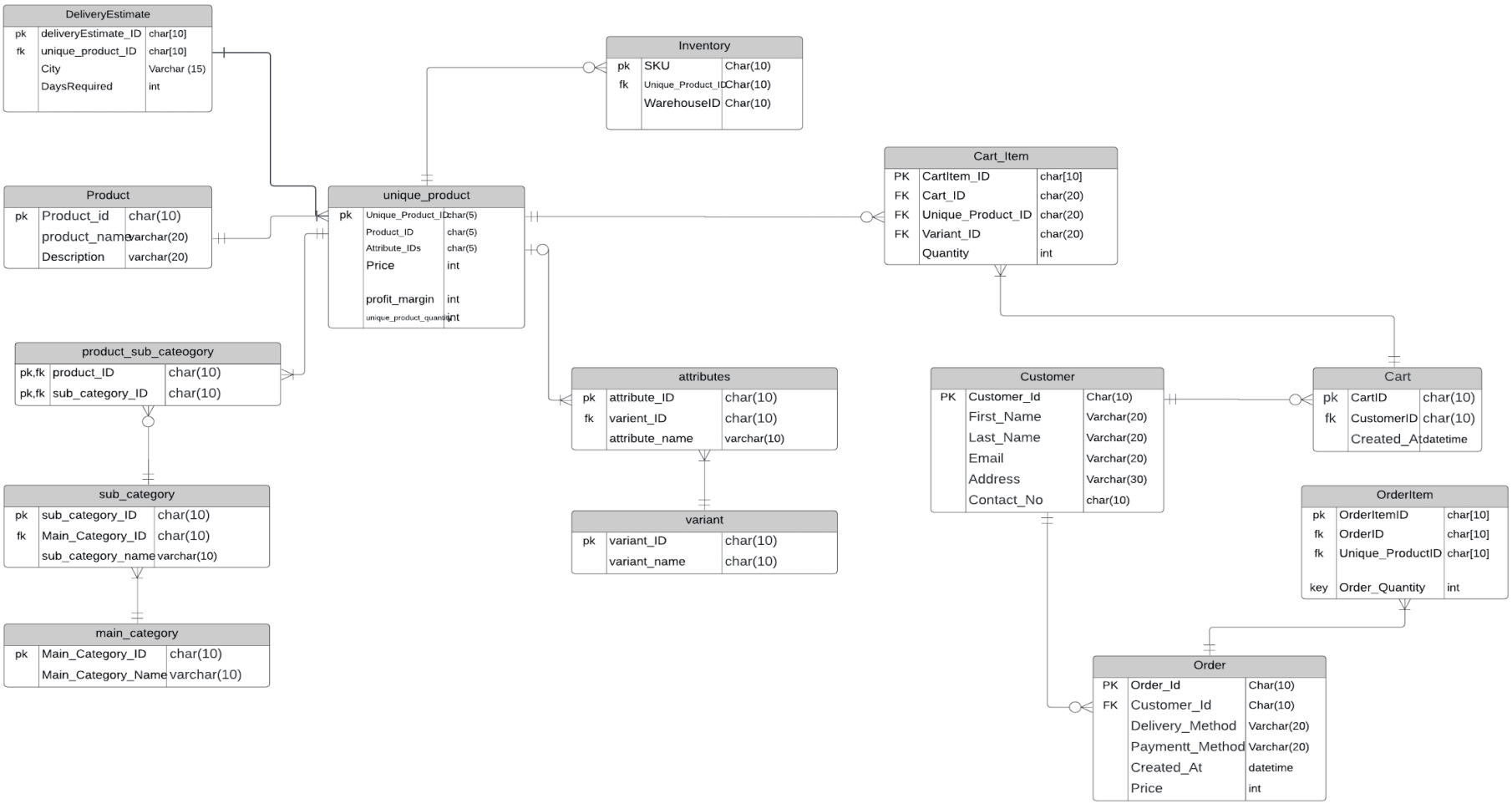
Term	Definition
ECP	E Commerce Platform
DMS	Delivery Management System
CMS	Catalog Management System
RMS	Report Management System
UMS	User Management System
Server	Handles HTTP requests and responses.Accepts and responds for the client requests with content.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate
HTTP	HyperText Transfer Protocol
Backend	Responsible for storing and organizing data,and ensuring everything on the client-side actually works

Appendix B: Analysis Models

a) Overall Use Case Diagram



b) Entity Relationship Diagram



Appendix C: To Be Determined List

- We must determine whether to integrate suppliers into the system.
- We need to add a delivery service module.
- Payment Gateway Integration to facilitate secure payments for customers and vendors thereby ensuring that transactions are processed smoothly and securely.
- We must allow guest users (i.e. unregistered customers) with limited access to browse product listings and to view product details. They may need to create accounts to perform certain actions.