THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

A Business Modelling Project Report on

APPAREL MANAGEMENT SYSTEM

Guided By:

Mr. Krishna Rastogi

In the fulfilment of the award of the degree of

BACHELORS OF COMPUTER APPLICATIONS

In

The Department of Computer Applications

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ABSTRACT

The apparel management system is an e-commerce platform designed specifically for small shop owners. The project involves providing a customized website to the shop owners, which will allow customers to browse through the available products, select and purchase the desired attire, and receive after-sales service. The website is designed to be user-friendly, with easy navigation and a simple checkout process.

The website will have two types of users - customers and admins. Customers will be able to log in to the website, browse through the available products, add items to their cart, and make a payment securely using various payment gateways. They will also be able to view their order history and track the status of their current orders. After-sales service will also be provided to customers through the website.

Admins will have access to the backend of the website, where they can manage the inventory, add or remove products, manage purchases and returns, and view sales reports. The website will provide real-time inventory management, allowing the admins to track the availability of products and update the inventory accordingly. The purchase and return management system will allow the admins to manage the entire purchase and return process, from recording the purchase to issuing refunds, if necessary.

The apparel management system is designed to help small shop owners manage their inventory and sales more efficiently. By providing a user-friendly e-commerce platform, the project aims to increase sales, reduce operational costs, and improve customer satisfaction. The system is expected to be a valuable tool for small shop owners who want to expand their business and compete with larger retailers.

ACKNOWLEDGEMENT

We, the members of the project team, express our heartfelt gratitude to all those who played an integral part in ensuring the successful completion of our project. We acknowledge that the contributions of each person involved were vital, and without their support, this accomplishment would not have been possible.

We extend our gratitude to the Head of Department **Sir P.K. Mehta** for entrusting us with the opportunity to work on this project. His belief in our abilities and willingness to guide us has allowed us to showcase our knowledge and skills.

We would also like to acknowledge the invaluable guidance provided by our project guide **Mr. Krishna Rastogi**. His expertise, unwavering support, and timely feedback were crucial in the successful completion of this project.

Our Department of Computer Applications played a crucial role in enabling us to gain practical experience and understanding of the professional environment. This opportunity has not only enhanced our skills but also boosted our confidence for our future careers.

Last but not least, we express our deepest appreciation to each other for working collaboratively as a team, like the parts of a machine, to bring this project to function. Your commitment, dedication, and hard work have been crucial in achieving our goals, and we could not have done it without each other.

In conclusion, we thank everyone involved in this project and hope to continue working together in future endeavours. We acknowledge that the contributions of each person involved were vital, and we are grateful for their support and guidance throughout the project.

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Software Requirements Specification (SRS)

1. INTRODUCTION

1.1 PURPOSE

The purpose of this system is to streamline and automate several functions that are involved in the apparel industry, thereby enhancing operational efficiency, reducing costs, and improving customer satisfaction. Some of the key purposes of the apparel management system are as follows:

A. Powerful tools for order management:

The apparel management system offers a wide range of powerful tools for order management, enabling businesses to efficiently process orders, track shipments, and manage returns. This ensures that businesses can meet the demands of customers and maintain their reputation for reliability.

B. Real-time data and analytics:

The system provides real-time data and analytics, empowering businesses to make decisions that further optimize their operations.

In summary, the apparel management system offers a comprehensive solution for apparel distribution that optimizes various processes, offers powerful tools for order management, and provides real-time data and analytics, helping businesses achieve greater efficiency, reduce costs, enhance productivity, and provide superior customer service.

1.2 SCOPE

Developing an apparel management system offers vast potential for optimizing and automating many critical processes in apparel distribution. By implementing an apparel management system, businesses can significantly improve their efficiency and productivity, while reducing costs and enhancing customer satisfaction.

Some of the key areas where an apparel management system can provide significant benefits include:

A. **Inventory Management**: Automating the inventory management process can help companies optimize their stock levels, reduce waste, and avoid stock-outs, ensuring timely delivery of products to customers.

B. **Sales Tracking**: An apparel management system can provide real-time data and analytics, enabling businesses to make informed decisions and adjust their sales strategies based on market trends.

C. **Order Processing**: An apparel management system can automate the order processing and fulfilment process, leading to faster processing times and improved accuracy.

D. **Customer Service**: With tools for managing returns, processing refunds, and handling customer inquiries, an apparel management system can provide superior customer service, leading to increased customer loyalty.

1.3 Definitions, Acronyms, and Abbreviations

Here are the key Definitions, Acronyms, and Abbreviations that we will be using for our apparel management website to ensure clear communication and understanding

SKU - Stock Keeping Unit: A unique identifier for each product in the inventory.

POS - Point of Sale: The system used for processing sales transactions.

ERP - Enterprise Resource Planning: The system used for managing business operations, including inventory, accounting, and human resources.

CRM - Customer Relationship Management: The system used for managing customer interactions and relationships.

API - Application Programming Interface: A set of protocols and tools used for building software applications.

SSL - Secure Sockets Layer: A security protocol used for encrypting data transmitted between the website and the user's browser.

UI - User Interface: The visual design and layout of the website, including menus, buttons, and forms.

UX - User Experience: The overall experience of using the website, including ease of use, navigation, and responsiveness.

ROI - Return on Investment: The financial benefits or losses resulting from the investment in the website.

SEO - Search Engine Optimization: The practice of optimizing the website's content and structure to improve its ranking in search engine results.

CTA - Call to Action: The prompt or instruction given to users to encourage them to take a specific action, such as making a purchase or signing up for a newsletter.

HTML – Hypertext Markup Language - It is used for creating web page and allowing developers define layout and functionality of a web page.

CSS – Cascading Style Sheets - It is a style sheet language used to describe the presentation and visual appearance of HTML and XML documents.

Java Script – It is used to create interactive and dynamic effects on web pages and to add functionality to a website.

jQuery – It is a feature-rich JavaScript library that simplifies HTML document traversing, event handling, and animating.

MySQL – It is used to store and manage large amounts of data, providing a reliable and secure data storage solution for web applications.

Php - Hypertext Pre-processor - It is used in web development to create dynamic web pages and enabling web developers to interact with databases and generate dynamic content for web users.

1.4 References

To ensure we have a comprehensive understanding of the apparel management industry, we have consulted a variety of expert sources. Here are the references we used for our project: -

- To gain a comprehensive understanding of the software requirements and specifications format, we referred to a well-written and organized template created by Doris Sturzenberger on 5/17/2017. This template served as an effective reference point for us and helped us to create a detailed and accurate software requirements document.

- To gain insight into how a website for a small shop apparel store looks and how customers interact with it, we referred to the website of Thakur Sarees. This provided us with a valuable sneak peek into the customer experience, enabling us to design a website that is both visually appealing and user-friendly. The reference to Pink Wardrobe's website helped us to create an effective e-commerce platform that will meet the needs of both small shop owners and customers. For those who are interested, the link to this valuable resource is: - pinkwardrobe.in

- To gain a better understanding of how the apparel management system can solve the difficulties faced by admins in offline stores and the types of customizations that store owners require, we interviewed the owner of Kusum's Studio in Vadodara. This personal interaction provided us with valuable insights into the daily operations of an apparel store and helped us to tailor our platform to meet the specific needs of small shop owners. The interview was instrumental in making our project successful and ensuring that it can effectively address the challenges faced by small shop owners.

1.5 Overview

An apparel management system is an advanced software application that optimizes & manages various processes involved in apparel manufacturing and distribution. This comprehensive solution enables automation and streamlining of several functions.

In addition to optimizing apparel manufacturing and distribution processes, our apparel management system also offers a wide range of powerful tools for order management. With our system businesses can efficiently process orders, track shipments and manage returns with ease. This level of management ensures that businesses can meet the demands of customers & maintain their reputation for reliability.

Moreover, with our system's tools for order management and customer service, business can deliver a superior shopping experience to their customers, ensuring satisfaction & retention. Our system also provides real time data & analytics, empowering businesses to make informed decisions that further optimize their operations.

By Offering a comprehensive set of tools for order management system empowers business to efficiently manage their operations, reduce the likelihood of errors and provide a seamless shopping to their customers. It also helps businesses to achieve greater efficiency, reduce costs, enhance productivity & provide superior customer service.

2. Overall Description

2.1 Product Perspective

From a product perspective, an apparel management system can offer several benefits to apparel businesses, including:

1) Improved efficiency in apparel management and distribution processes
2) Automated and streamlined inventory management, reducing waste and avoiding stock-outs
3) Real-time data and analytics to enable informed decision-making and adjustment of sales strategies based on market trends
4) Powerful tools for order management, enabling efficient order processing, shipment tracking, and return management
5) Enhanced customer service with tools for managing returns, processing refunds, and handling customer inquiries
6) Increased customer satisfaction and loyalty due to a seamless shopping experience and reliable delivery of products

Overall, the product perspective of an apparel management system is to provide businesses with a comprehensive solution that optimizes various processes, enhances operational efficiency, reduces costs, and improves customer satisfaction.

2.2 Product Functions

The product functions of an apparel management system are a set of advanced software capabilities that optimize and automate various processes involved in apparel management and distribution. Here is a more detailed description of the product functions of an apparel management system: -

1) **Login/Register**: This feature allows users to register for a new account or log in to an existing one. It provides a secure and user-friendly authentication system that enables customers to access their account information, order history, and saved preferences. This feature can be customized to include social media logins, two-factor authentication, and other security measures to enhance user experience and safety.

2) **Attire Selection**: This feature enables customers to browse, search and select attires from a wide range of options available on the platform. The feature can be designed to provide detailed product descriptions, high-quality images, and customer reviews to help customers make informed purchase decisions. Additionally, the feature can be optimized to provide personalized recommendations based on the user's previous purchase history or preferences.

3) **Payment**: With our module, customers have the ability to review and edit their orders and make seamless payments through our secure payment gateway website. Our payment process is designed to be hassle-free, ensuring a smooth checkout experience. In the event that a payment is unsuccessful, customers will be automatically redirected to the payment page to try again. Once payment is successfully processed, an invoice will be generated for their records and it will be stored in database.

4) **Customer Service**: This feature includes various tools and channels for customer support, such as live chat, email, phone, or social media. It provides an effective and reliable customer service system that ensures customer satisfaction and loyalty. Additionally, the feature can be customized to include a knowledge base, FAQs, to provide self-help options for customers.

5) **Feedback**: This feature enables customers to share their feedback, ratings, and reviews regarding their shopping experience on the platform. It provides valuable insights for businesses to improve their services, products, and customer satisfaction. The feature can also be used to reward customers for their feedback, incentivizing them to provide honest and constructive feedback.

6) **Purchase**: This feature enables businesses to manage and maintain a database related to purchase transactions, including order processing, invoicing, shipping, and returns. It provides a centralized platform for businesses to track and analyse their sales data, inventory levels, and revenue streams.

7) **Inventory Management**: This feature enables administrators to manage stock levels, track inventory movements, and generate reports. It provides real-time insights into inventory levels, demand, and supply patterns, enabling businesses to optimize their stock levels and avoid stock-outs or overstocking.

8) **Offline Billing Management**: This feature enables administrators to effortlessly create bills for in-store customers. Once the goods are sold, the updates are reflected in our database in real-time, and also immediately visible on our website. This ensures a seamless and accurate billing process, providing customers with a hassle-free shopping experience.

2.3 User Characteristics

To deliver a successful project, we must take into account the characteristics of our users, including their knowledge, technical proficiency, accessibility needs, cultural and language differences, goals and objectives, as well as their preferences for the project's features and user interface

A. **Fashion Enthusiasts**: These users are passionate about fashion and style. They are always looking for the latest trends, new styles, and unique designs. They are likely to spend a lot of time browsing through different products and reading product descriptions.

B. **Budget-conscious shoppers**: These users are looking for quality products at reasonable prices. They often compare prices and look for discounts, deals, and coupons to get the best value for their money.

C. **Busy professionals**: These users have a limited amount of time to shop for apparel. They are looking for an efficient shopping experience that allows them to quickly find what they need without spending a lot of time searching through the website.

D. **Social media users**: These users are active on social media platforms and are influenced by fashion influencers and bloggers. They often share their fashion purchases on social media and may follow brands or designers on these platforms.

E. **International users**: The website may attract users from different countries who have different preferences, cultural backgrounds, and shopping habits. The website should be designed to accommodate these users and provide a seamless shopping experience for them.

2.4 General Constraints

While our apparel management system offers numerous benefits, it is important to acknowledge that there are a few limitations that should be considered. These limitations include:

A. **Reliance on Technology**: Since our system is completely accessible through an online website, we are reliant on technology, which may result in cybersecurity threats, system failures, and data loss. It is essential to ensure that our system is secured with appropriate security measures to prevent unauthorized access and safeguard sensitive information.

B. **Customization Demands**: When customers demand customization in products, it may be time-consuming and costly. It is important to set realistic expectations for customization requests and ensure that the costs associated with fulfilling these requests are carefully managed.

Despite these limitations, we are committed to providing a high-quality apparel management system that can significantly benefit businesses in the apparel industry. By understanding and addressing these limitations, we can ensure that our system delivers the expected benefits while minimizing any potential drawbacks.

2.5 Assumptions & Dependencies

Assumptions:

The success of our project hinges on several critical assumptions that we have made, which form the foundation of our project plan and guide our decision-making throughout its execution. The assumptions include: -

a) The target market for the apparel management and selling website is interested in purchasing clothing online.
b) The website will be designed to handle the expected traffic volume without performance issues.
c) The website will be user-friendly and easy to navigate for customers.
d) The inventory tracking system is accurate and up-to-date.
e) The payment processing system is secure and reliable.
f) The website will comply with all relevant laws and regulations regarding online sales.

Dependencies:

Identifying and understanding the dependencies of our project is crucial to ensure its timely completion and success. These dependencies represent the interconnected relationships and inter-reliant tasks that must be executed in a specific sequence, and any delay or disruption in one task can impact the entire project timeline. The dependencies include: -

a) Integration with third-party payment processing services to handle transactions.
b) Availability of reliable and secure web hosting services.
c) Reliable internet connectivity for the website's users.
d) Integration with shipping and delivery services to handle order fulfilment.
e) Availability of accurate and up-to-date product information from suppliers or internal inventory systems.

3. Specific Requirements

1. The system should be accessible via a web browser on desktop and mobile devices.

2. The system should be available 24/7.

3. The system should handle a large number of concurrent users.

4. The system should be secure and protect user data.

5. The system should integrate with a payment gateway and delivery partner API.

6. The system should provide real-time updates to the admin and customers on order status.

7. The system should be scalable to accommodate future growth and expansion.

8. The system should be easy to use and navigate for both customers and admin users.

9. The system should allow for offline purchases to be updated in the database in real-time.

10. The system should be easily maintainable and upgradeable.

3.1 External Interface Requirements

3.1.1 User Interfaces

1. **Login Page**: A page where users can log in with their credentials to access the system.

2. **Product Catalogue Page**: A page that displays the available products with their images, descriptions, and prices.

3. **Shopping Cart Page**: A page that displays the items added to the user's shopping cart and allows them to modify or remove items.

4. **Checkout Page**: A page where users can enter their shipping and payment information to complete their purchase.

5. **Order History Page**: A page that displays the user's order history and allows them to track the status of their current orders.

6. **Return/Exchange/Cancellation Page**: A page that allows users to initiate returns, exchanges, or cancellations for their orders.

7. **Subscription Management Page**: A page where users can manage their subscription settings, including upgrading or downgrading their subscription plans.

8. **Gift Voucher Page**: A page that allows users to purchase and redeem gift vouchers.

9. **Admin Dashboard**: A page where the admin can manage inventory, view sales reports, purchase reports, and customer interaction reports.

10. **Billing Management Page**: A page where the admin can generate and manage bills for offline transactions.

11. **Payment Gateway Integration Page**: A page that integrates with the payment gateway API to facilitate online payments.

12. **Delivery Partner Integration Page**: A page that integrates with the delivery partner API to facilitate shipping and order tracking.

3.1.2 Hardware Interfaces

Hardware interfaces are the physical connections between the system and the external hardware devices. The hardware interfaces required for our system are:

1. **Computer/Laptop**: The system will require a computer or laptop with internet connectivity to access the application.

2. **Mobile Device**: The system should be accessible on mobile devices such as smartphones and tablets.

3. **Barcode Scanner**: If the shop owner is using a barcode system to manage their inventory, the system should support barcode scanner hardware for inventory management.

4. **Printer**: The system may need to integrate with a printer to print bills, receipts, and other documents.

5. **Credit Card Reader**: If the shop owner accepts credit card payments, the system may need to integrate with a credit card reader.

3.1.3 Software Interfaces

Software interfaces are the connections between the system and external software components or services. The software interfaces required for your system are:

1. **Operating System**: The system should be compatible with various operating systems such as Windows, macOS, and Linux.

2. **Web Server**: The system will require a web server to host the application.

3. **Database Management System**: The system will require a database management system to store and manage the data related to products, orders, customers, and inventory.

4. **Payment Gateway API**: The system should integrate with a payment gateway API to process online payments.

5. **Delivery Partner API**: The system should integrate with a delivery partner API to facilitate shipping and order tracking.

6. **SMS and Email Notification Service**: The system may require an SMS and email notification service to send order updates and notifications to customers.

7. **Security Software**: The system may require security software such as antivirus and firewalls to protect against cyber threats.

3.1.4 Communication Interfaces

Communication interfaces are the channels through which the system communicates with external entities. The communication interfaces required are:

1. **Internet Protocol (IP)**: The system should communicate over IP to access the web server, payment gateway, delivery partner, and other external services.

2. **HTTP(S)**: The system should use HTTP(S) to communicate with the web server and external services.

3. **TCP/IP**: The system should use TCP/IP for reliable data transmission between the client and server.

4. **RESTful API**: The system may use RESTful API to interact with external services such as payment gateway and delivery partner.

5. **SMS Gateway API**: The system may use SMS Gateway API to send SMS notifications to customers.

6. **JSON/XML**: The system may use JSON/XML for data exchange between the client and server.

3.2 Functional Requirements

The performance requirements of our system are followed below:

1. **User Management**: The system should provide user registration, login, and profile management functionalities for customers and admin users.

2. **Product Catalogue Management**: The system should allow the admin to add, edit, and delete products from the product catalogue.

3. **Inventory Management**: The system should provide inventory management functionalities such as tracking stock levels, receiving stock, and managing stock transfers.

4. **Order Management**: The system should allow customers to place orders, track their order status, and manage their orders. The admin should be able to view and manage orders, process payments, and update order status.

5. **Returns and Exchange Management**: The system should provide a returns and exchange management functionality for customers to return or exchange products.

6. **Reporting and Analytics**: The system should provide reporting and analytics functionalities such as sales reports, purchase reports, and customer interaction reports to help the admin make informed business decisions.

7. **Premium Subscription and Gift Voucher Management**: The system should provide a premium subscription and gift voucher management functionality for customers to purchase subscriptions and gift vouchers.

3.3 Performance Requirements

The performance requirements of our system are followed below:

1. The system should be able to handle a large number of concurrent users (at least 1000 users at a time).

2. The system should have a fast response time (less than 3 seconds) for all user actions.

3. The system should have a high uptime (at least 99.9%) to ensure continuous availability.

4. The system should have a scalable infrastructure to handle future growth and expansion.

5. The system should have a secure connection to the payment gateway and delivery partner API to ensure safe online transactions.

3.4 Design Constraints

The design constraints of our system are:

1. Compatibility: The system should be compatible with various web browsers and devices.

2. Security: The system should be designed with security measures to protect sensitive data such as customer information, payment details, and login credentials.

3. Scalability: The system should be designed to handle a large number of concurrent users and data volumes.

4. Usability: The system should be designed with a user-friendly interface that is easy to navigate and use for both customers and admin users.

5. Reliability: The system should be designed to minimize downtime and errors to ensure that customers can access the system 24/7.

3.5 Attributes

The attributes of our system are:

1. Availability: The system should be available 24/7 and provide reliable access to customers and admin users.

2. Accuracy: The system should provide accurate and up-to-date information about products, orders, and transactions.

3. Flexibility: The system should be flexible enough to handle different types of products, pricing models, and delivery options.

4. Scalability: The system should be able to scale up or down as needed to handle fluctuations in traffic and order volume.

5. Usability: The system should be easy to use and navigate for both customers and admin users.

6. Maintainability: The system should be easy to maintain and update, with minimal downtime and disruption.

7. Portability: The system should be designed in such a way that it can be easily moved to different hosting environments if needed.

4. UML DIAGRAMS

UML (Unified Modelling Language) diagrams are a set of graphical notations used to describe, design, and communicate the structure and behaviour of software systems. UML diagrams are used to depict the various aspects of a software system, including its components, interactions, and relationships with external systems. UML diagrams are widely used in software development, as they provide a common language and a standardized way of communicating complex systems to stakeholders and team members.

4.1 Tools Used

The tools we have used to develop our apparel management system include:

A. **Draw.io**: We have used Draw.io, a web-based diagramming tool, to create visual representations of our system architecture and user interface. Draw.io allows us to create detailed diagrams that illustrate the flow of data and processes within the system, making it easier to communicate our ideas and collaborate with team members.

B. **Star-UML**: We have used Star-UML, an open-source UML tool, to create and document the system design and structure. Star-UML allows us to create clear and detailed UML diagrams that help us better understand the system and its components, as well as facilitate communication and collaboration with team members.

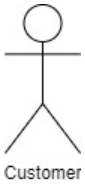
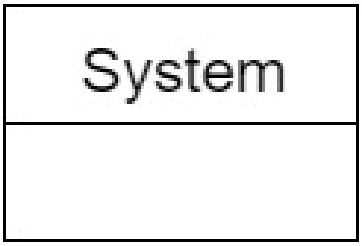
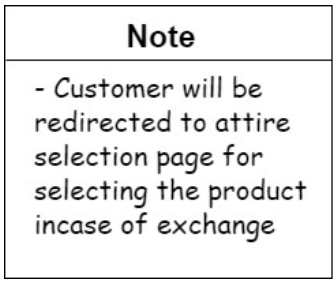
Overall, the use of these tools has enabled us to create a high-quality apparel management system that is efficient, reliable, and user-friendly. These tools have helped us to visualize and design the system effectively, leading to a successful implementation and improved productivity for businesses in the apparel industry.

4.2 Use Case Diagrams

The primary purpose of a use case diagram is to provide an overview of how a user or actor can interact with the system. By presenting a graphical representation of the system's functionalities and the users who interact with it, it helps to identify the requirements of the system & ensure that they align with user's needs.

Moreover, a use case diagram helps to capture the essential functionalities of the system & it's scope, making it easier to communicate with stakeholders & developers. It also facilitates the identification of potential errors or misunderstandings that could arise in the development process.

4.2.1 Use Case Symbols

Name	Symbol	Description
Actor		Actors are external users who interact with a system and can take many forms, including individuals, organizations, or external systems. They must produce or consume data and are essential for the effective operation of the system.
Use Case		Use cases are written descriptions of how users will perform tasks on a website or system. They represent a specific situation in which the product or service could potentially be used and outline the system's behaviour in response to a user's request.
System Boundary		A system boundary is a rectangle in a use-case diagram that separates internal system use cases from external actors.
Note		Comments in a use-case diagram provide textual information about the system's functionality or the actions being performed. They are an essential part of the diagram and aid in the understanding and interpretation of the model.

4.3 Actors

In a use case diagram, an actor is a vital element that represents a role played by someone or something in the interaction with the system. An actor can be human, machine or another system that interacts with the system.

In our project, there are several main actors that interact with the system. These include:

A. **Customer**: This is the primary actor in our system and it represents the end-users who utilize the system to access the services or perform certain tasks.

B. **Admin**: This actor represents the system administrators who manage the system's functionalities including user management, system configuration and maintenance.

C. **System**: This actor represents the core system functionalities that interacts with other actors and external systems to perform various tasks.

D. **External API (Application Programming Interface)**

a) **Payment Gateway**: This actor represents external systems that interact with our system, in this case banks are that provide online payment services to our customers.

b) **Delivery Partner:** This is a software interface that connects the website to the delivery partner's system. This integration enables real-time tracking, shipping rates, and delivery-related data to be accessed by the website. By automating the delivery process, businesses can streamline operations and enhance customer satisfaction.

4.4 User Modules

4.4.1 Customer Modules

As a user of our project, you will interact with several modules that are crucial to its functionality and your overall experience. These modules include:

A. Login/Register
B. Attire Selection
C. Payment
D. Customer Service
E. Feedback

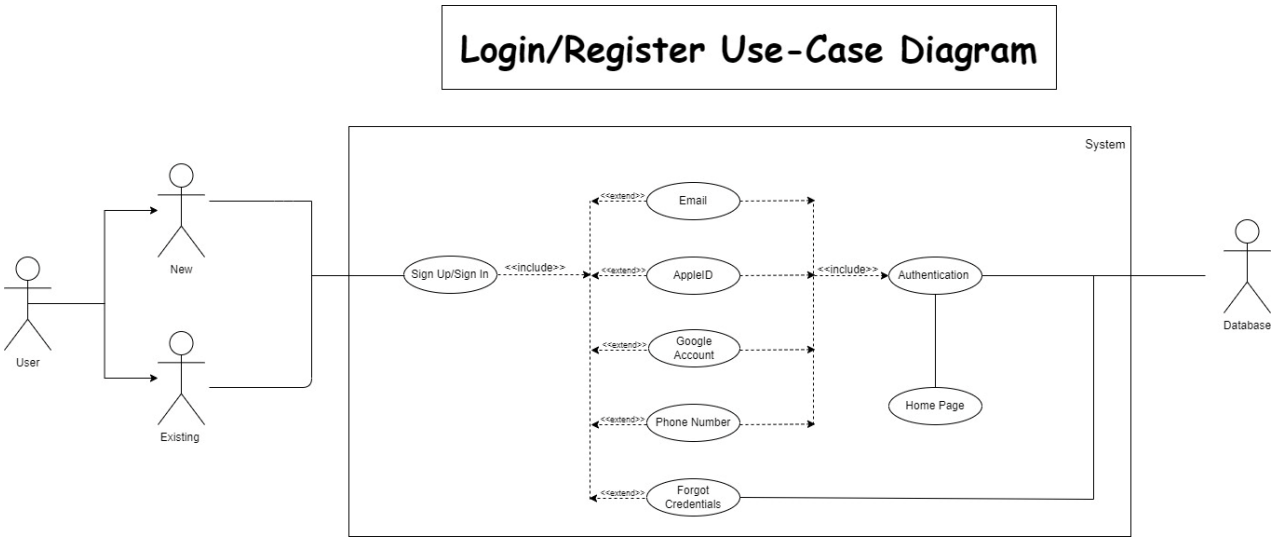
4.4.2 Admin Modules

As an admin of our project, you will interact with several modules that are crucial to its functionality and your overall experience. These modules include:

A. Purchase
B. Inventory Management
C. Offline Billing Management

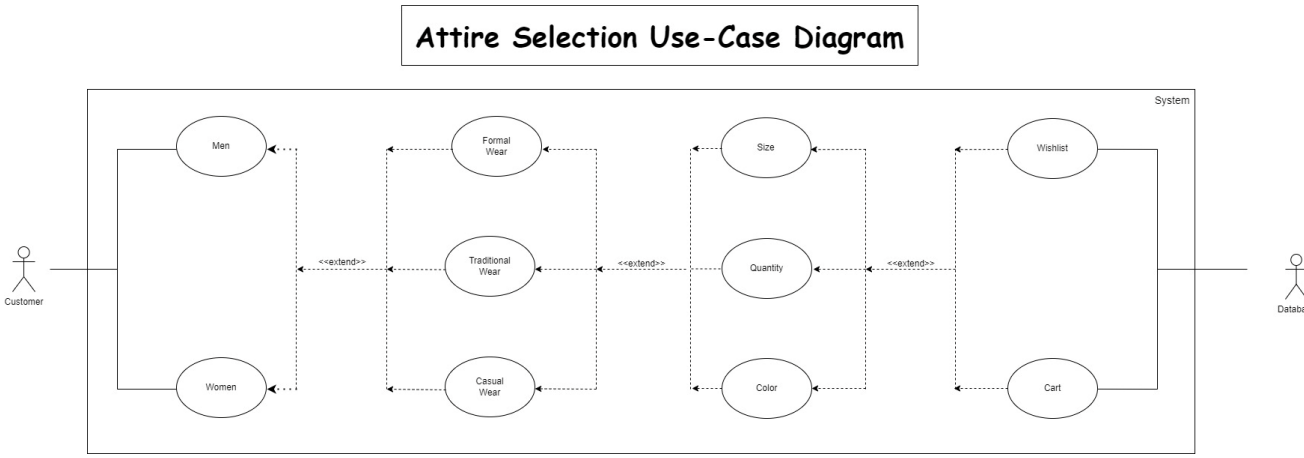
Module 01: Login/Register

The sign-in/sign-up button allows users to quickly and easily access the features and services of our website. By clicking on this button, users can either log in to their existing account or register themselves as a new user. This streamlined process helps to ensure that users can quickly begin to engage with our website and take advantage of its offerings. To make login and registration easy and accessible, we are providing a positive user experience and encouraging users to stay engaged with our website over the long term.



Module 02: Attire Selection

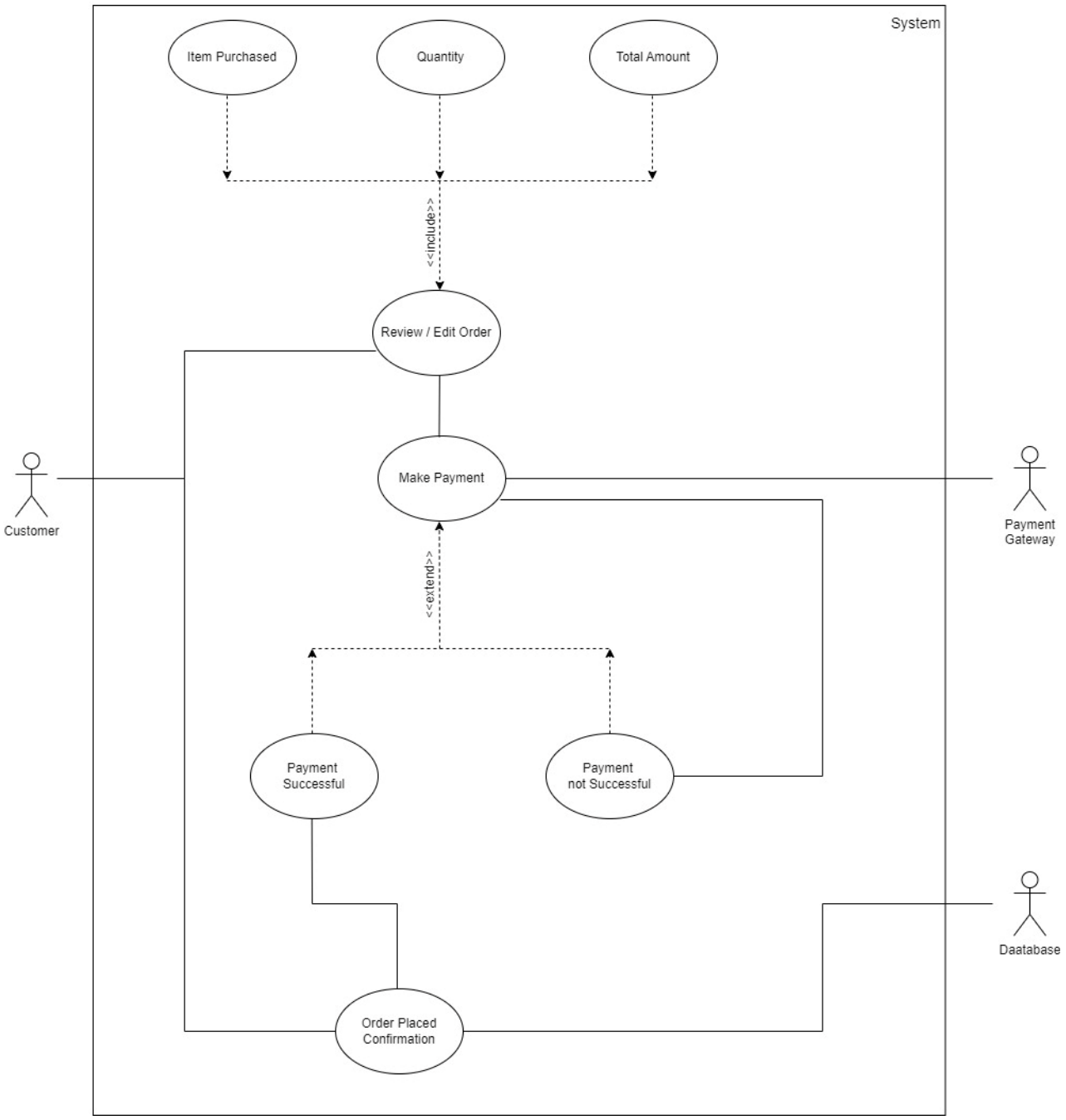
Our website provides a convenient and easy-to-use interface for customers to browse and purchase clothing items. On the page, customers can select their preferred category of clothing from options including men's, women's, boys', and girls'. Each of these categories offers a range of clothing options, including formal wear, traditional wear, and casual wear, ensuring that customers can find the perfect outfit for any occasion.



Module 03: Payment

Our website's cart feature enables you to easily review and edit your order before proceeding to make a secure payment through our trusted payment gateway. Upon successful payment processing, our system will update the order confirmation in our database, ensuring a hassle-free ordering experience for you. However, if your payment is not successful, our system will redirect you to the payment page to try again, ensuring that you are able to complete your order without any inconvenience.

Payment Use-Case Diagram

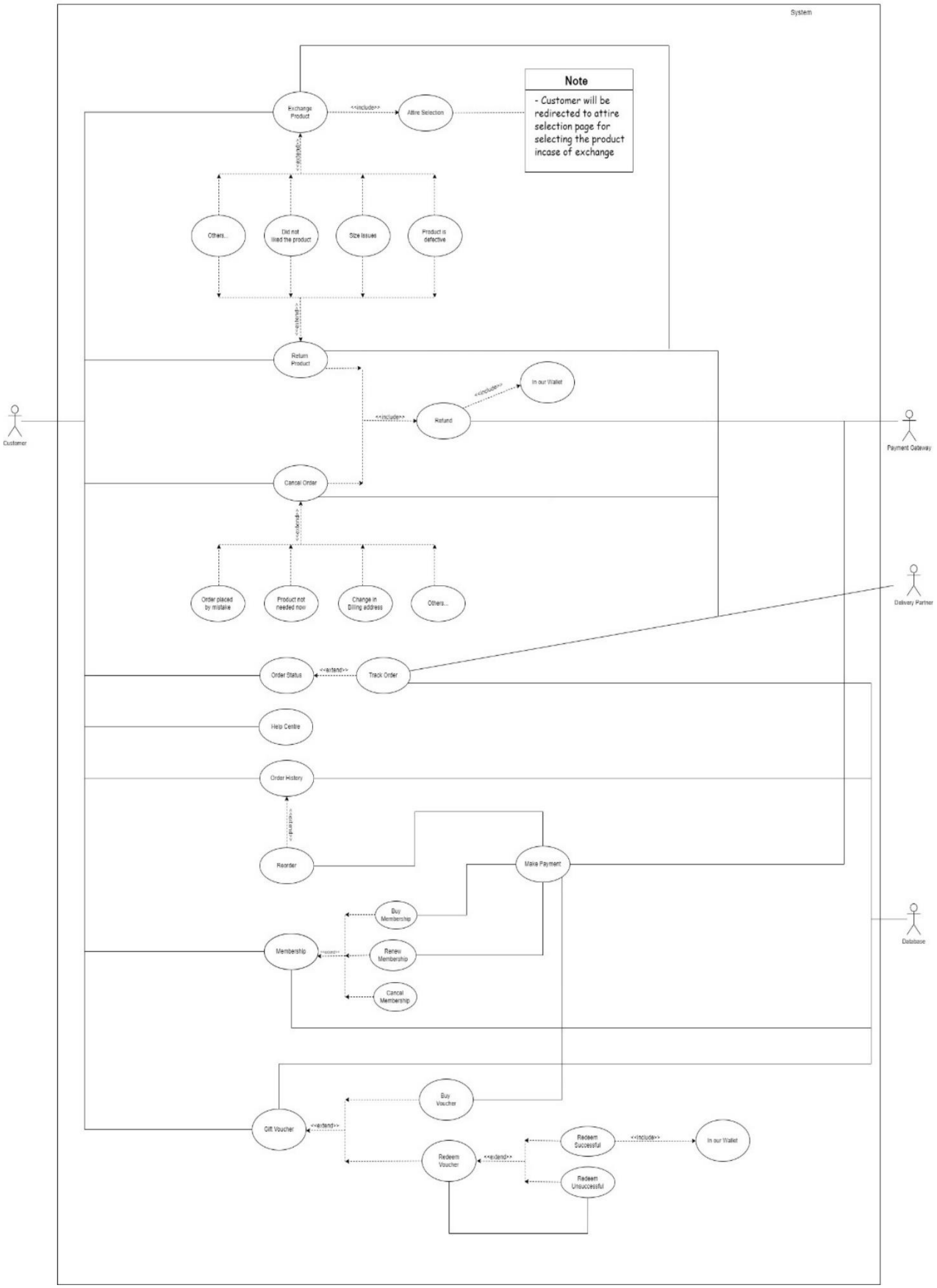


Module 04: Customer Service

Our website's service section offers a range of convenient services for our valued customers. You can easily return or exchange a product, and if you choose to return a product, you can also get a refund. Additionally, you can reorder any of your previous orders, track your current order, and contact our help centre for assistance with any queries or concerns.

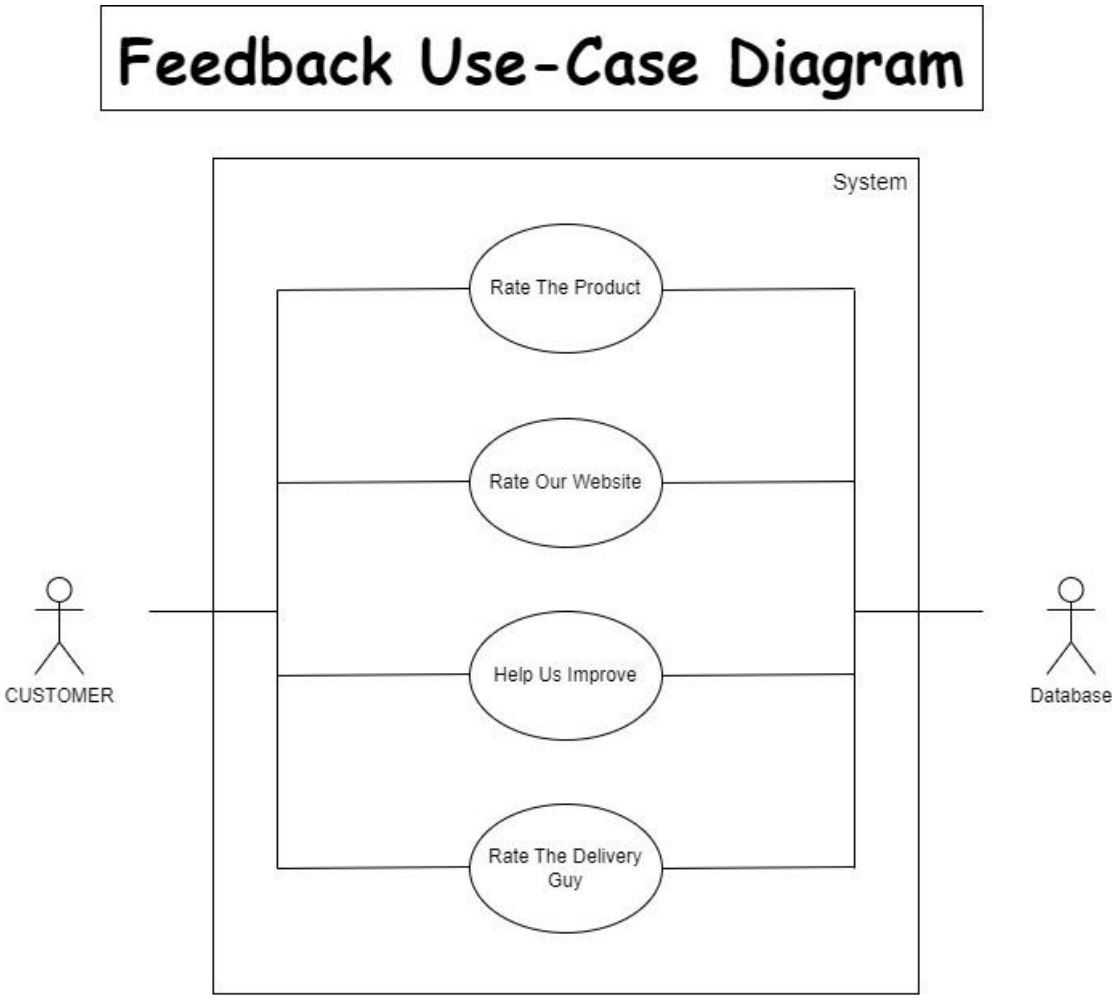
For added convenience, you can purchase a membership through our service section, and also buy and redeem gift vouchers. With these services, we strive to ensure that our customers have a seamless and hassle-free experience while shopping with us.

Customer Service Use-Case Diagram



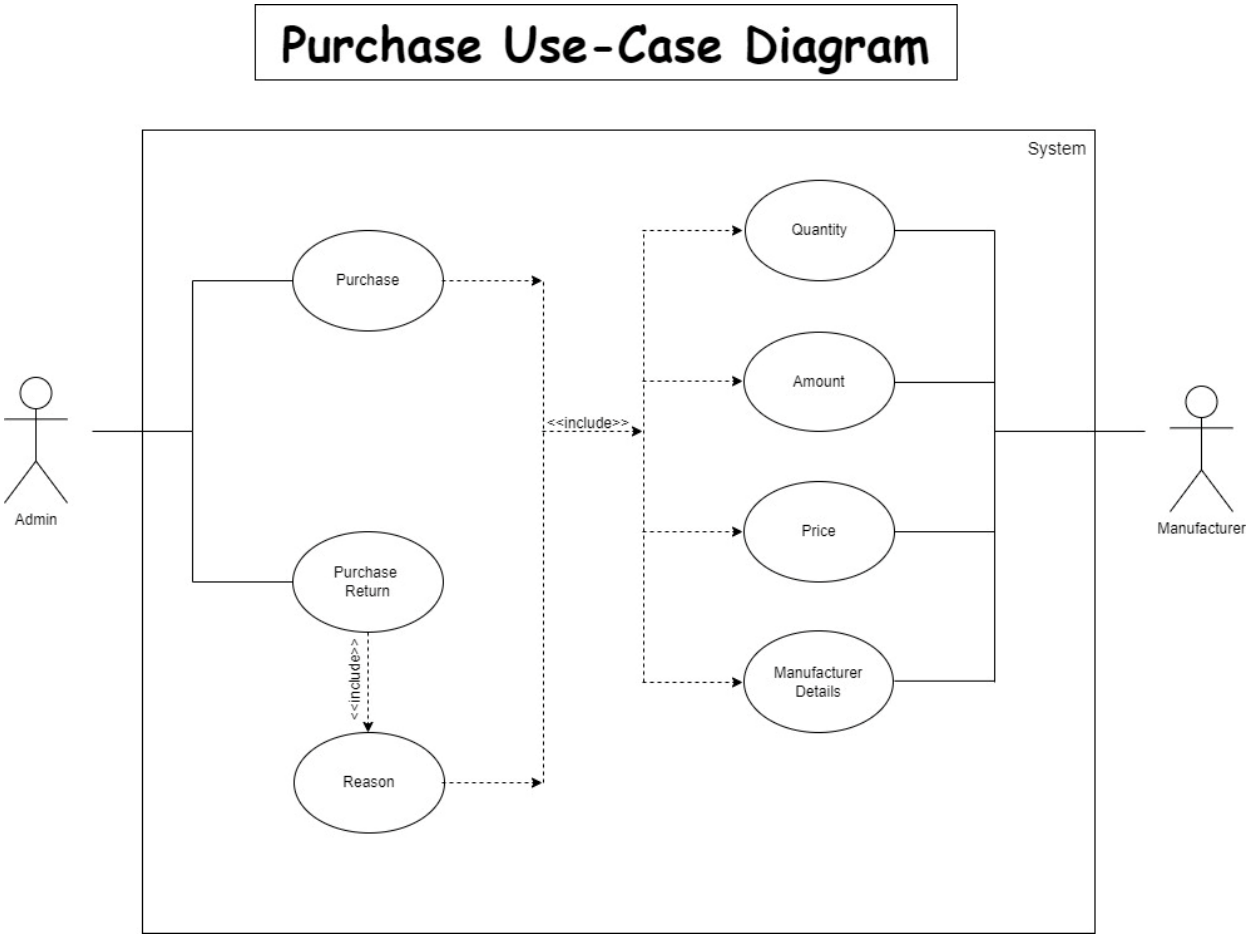
Module 05: Feedback

We strive to provide the best possible experience for our customers. To achieve this, we welcome their feedback on our products and website. By rating and sharing their suggestions for improvement, they can help us understand what they like and where we need to improve.



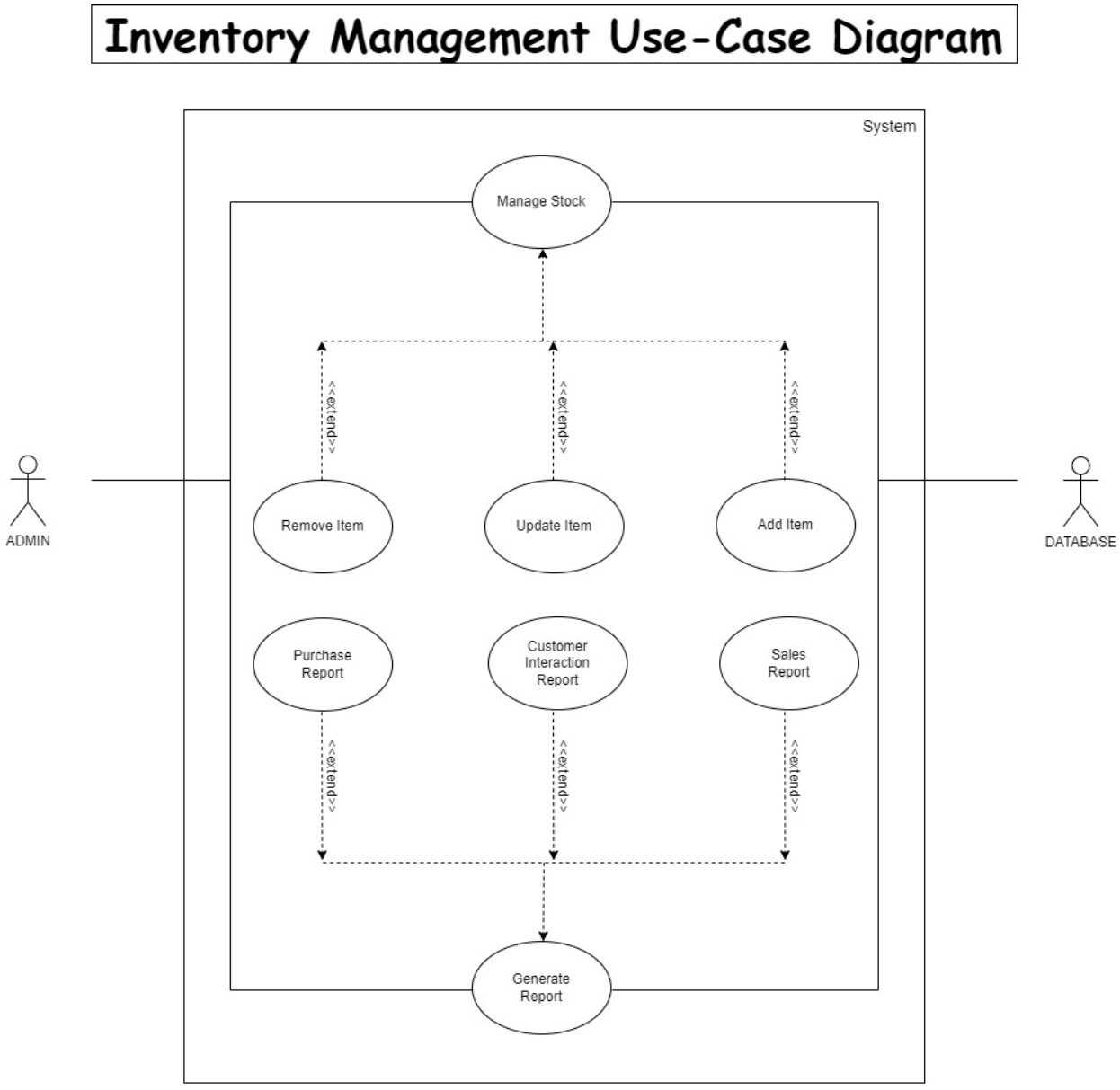
Module 06: Purchase

The entire purchasing module will be managed by the administrator, who will have full access to manage the stock acquired from the manufacturer or wholesaler. Similarly, the purchase return process will also be overseen by the administrator.



Module 07: Inventory Management

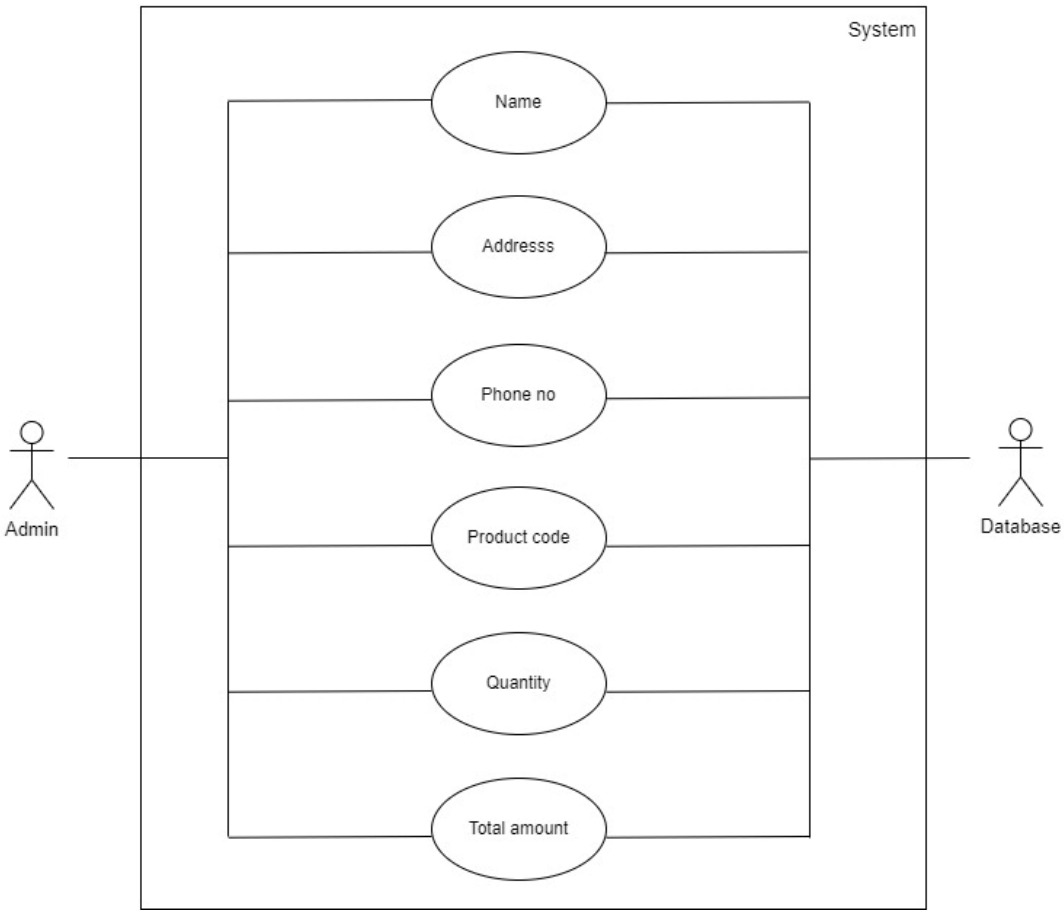
Our intuitive platform empowers admins to update, add, and delete stock with ease, ensuring that you always have a clear picture of your inventory levels. Our system also allows admin to generate detailed reports on sales and customer interactions with the website.



Module 08: Offline Billing Management

Our billing process for in-store purchases is clearly illustrated in this diagram. It shows the information that will be requested from customers, as well as how their purchase details will be updated in the database, and an invoice will be generated. With this streamlined approach, we can efficiently process transactions and ensure accurate billing for our customers.

Offline Billing Management Use-Case Diagram



4.5 Activity Diagrams

An activity diagram is a powerful modelling tool that represents the dynamic behaviour of a system. It is a type of UML (Unified Modelling Language) diagram that depicts the flow of control between different activities in a system. The main purpose of an activity diagram is to show the sequence of activities, decisions, and conditions that occur in a process, from start to finish.

The diagram consists of various shapes and symbols, which represent different elements such as activities, transitions, and decision points. Activities represent the work that needs to be done in the system, while transitions depict the flow of control from one activity to another. Decision points are used to show branching paths in the process, depending on certain conditions.

One of the key benefits of using an activity diagram is that it allows you to visualize the entire process of a system, from start to finish, including all the decision points and possible outcomes. This helps to identify any potential problems or bottlenecks in the system and makes it easier to optimize the process for maximum efficiency.

Overall, activity diagrams are a powerful modelling tool that can help to improve the understanding, design, and documentation of complex systems. By using this diagram, you can effectively communicate the behaviour of a system to stakeholders and team members, ensuring that everyone is on the same page and working towards the same goals.

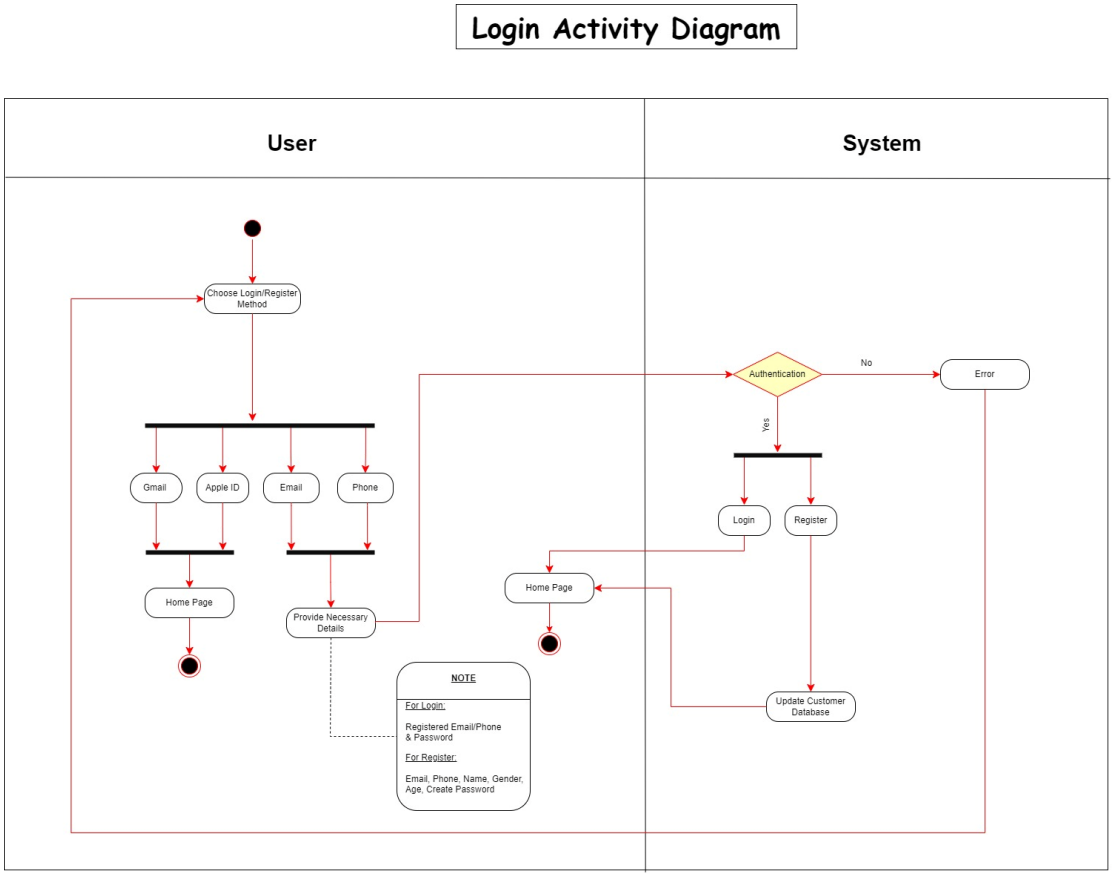
4.5.1 Activity Diagram Symbols

NAME	SYMBOL	DESCRIPTION
INITIAL STATE		A black circle is standard notation for initial state before an activity takes place. It can either stand alone or can be further elucidated using a note.
ACTION STATE		The activity symbols/ action states are the basic building blocks of an activity diagram and usually have a short description of the activity they represent.
CONTROL FLOW		Arrows represent the direction flow of the flow chart. The arrow points in the direction of progressing activities.
TRANSITION FORK		A transition fork splits one activity flow into two concurrent activities or vice versa
DECISION		A marker shaped like a diamond is the standard symbol for a decision. There are always at least two paths coming out of a decision and the condition text lets you know which options are mutually exclusive.
FINAL STATE		The black circle that looks like a selected radio button is the symbol for end state of an activity.
SWIM LANES		The lanes are boundaries are drawn and the activities of a particular category are drawn in the same lane as that of the category.

Module 01: Login/Register

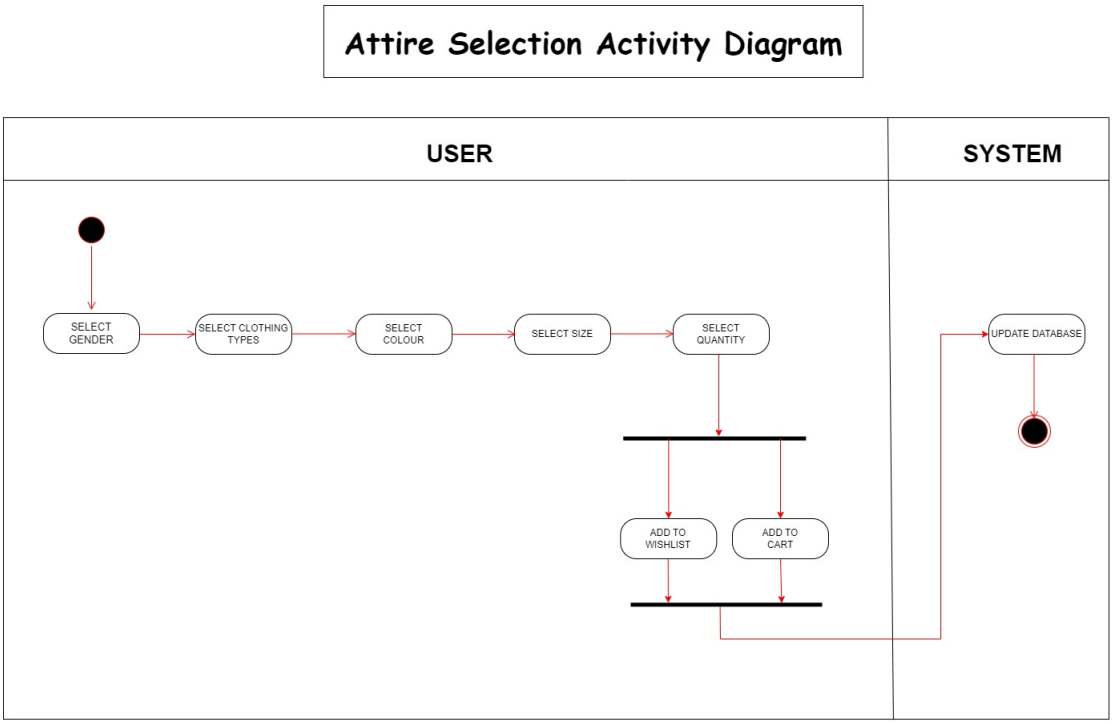
In this diagram, you will learn about the login and registration process in detail. The process begins with the user selecting their preferred method to sign in or sign up. Once the user has chosen their preferred method, they will be prompted to enter the necessary credentials to complete the process.

If the user already has an account, and their details match the information in the database, the login process will be successful. However, if the user's information does not match or is incorrect, they will be prompted to re-enter their details, or they can choose to reset their password if they have forgotten it.



Module 02: Attire Selection

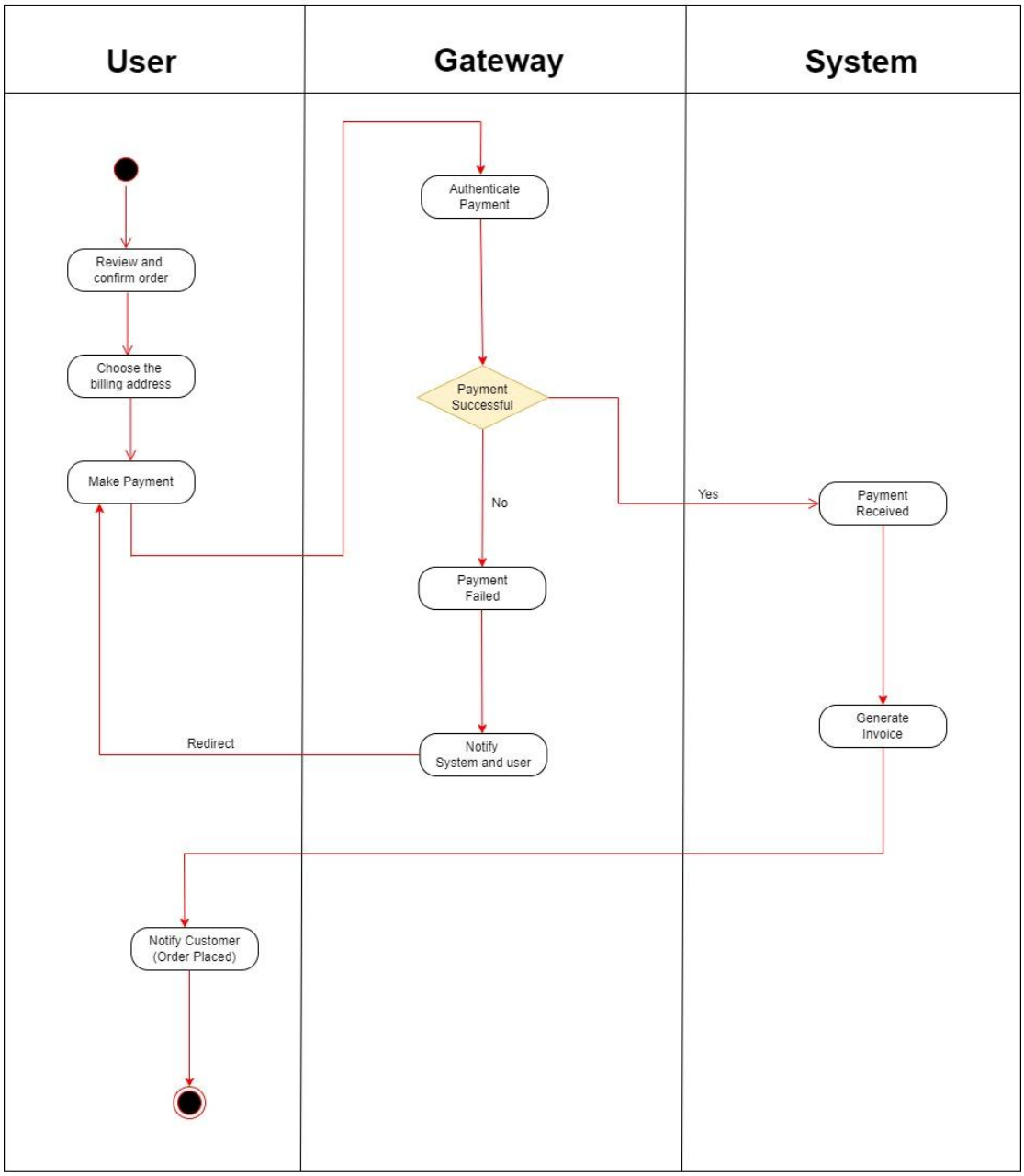
In this diagram, we will guide you through the attire selection process in a user-friendly way. You can begin by selecting your gender and preferred outfit. Next, you can choose your size and explore a range of colour options to find your perfect fit. You can also select the quantity of items you need. Based on your preferences, you can add the selected product to your cart or wish-list, making the shopping experience tailored to your needs. With our intuitive interface, you can easily navigate through the options and select the best fit for you.



Module 03: Payment

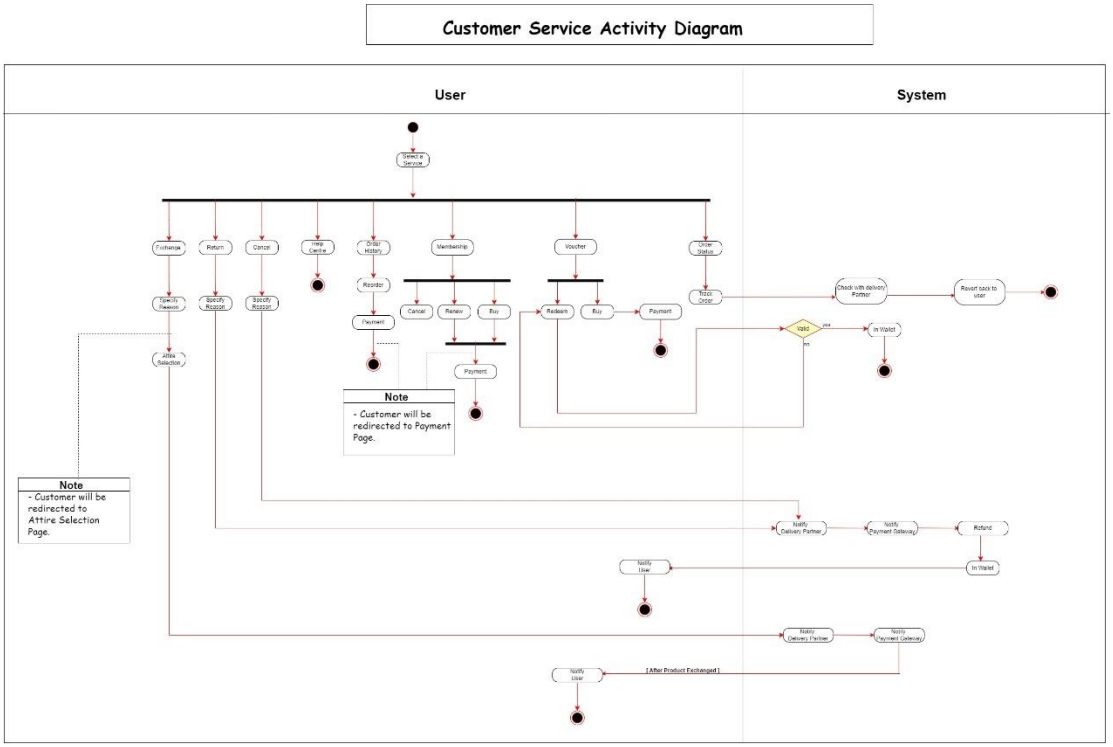
In this diagram, we will guide you through the cart management process in detail. Once you have added products to your cart, you can review and edit your order before proceeding to the payment stage. Our payment gateway offers various options such as UPI, credit card, debit card, and cash on delivery to make the checkout process seamless. After selecting your preferred mode of payment, you will be prompted to enter the required details such as card number, CVV, or UPI pin. Our secure system will verify your credentials and if the payment is successful, you will receive a notification and an invoice for your purchase. However, if the payment is not successful, you will be redirected to the payment gateway again to try a different payment option or correct any errors in your details.

Payment Activity Diagram



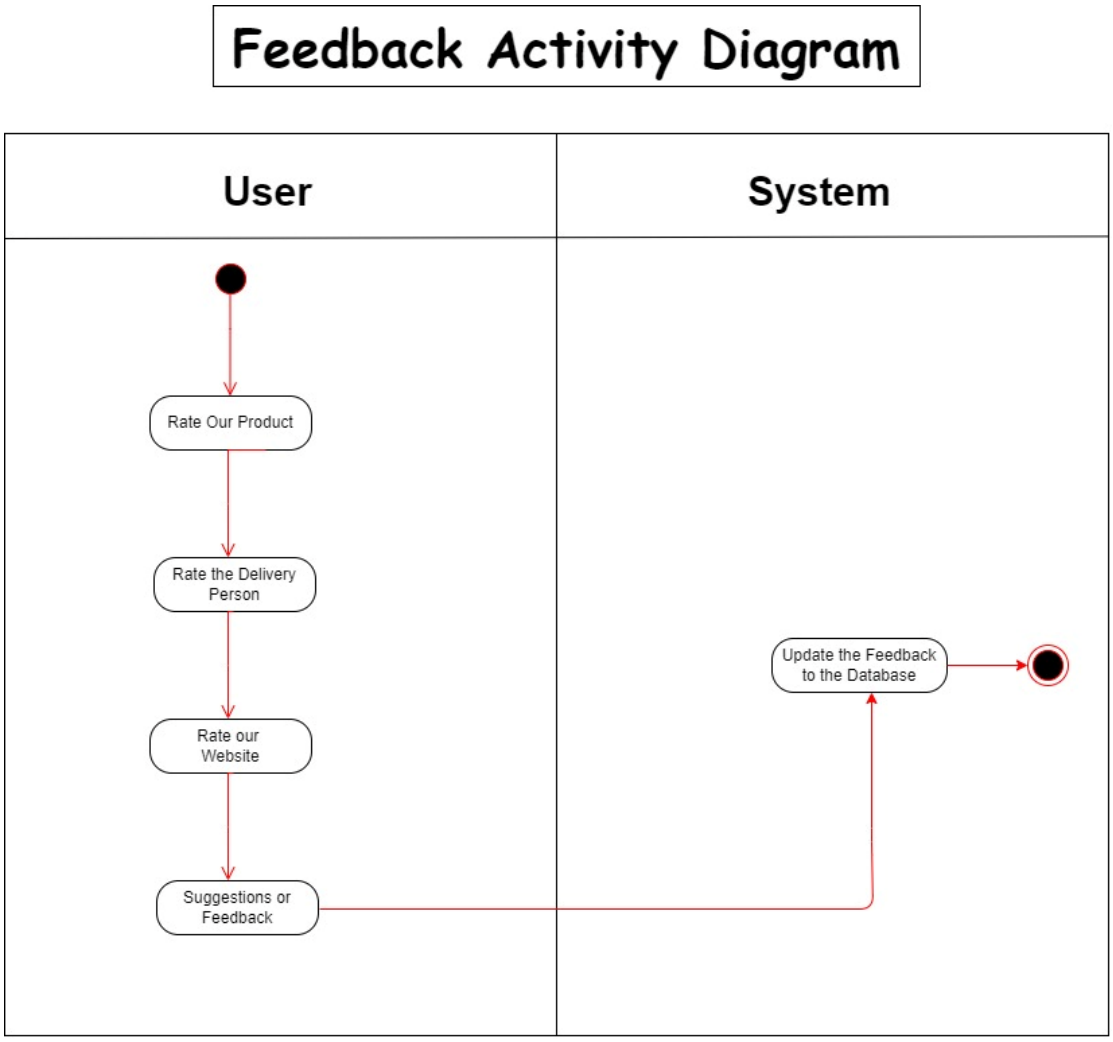
Module 04: Customer Service

This activity diagram illustrates how our customer service system responds to customers who request specific services. The system collects data from databases and other resources to facilitate a seamless service experience for customers. It also updates the database to reflect any changes made, such as cancellations or exchanges, and manages related services like membership and gift vouchers.



Module 05: Feedback

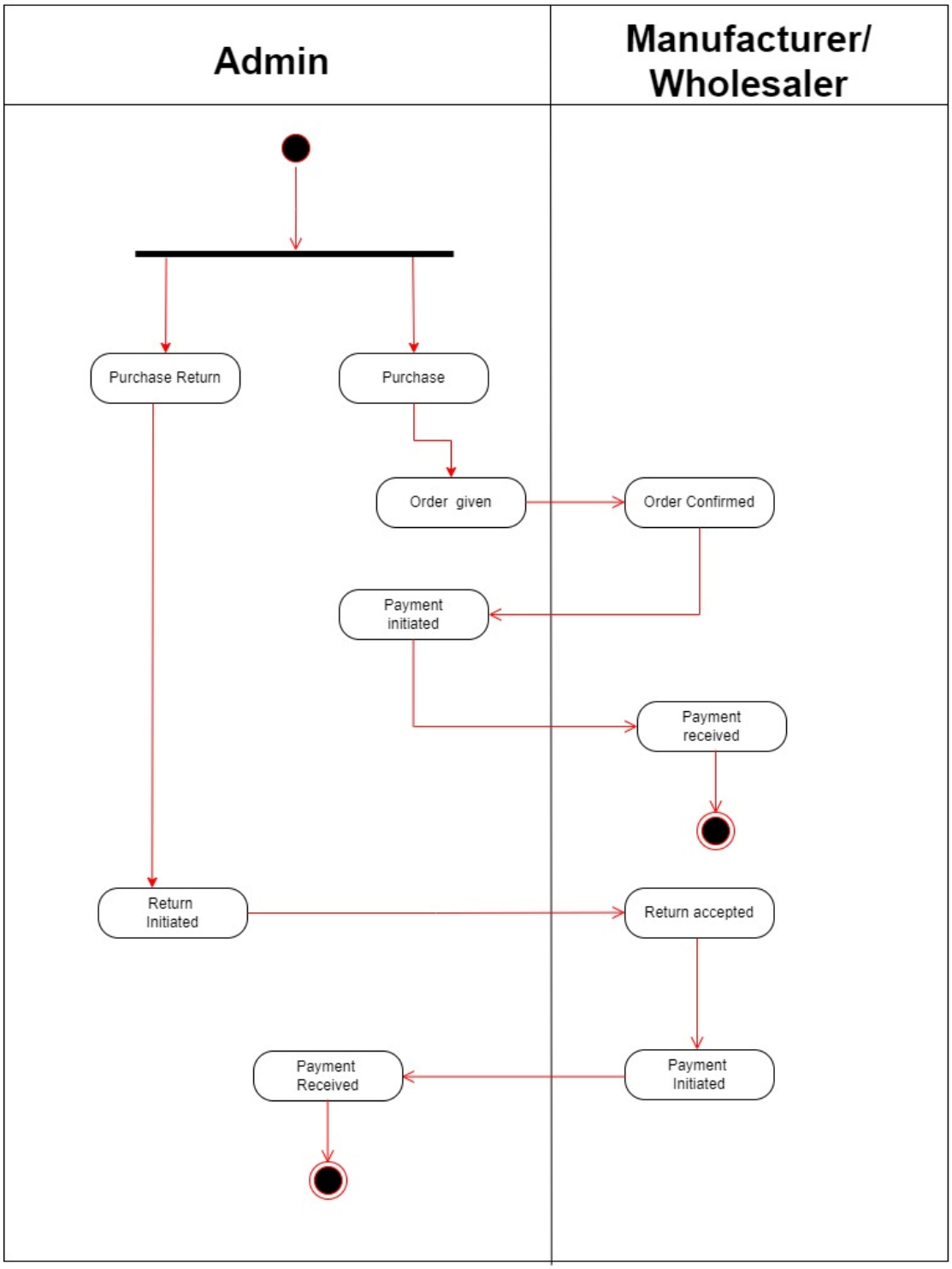
Discover how our customer feedback section can help improve your product and delivery service. Customers can rate the product, delivery person, and website experience using easy-to-use feedback forms. Our team will analyse the feedback and use it to make improvements, and all details will be stored in our database. Check out the diagram below to see how the feedback section works.



Module 06: Purchase

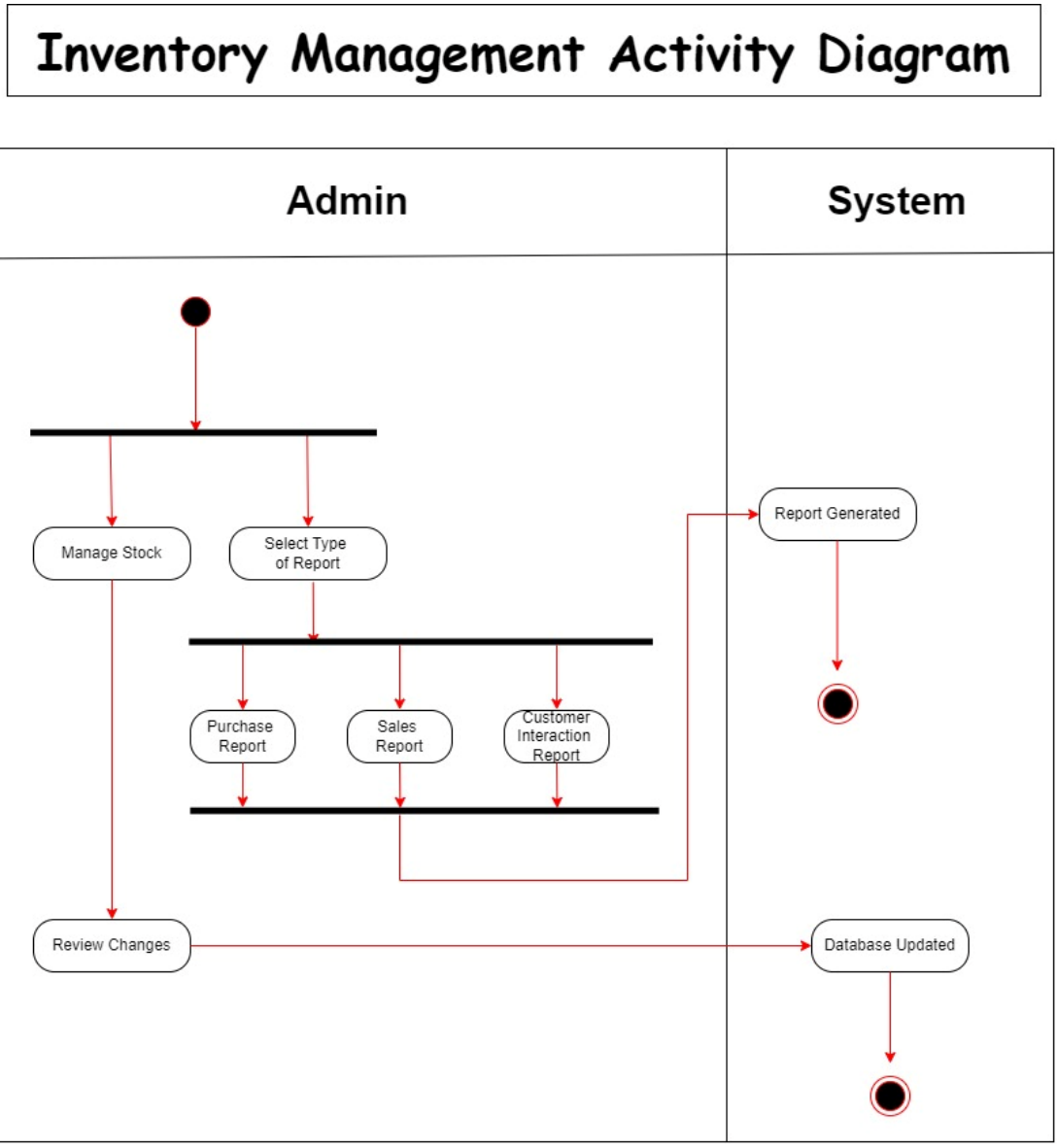
This diagram provides a comprehensive understanding of the purchase and purchase return processes from the admin's perspective. It covers everything from the ordering of goods and payment processing to the receipt of orders. The purchase return process, including returning goods to the manufacturer with a specific reason and receiving payment, is also explained in detail. All these critical details are meticulously updated in the database to ensure accuracy and transparency in the purchasing process.

Purchase Activity Diagram



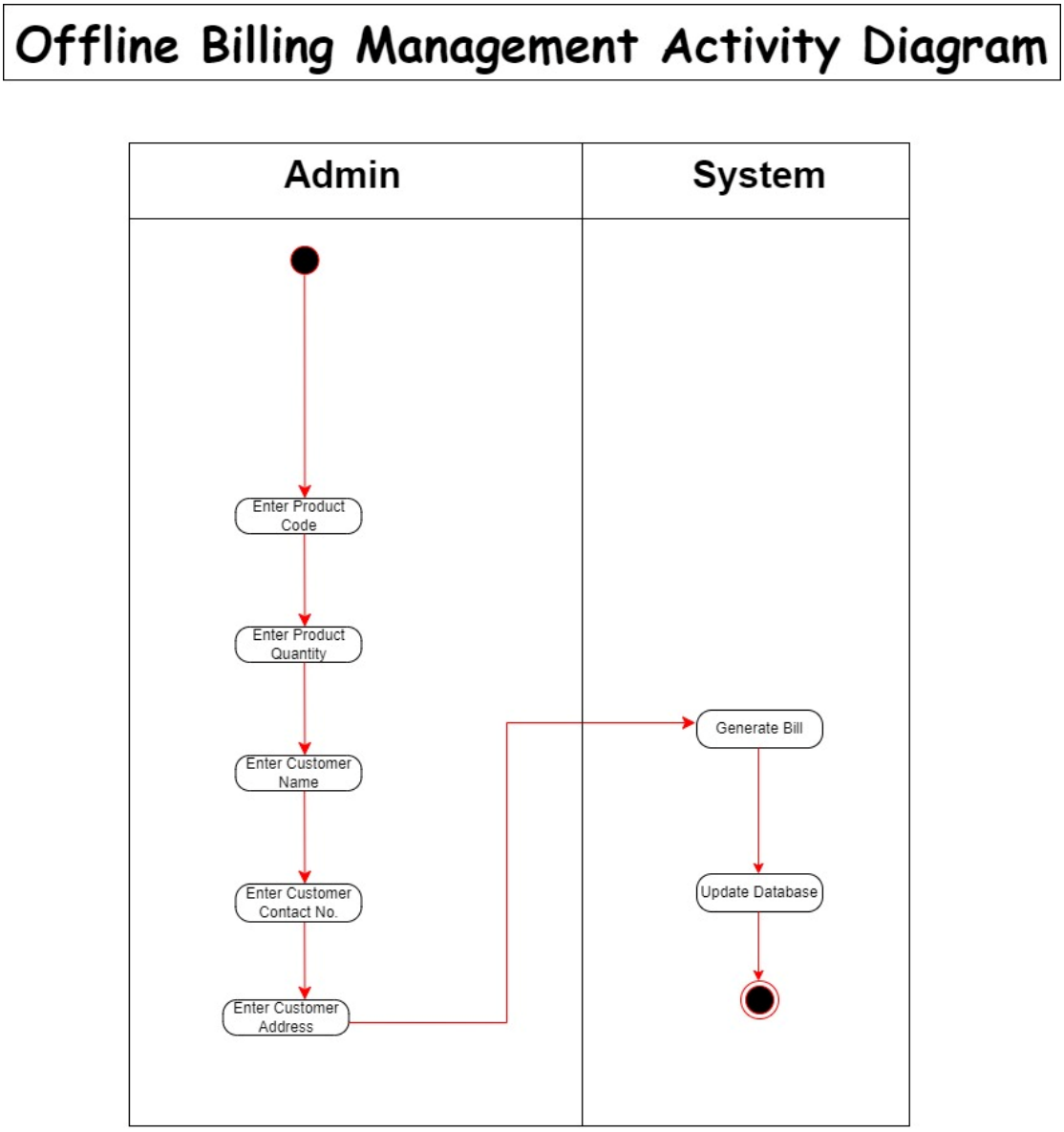
Module 07: Inventory Management

The inventory section is a critical part of any business, and it's essential for admins to understand how it works. In this diagram, we've illustrated the key features of the inventory section from the perspective of admins. With this tool, admins can manage the stock levels of different products, and the system will automatically update the database. Additionally, admins can generate reports like sales and purchase to track the performance of the business.



Module 08: Offline Billing Management

In this diagram, we showcase the streamlined flow of our billing management system. The admin enters the product code and quantity, while the customer is asked for their name, contact details, and address during their live interaction. This information is then uploaded into the database, and an invoice is generated in real-time, ensuring that our customers receive accurate billing details.

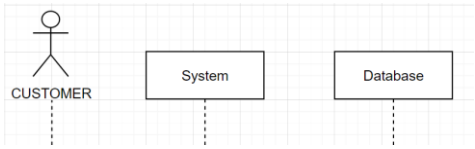
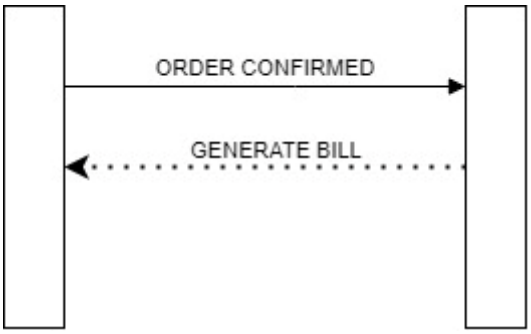
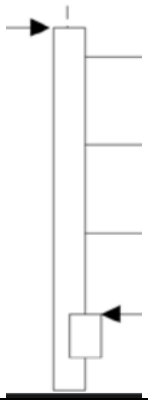


4.6 Sequence Diagrams

A sequence diagram is a powerful tool for visualizing the interactions between objects in a system. Objects are represented as lifelines, which run down the page, and interactions between them are shown as messages drawn as arrows from the source lifeline to the target lifeline. Sequence diagrams are particularly effective for depicting object communication patterns and the messages that trigger those communications.

By using a sequence diagram, you can quickly understand the flow of messages and the interactions between objects, which can be critical for debugging and system analysis. Sequence diagrams are especially useful for illustrating complex object interactions and message sequences, which can be difficult to convey through other means.

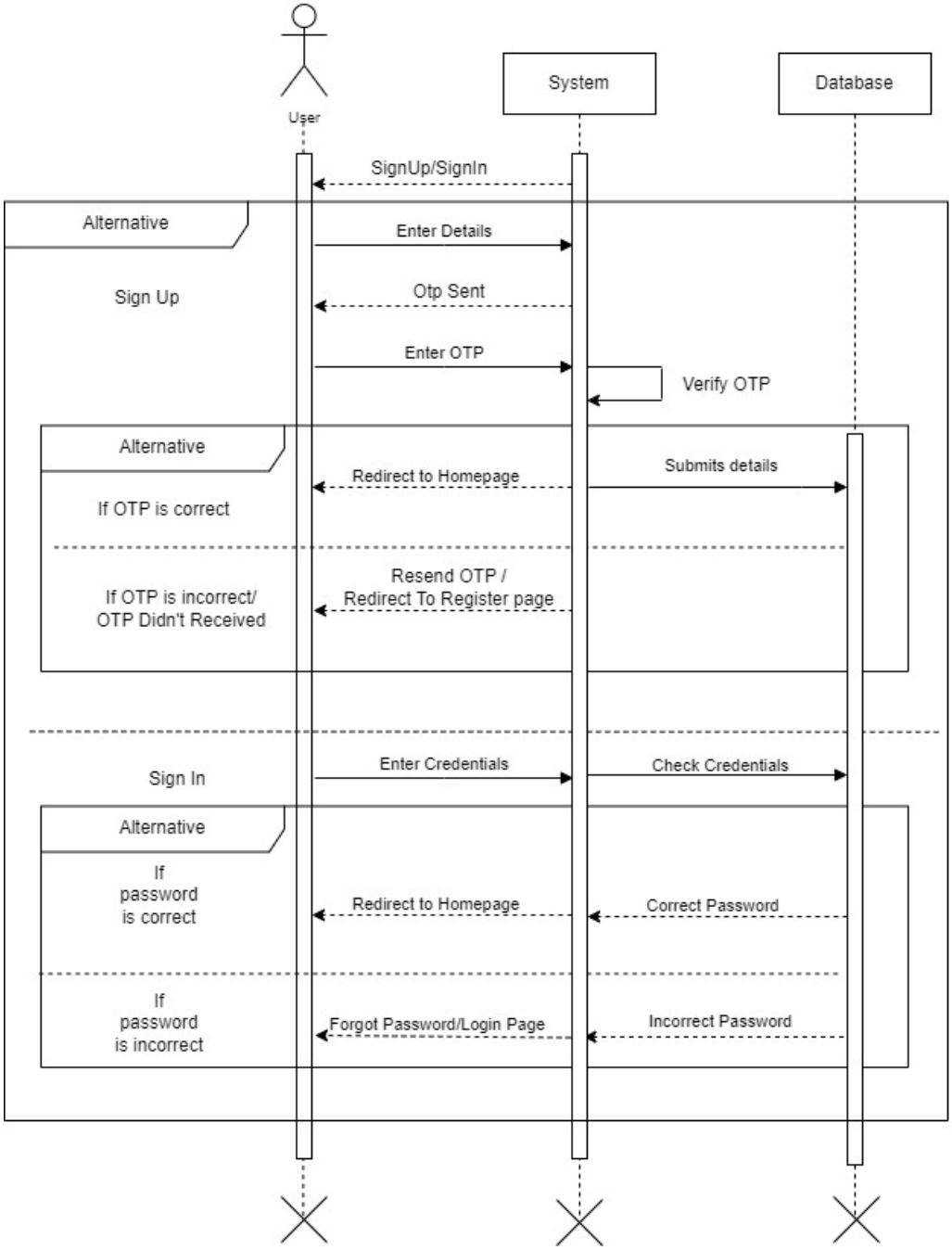
4.6.1 Sequence Diagram Symbols

NAME	SYMBOL	DESCRIPTION
TIMELINES		A Timeline represents an individual participant in a sequence diagram. A lifeline will usually have a rectangle containing its object name. If its name is "self", that indicates that the lifeline represents the classifier which owns the sequence diagram.
MESSAGES		A message represents an interaction between objects, or between an object and the environment. A message can be an event, a triggered operation, or a primitive operation. In the metamodel, a message defines a specific type of communication.
OBJECT		The sequence diagram consists of a group of objects that are represented by lifelines and the messages that they exchange over time during the interaction
FOCUS OF CONTROL		Focus of control (FOC) is used in sequence diagrams to show the period of time during which an object performs an action. FOC is rendered as a thin, rectangular object that sits on top of object lifelines

Module 01: Login/Register

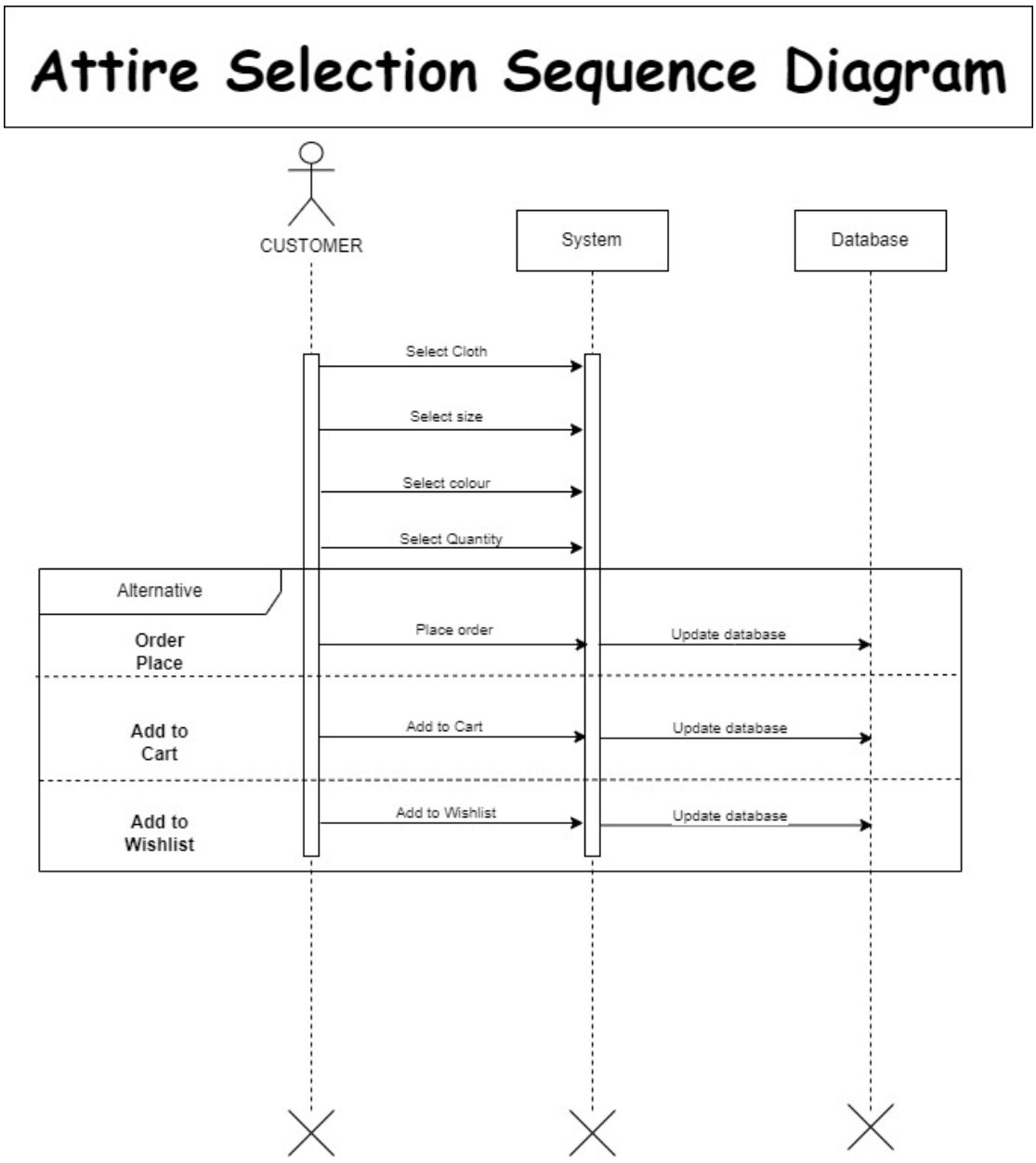
This sequence diagram illustrates the backend process of the login/registration feature, showcasing the entire journey of user details entry and storage into the database, password retrieval process, and the seamless re-login functionality. By following this sequence diagram, you will gain a clear understanding of how the login/registration process works and how it can be optimized for enhanced user experience.

Login/Register Sequence Diagram



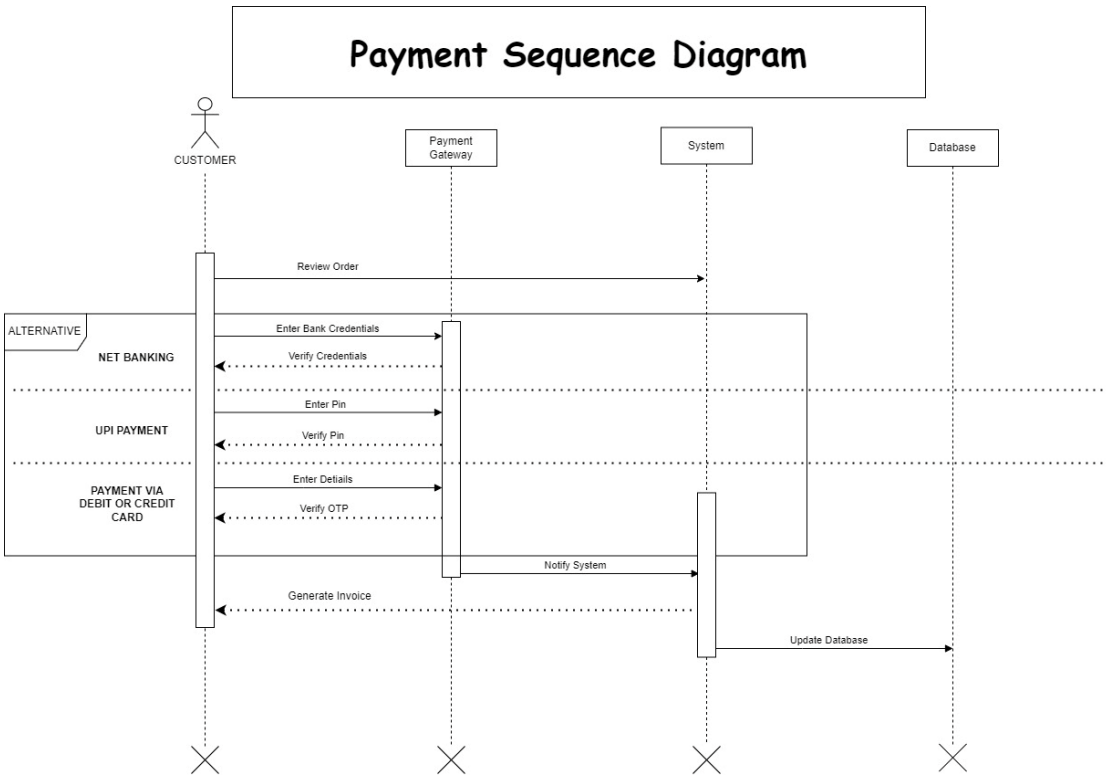
Module 02: Attire Section

This sequence diagram offers a comprehensive view of the backend process of attire selection, demonstrating how the system responds when a customer interacts with the website to select their preferred attire. It showcases how the system updates the database in real-time, regardless of whether the item is added to the wish list or cart. You will gain insights into the intricate details of how the attire selection process works on the website, and how the system can be optimized to offer a seamless customer experience.



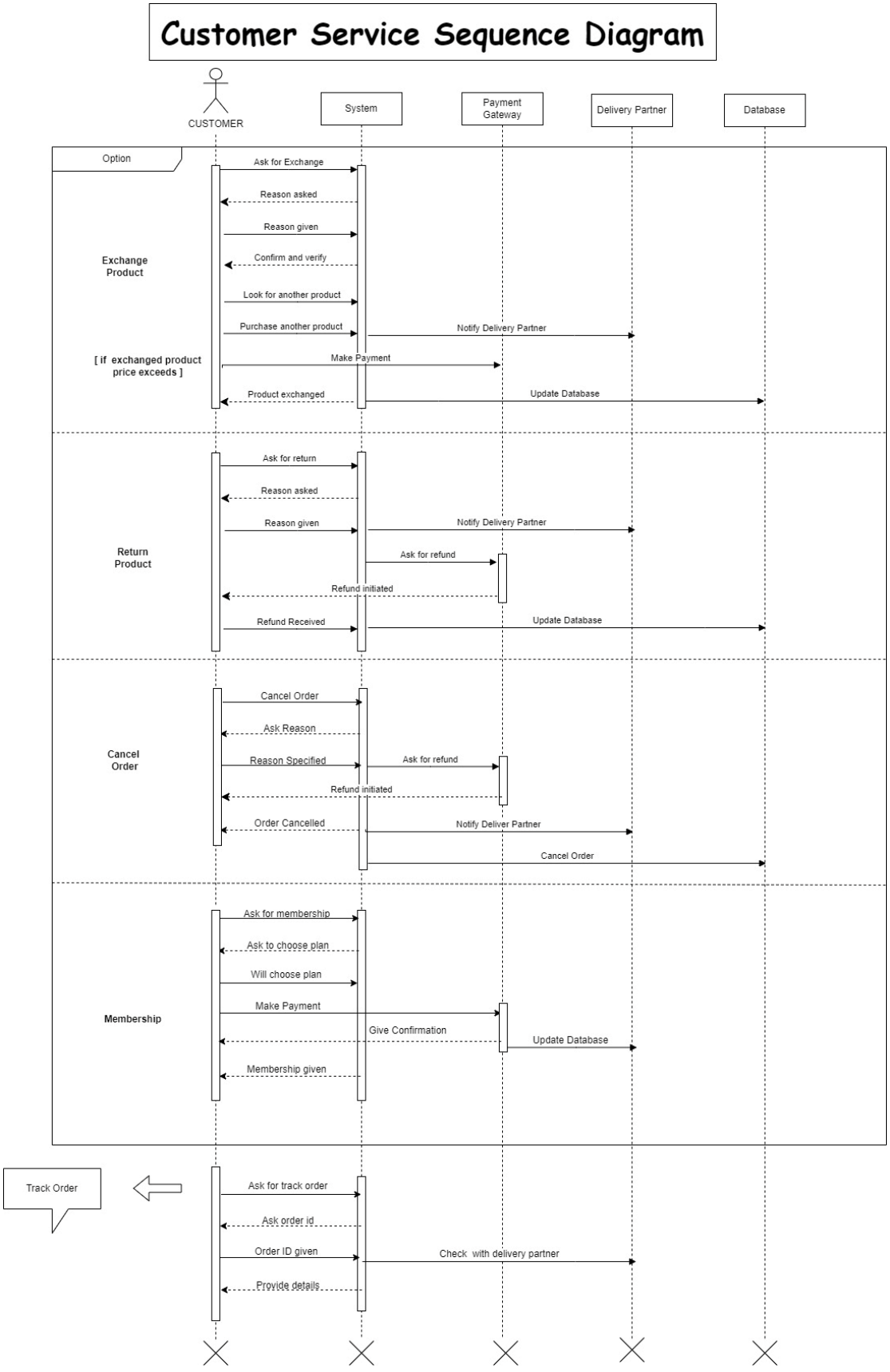
Module 03: Payment

This sequence diagram provides an in-depth understanding of the payment module's backend process, showcasing how the system maintains and updates the database during successful and unsuccessful payment transactions. Additionally, it highlights the necessary steps that the system takes to ensure that the payment is completed seamlessly. Moreover, the sequence diagram also depicts the generation of a payment receipt upon a successful transaction.



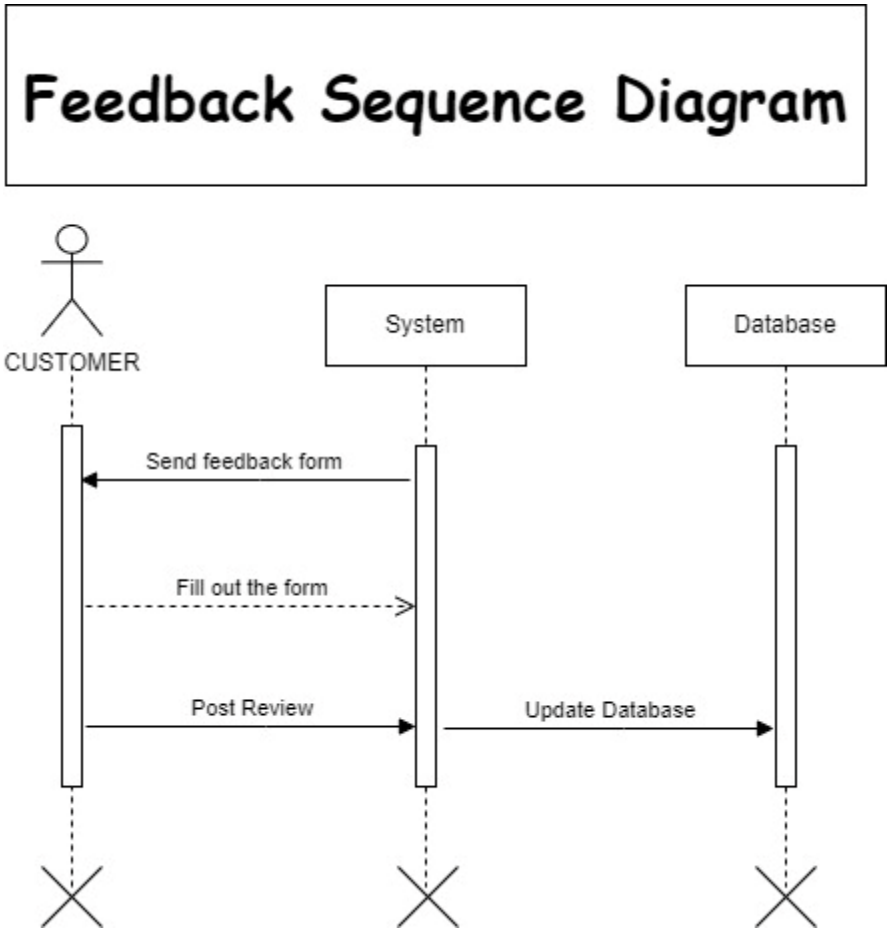
Module 04: Customer Service

This sequence diagram provides a detailed understanding of the service section's backend processing, showcasing how the system interacts with customers to fulfil their needs. It offers a comprehensive explanation of how the product exchange, return, and order cancellation process works, along with its connection to the database that enables customers to track their orders effortlessly. Furthermore, it depicts how the membership renewal and deletion process works, along with how the gift voucher money is added to the wallet. By following this sequence diagram, you will gain a clear understanding of the intricacies of the service section's backend processing and how it can be optimized to offer a seamless and hassle-free experience for customers.


Customer Service Sequence Diagram
CUSTOMER
System
Payment Gateway
Delivery Partner
Database
Option
Ask for Exchange
Reason asked
Reason given
Exchange Product
Confirm and verify
Look for another product
Purchase another product
Notify Delivery Partner
[if exchanged product price exceeds]
Make Payment
Product exchanged
Update Database
Ask for return
Reason asked
Reason given
Notify Delivery Partner
Return Product
Ask for refund
Refund initiated
Refund Received
Update Database
Cancel Order
Ask Reason
Reason Specified
Ask for refund
Refund initiated
Order Cancelled
Notify Deliver Partner
Cancel Order
Ask for membership
Ask to choose plan
Will choose plan
Membership
Make Payment
Give Confirmation
Update Database
Membership given
Track Order
Ask for track order
Ask order id
Order ID given
Check with delivery partner
Provide details

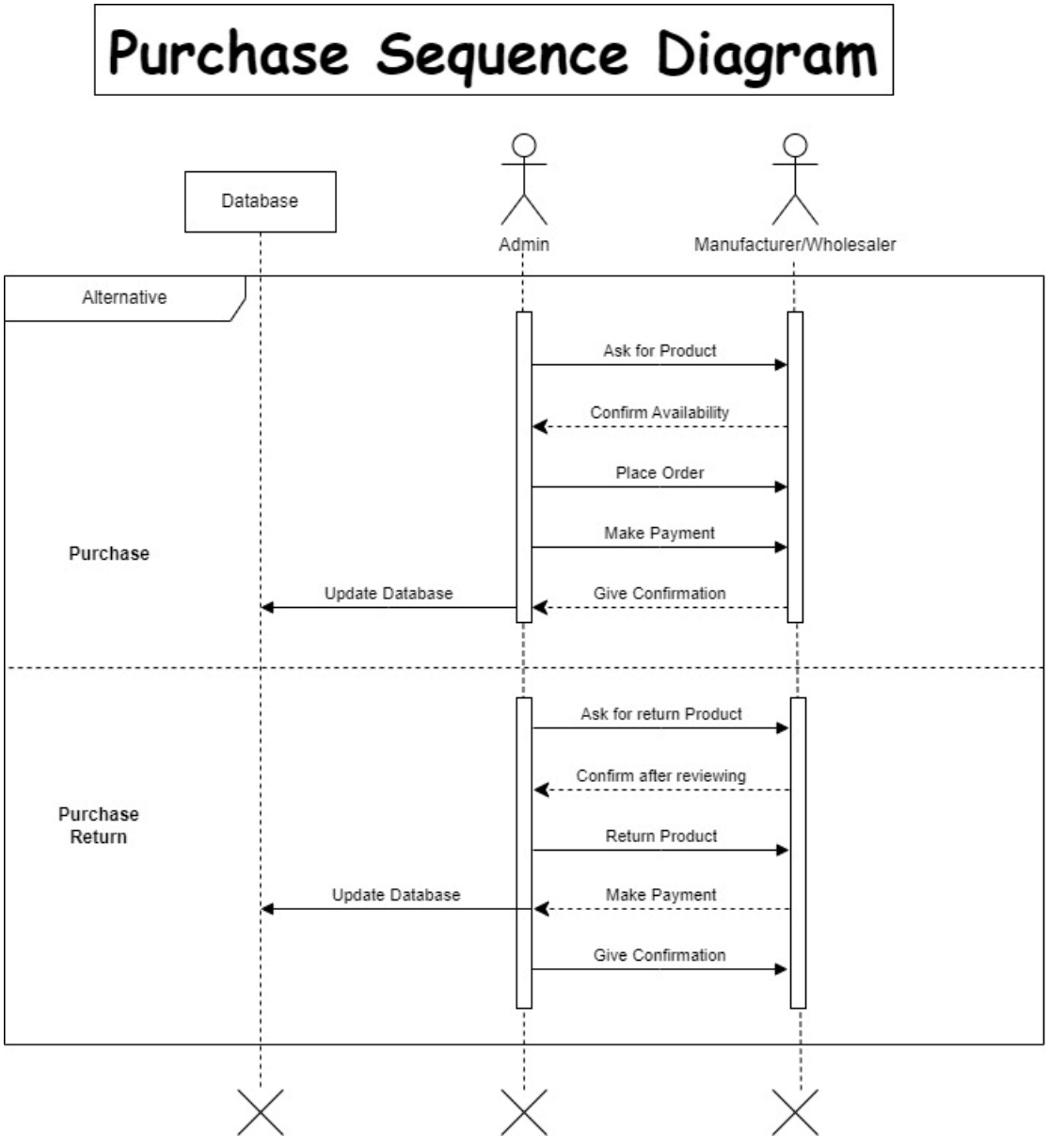
Module 05: Feedback

This feedback sequence diagram provides a comprehensive understanding of the backend process of collecting and storing customer feedback, enabling the generation of reports that can help improve the website's overall performance and customer satisfaction. It shows how the system collects customer feedback and stores it in the database, where it can be analysed to generate reports that help identify areas for improvement.



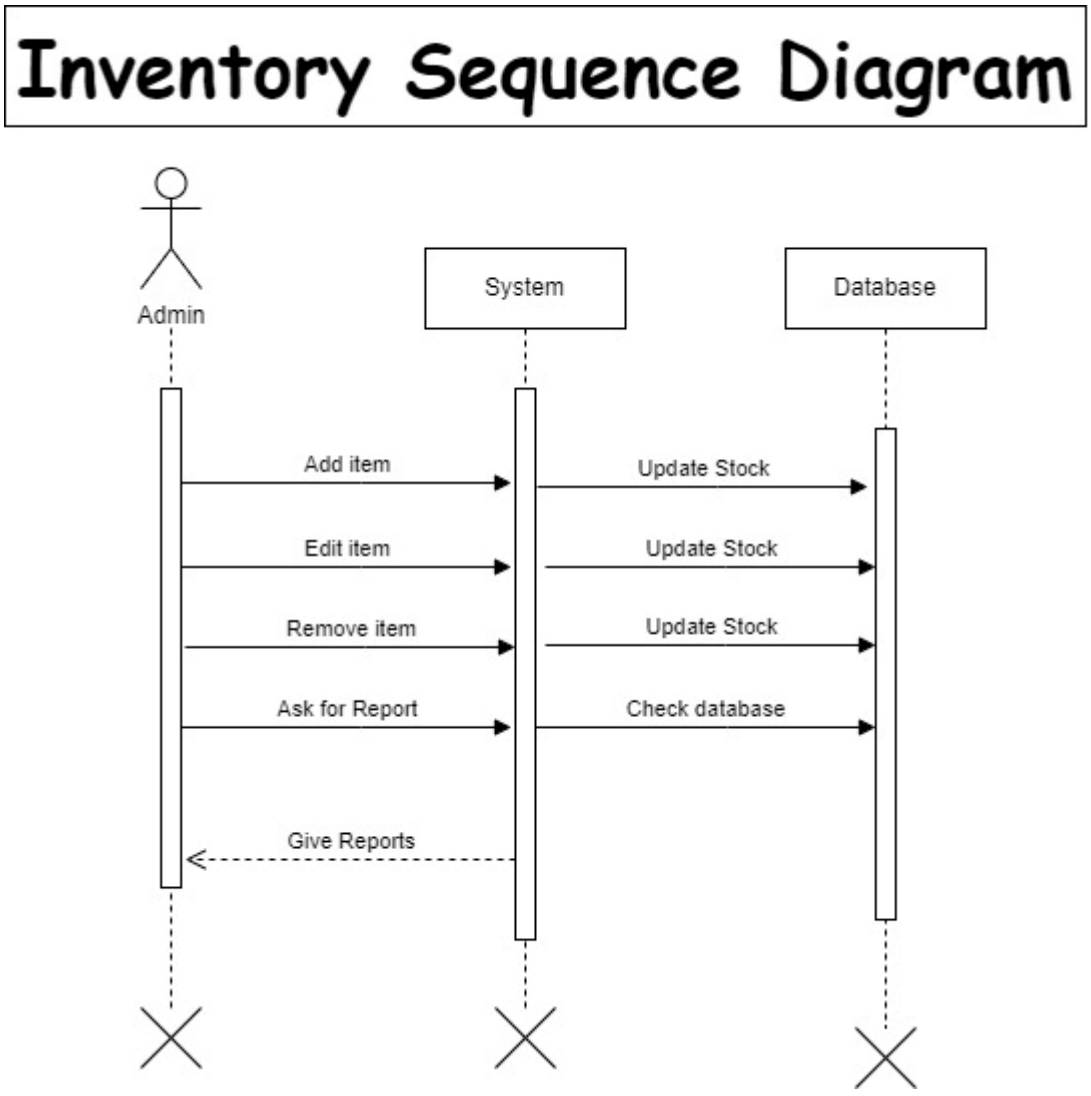
Module 06: Purchase

This purchase sequence diagram illustrates how our system manages the entire purchase process, from sourcing products from manufacturers or wholesalers to handling returns. The system updates the database in real-time to keep the admin informed and facilitate seamless processing. This ensures our system is efficient and appropriate for managing purchases.



Module 07: Inventory Management

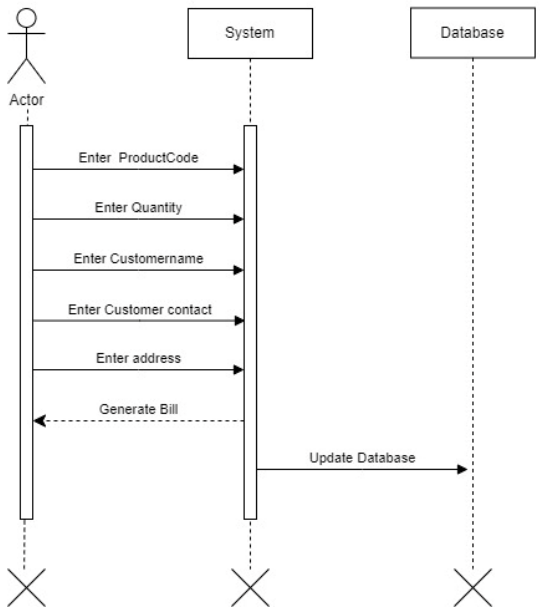
This inventory sequence diagram demonstrates how our system processes inventory data provided by the admin and updates the database accordingly. The system also enables the admin to generate reports based on the inventory data in the database. This ensures that our system facilitates accurate inventory management and reporting for the admin.



Module 08: Offline Billing Management

Our billing module's backend process is clearly illustrated in this diagram. It highlights the interaction between the actor, system, and database, showcasing how the billing module seamlessly connects to the system and updates the database in real-time. This automated process eliminates the need for manual updates, making it easier for store owners to manage transactions and keep track of inventory.

Offline Billing Management Sequence Diagram



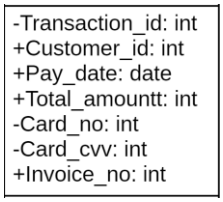
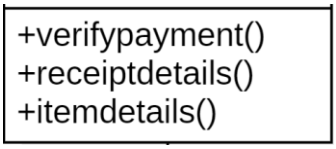
4.7 Class Diagrams

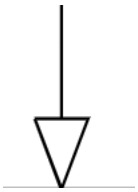
A class diagram is a powerful tool for visualizing the structure of an object-oriented system. It's a type of static structure diagram that illustrates the system's classes, their attributes, operations (or methods), and the relationships between objects.

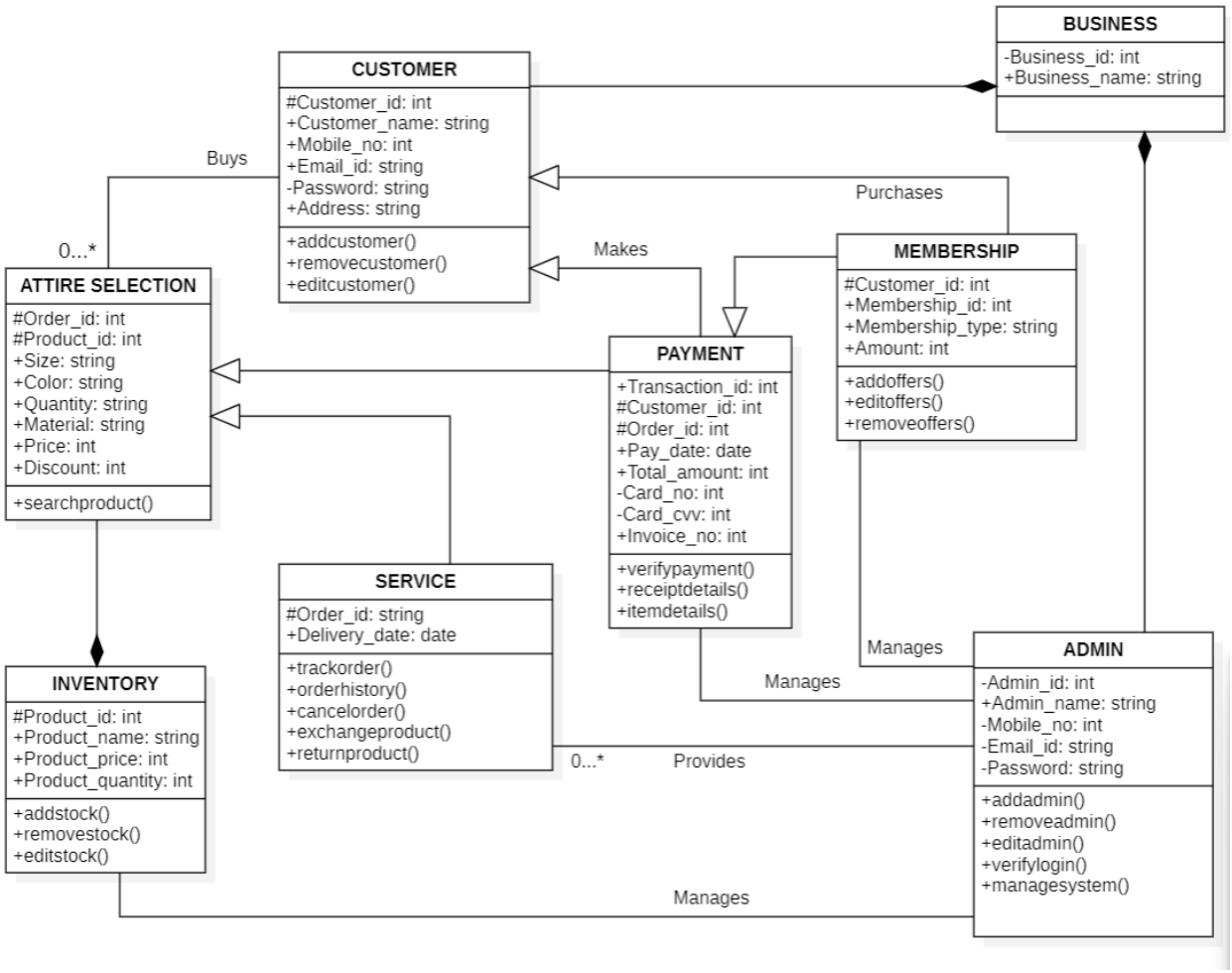
Class diagrams use a graphical notation to represent the structure of a system, making it easier to understand and communicate complex systems. By using class diagrams, you can quickly see the relationships between classes and objects, identify any issues or gaps in the design, and make informed decisions about how to structure your system.

In addition to being a great way to construct and visualize object-oriented systems, class diagrams also provide a foundation for other types of UML diagrams, such as sequence diagrams, use case diagrams, and activity diagrams. By creating a class diagram, you can ensure that all other UML diagrams are consistent and accurately represent your system.

4.7.1 Class Diagram Symbols

Name	Symbol	Description
Class Name		Class names represent an abstraction of entities with common characteristics.
Attributes		Attributes describe the structure and value of an instance of a class.
Operations		Operations refer to the methods of a class.
Association		Associations are indicated by a line between the classes, with an optional arrowhead indicating the direction of the relationship.
Aggregation		Aggregation represents a "whole-part" relationship between classes, with a diamond shape on the containing class end of the association line.
Composition		Composition is a type of aggregation where the contained class is a part of the container and cannot exist without it, and is represented by a filled diamond shape on the containing class end of the association line.

Generalization		**Generalization is a relationship between classes where a more general class (the superclass) is defined as a parent of one or more specific classes (the subclasses), and is represented by a solid line with a hollow arrowhead pointing from the subclass to the superclass.**
Public	+	**Public is a visibility modifier that can be applied to class attributes, methods, and other model elements, indicating that they can be accessed from any other class or package within the system.**
Protected	#	**Protected is a visibility modifier that can be applied to class attributes and methods, indicating that they can be accessed from within the class, its subclasses, and other classes within the same package.**
Private	-	**Private is a visibility modifier that can be applied to class attributes and methods, indicating that they can only be accessed from within the class itself and not by any other classes or packages within the system.**


BUSINESS
-Business_id: int
+Business_name: string
CUSTOMER
#Customer_id: int
+Customer_name: string
+Mobile_no: int
+Email_id: string
-Password: string
+Address: string
+addcustomer()
+removecustomer()
+editcustomer()
Buys
0...*
Purchases
Makes
MEMBERSHIP
#Customer_id: int
+Membership_id: int
+Membership_type: string
+Amount: int
+addoffers()
+editoffers()
+removeoffers()
ATTIRE SELECTION
#Order_id: int
#Product_id: int
+Size: string
+Color: string
+Quantity: string
+Material: string
+Price: int
+Discount: int
+searchproduct()
PAYMENT
+Transaction_id: int
#Customer_id: int
#Order_id: int
+Pay_date: date
+Total_amount: int
-Card_no: int
-Card_cvv: int
+Invoice_no: int
+verifypayment()
+receiptdetails()
+itemdetails()
SERVICE
#Order_id: string
+Delivery_date: date
+trackorder()
+orderhistory()
+cancelorder()
+exchangeproduct()
+returnproduct()
Manages
Manages
ADMIN
-Admin_id: int
+Admin_name: string
-Mobile_no: int
-Email_id: string
-Password: string
+addadmin()
+removeadmin()
+editadmin()
+verifylogin()
+managesystem()
INVENTORY
#Product_id: int
+Product_name: string
+Product_price: int
+Product_quantity: int
+addstock()
+removestock()
+editstock()
0...*
Provides
Manages

4.8 State Diagrams

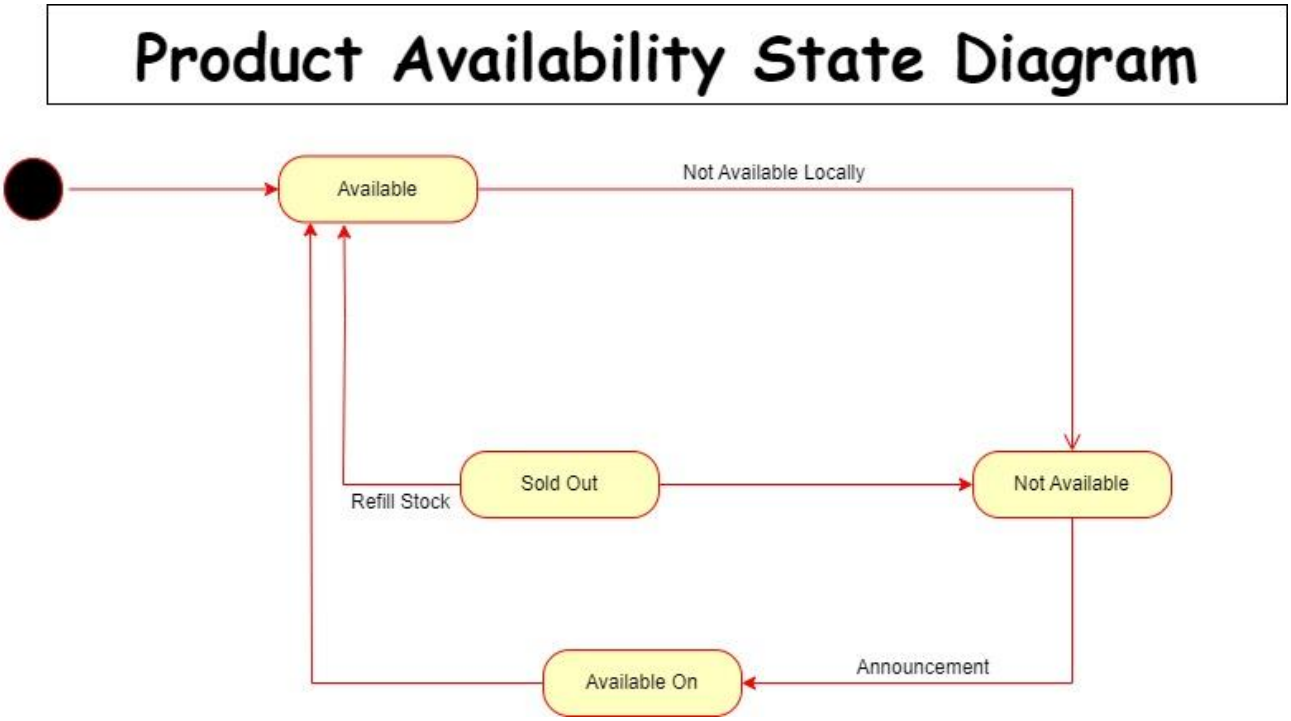
A state diagram is an essential tool in the Unified Modelling Language (UML) that provides a visual representation of the behaviour of a system. By presenting a sequence of states, this diagram demonstrates how an object or system responds to different events and transitions between various states. This diagram enables you to understand how an object behaves in response to external or internal changes and how it moves from one state to another. By using state chart diagrams, you can easily identify the possible states of an object or system and analyse the transitions that occur between them. Ultimately, this helps you gain a deeper understanding of how the system works and make informed decisions to improve its overall performance.

4.9.1 State Diagram Symbols

Name	Symbol	Description
START POINT		It indicates the start of state chart diagram.
STATES		The specific conditions in which an object or system can exist at a given point in time.
ACTIONS		The activity or function that happens during a transition from one state to another.
END POINT		It indicates the end of state chart diagram.

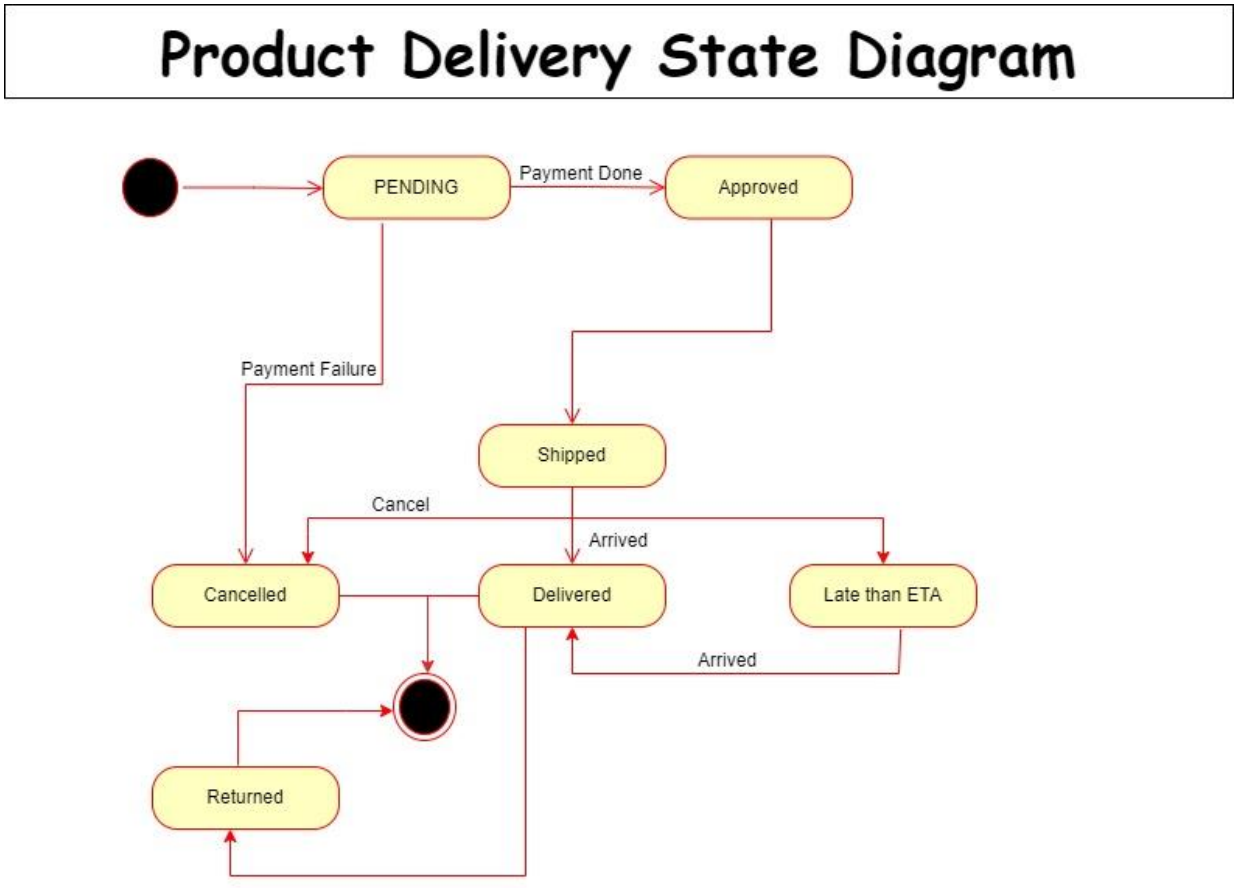
Module 01: Product Availability

This state diagram illustrates how our system checks for product availability and processes customer requests. It provides a clear overview of the steps involved in the backend process and how the system responds to customer requests based on product availability. This ensures that our system provides accurate and efficient product availability information to customers.



Module 02: Product Delivery

This state diagram demonstrates how our system manages the delivery process after successful payment completion. It tracks order status, including shipping, delivery, and estimated time of arrival. The system also handles cancellations and returns, including tracking whether we have received returned products. This ensures that our system provides accurate and efficient delivery information to customers and enables us to manage cancellations and returns effectively.



CONCLUSION

In conclusion, the apparel management system is an advanced e-commerce platform that is specifically designed to help small shop owners manage their apparel inventory and sales more efficiently. By providing a customized website to the shop owners, the project aims to provide customers with a seamless shopping experience, while also giving the admins complete control over inventory management, purchase and return management, and sales reports.

The website has been designed to be user-friendly, with easy navigation, a simple checkout process, and a range of payment options. Customers can log in to the website, browse through the available products, add items to their cart, and make a payment securely using various payment gateways. They can also view their order history and track the status of their current orders, and avail after-sales service.

On the other hand, admins have complete control over the backend of the website, where they can manage the inventory, add or remove products, manage purchases and returns, and view sales reports. The website provides real-time inventory management, allowing the admins to track the availability of products and update the inventory accordingly. The purchase and return management system enables admins to manage the entire purchase and return process, from recording the purchase to issuing refunds, if necessary.

The apparel management system is expected to be a valuable tool for small shop owners who want to expand their business and compete with larger retailers. It has the potential to revolutionize the way small shops manage their inventory and sales, making it a significant step towards a more efficient and sustainable future. By increasing sales, reducing operational costs, and improving customer satisfaction, the apparel management system is an innovative solution that could benefit both shop owners and customers alike.

Work Distribution Table

Category	Member
Use-Case Diagrams	Meet Tilokani Shlok Tilokani
Activity Diagram	Shlok Tilokani Sujal Pardasani Soniya Budhwani
Sequence Diagrams	Sujal Pardasani Soniya Budhwani
Class Diagrams	Soniya Budhwani
State Diagrams	Sujal Pardasani Soniya Budhwani
Documentation	Meet Tilokani
Formatting	Meet Tilokani
Presentation	Meet Tilokani