

Sri Lanka Institute of Information Technology



Software Engineering | SE2030

2025 | Year 2 Semester 1

Group ID: 2025-Y2-S1-MLB-B6G2-07

Web-based Musical Instrument Selling System

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B.Sc. (Hons) in Information Technology

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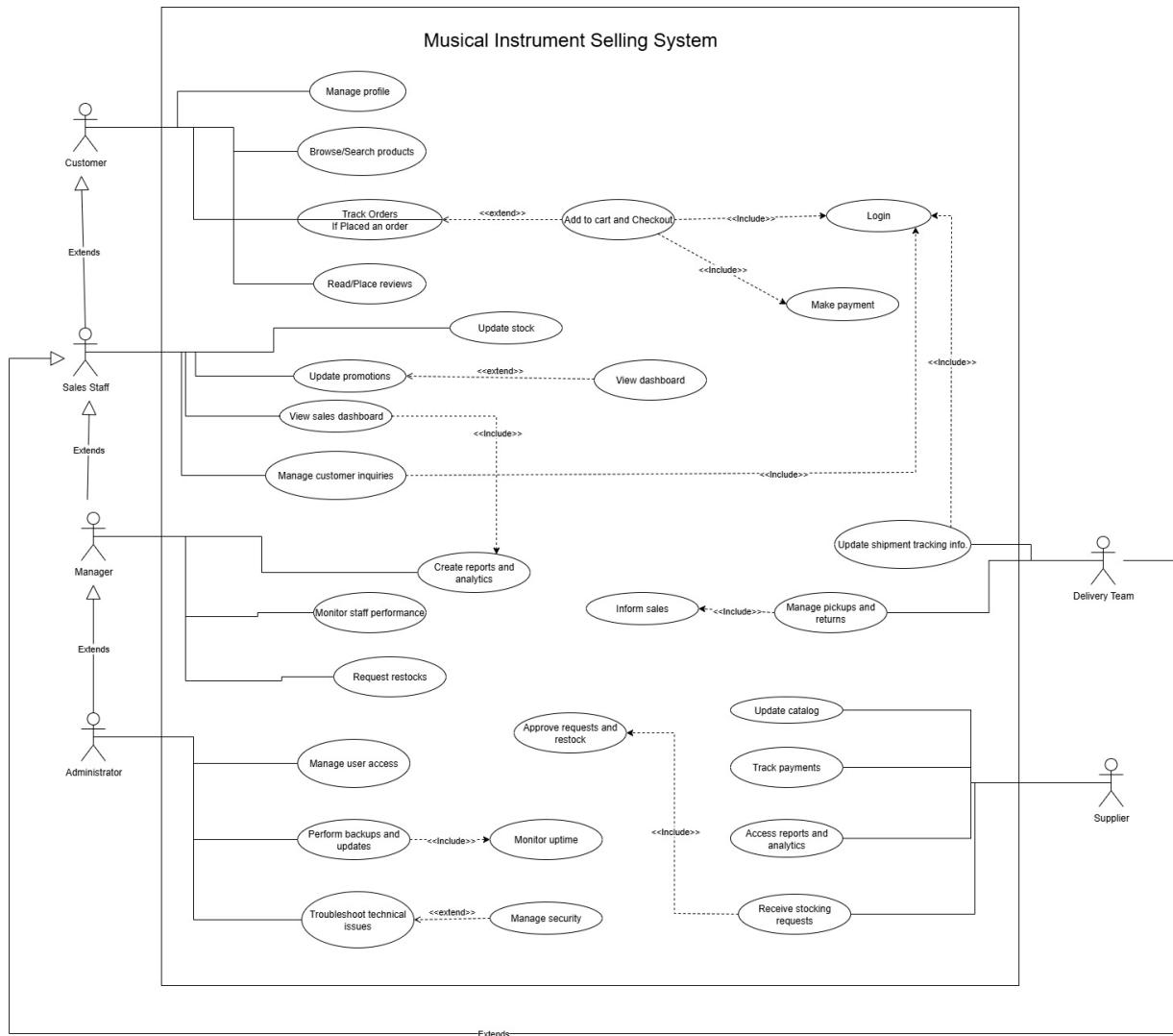
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Overview

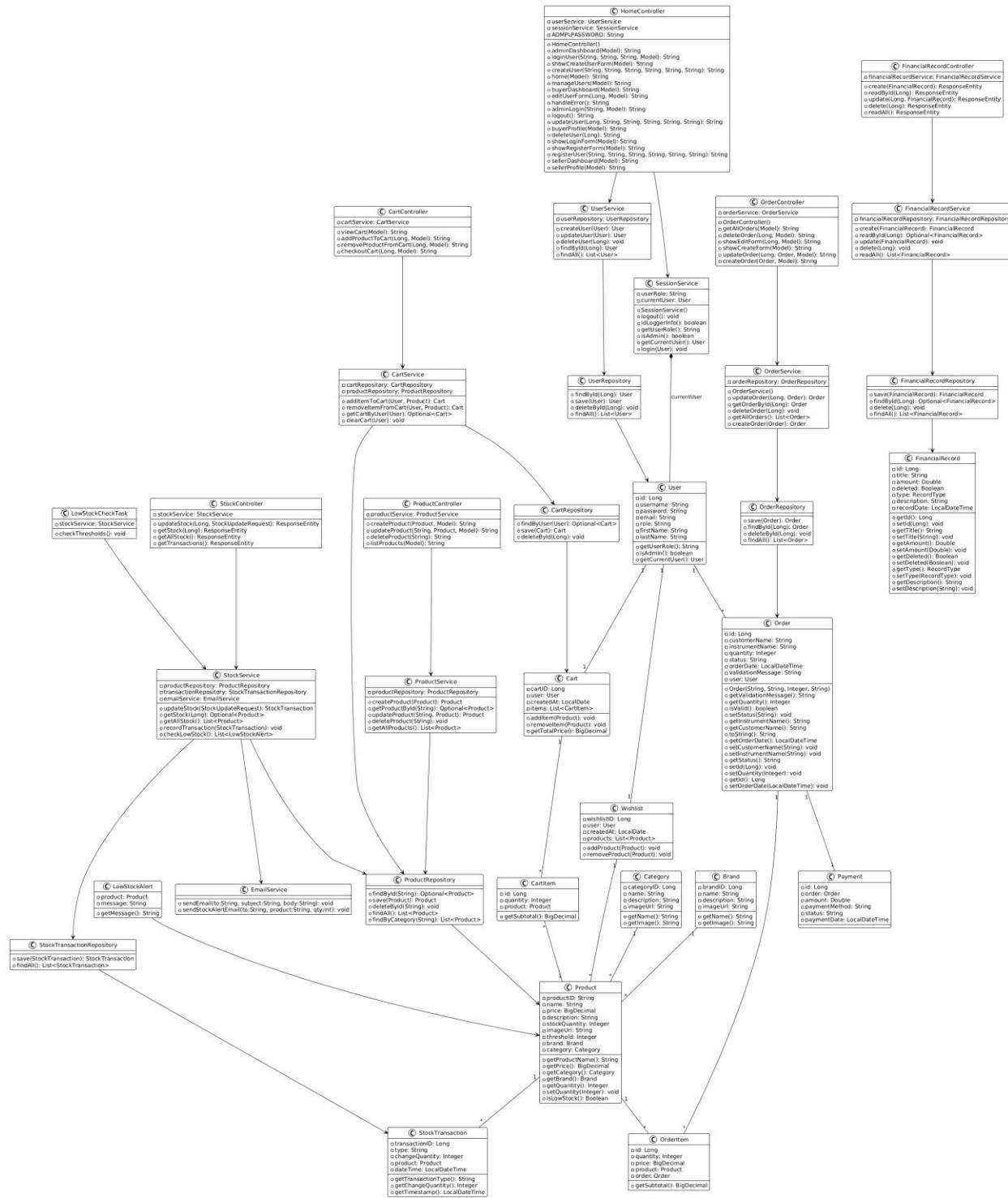
Web-Based Musical Instrument Sales System is an online shopping site that is aimed at facilitating an effortless shopping process for customers and yet possessing the entire management tool set for internal users. It caters to all levels of users ranging from customers viewing the online shop to the internal groups who control the business, such as administrators, sales personnel, and managers.

Important features support the whole sales process: an online product directory for browsing, safe online ordering and payment, and real-time tracking for customers. Behind the scenes, key inventory management and financial reporting tools make all business operations efficient and data driven.

Use Case Diagram



Class Diagram



Sprint Summaries

Sprint 1 (Foundation Sprint)

Duration: 2 weeks **Goal:** Establish core system infrastructure and basic user management

User Story	Assignee	Story Points	Status
Admin account registration	Alwis P.G.R.M.	5	Completed
User authentication setup	Alwis P.G.R.M.	5	Completed
Customer product browsing	Gammanpila J.P.	8	Completed
Basic stock viewing	Nishshanka N.P.S.M.	8	Completed

Sprint 2 (Core Functionality Sprint)

Duration: 2 weeks **Goal:** Implement product and order management

User Story	Assignee	Story Points	Status
Customer order tracking	Athukorala A.P.H.B.	3	Completed
Stock level updates	Nishshanka N.P.S.M.	3	Completed
Product filtering and search	Gammanpila J.P.	5	Completed
Admin product management	Alwis P.G.R.M.	5	Completed
Online payment integration User role assignments	Wickramaarachchi M.H.	3	Completed
User role assignments	Alwis P.G.R.M.	3	Completed

Sprint 3 (Advanced Features Sprint)

Duration: 2 weeks **Goal:** Implement security and support features

User Story	Assignee	Story Points	Status
Customer contact form submission	Kuyilini T.	8	Completed
Admin user history access	Alwis P.G.R.M.	5	Completed
System health monitoring	Alwis P.G.R.M.	8	Pending
Password reset configuration	Wickramaarachchi M.H.	8	Completed
Order status monitoring	Athukorala A.P.H.B.	5	Pending

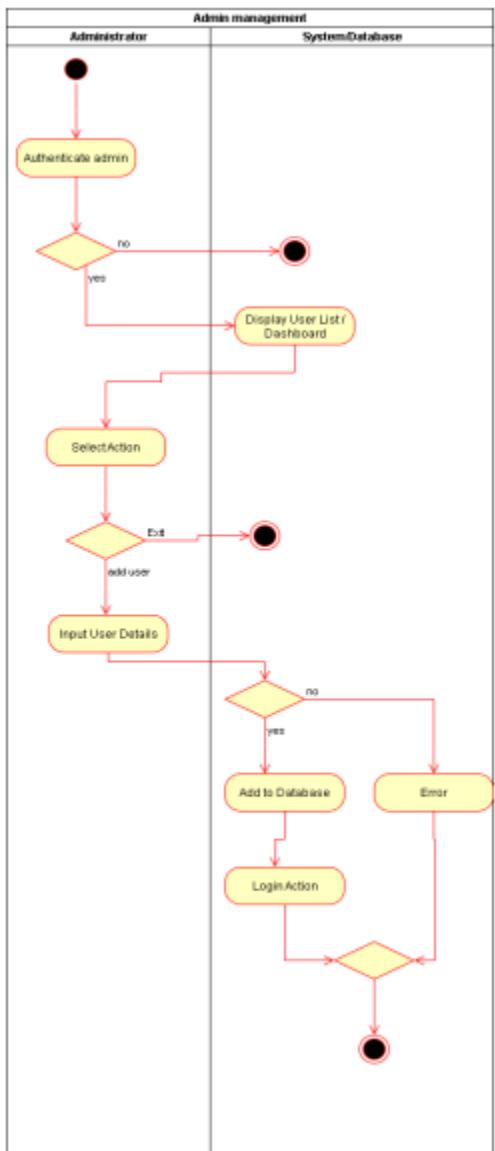
Sprint 4 (Analytics & Reporting Sprint)

Duration: 2 weeks **Goal:** Complete analytics system and advanced reporting features

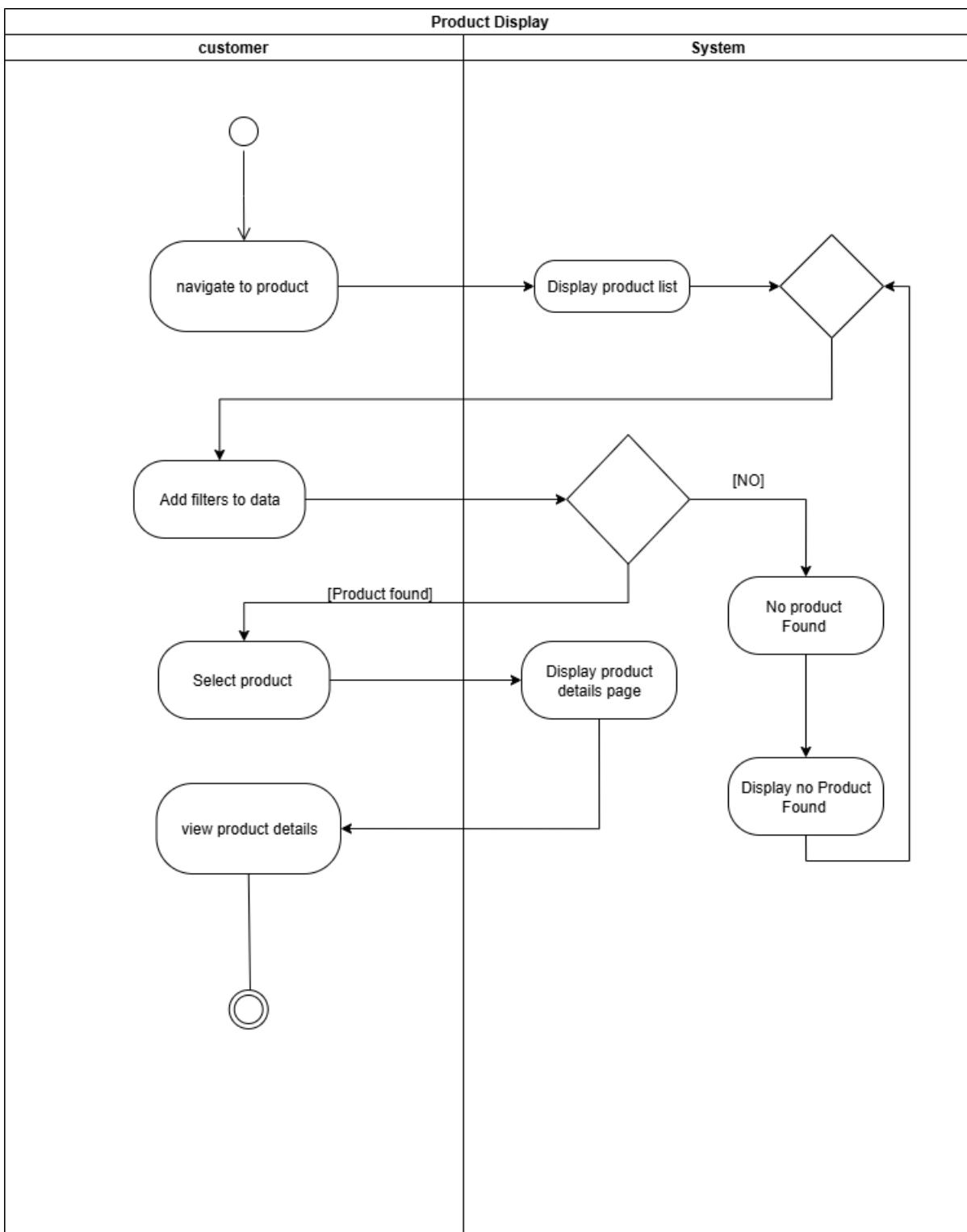
User Story	Assignee	Story Points	Status
Admin sales analytics	Kuyilini T.	13	Completed
Financial revenue reports	Kuyilini T.	13	Completed
System-wide analytics	Kuyilini T.	8	Completed
Payment gateway management	Wickramaarachchi M.H.	8	Completed
Data export features	Kuyilini T.	5	Completed
Authentication enhancements	Alwis P.G.R.M.	8	Completed

Activity Diagrams

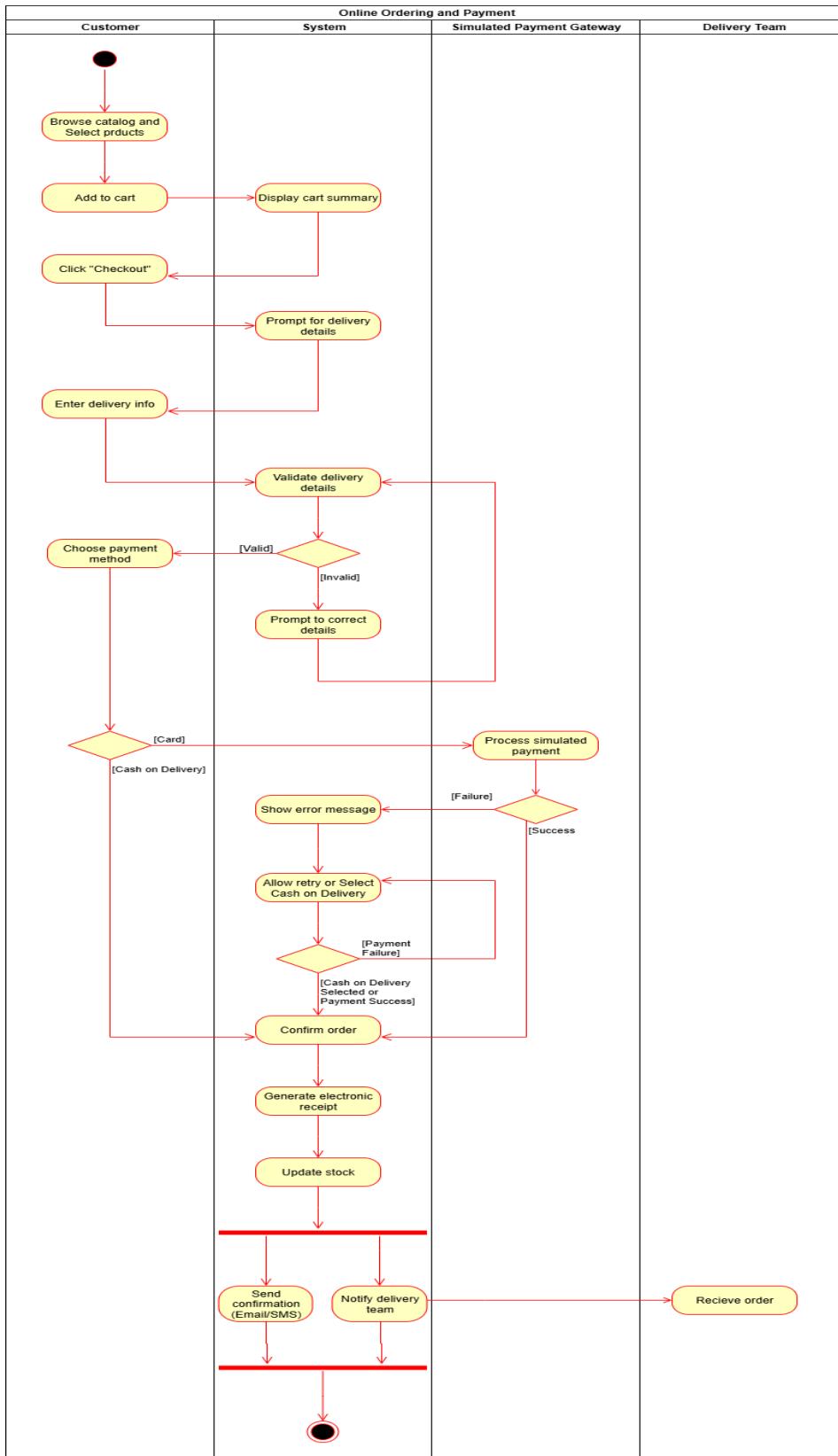
UC-01 - Admin Management



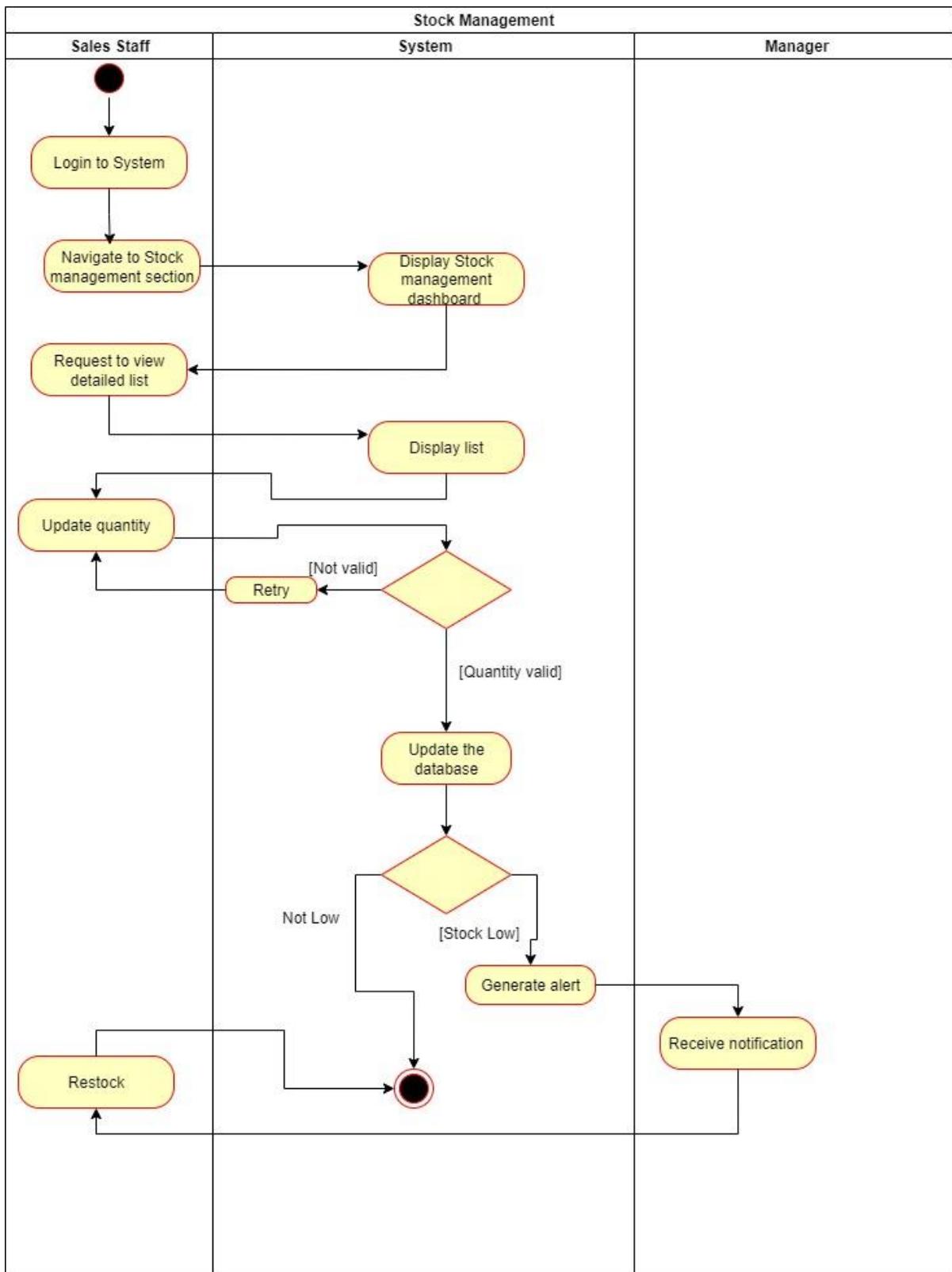
UC-02 – Product Display



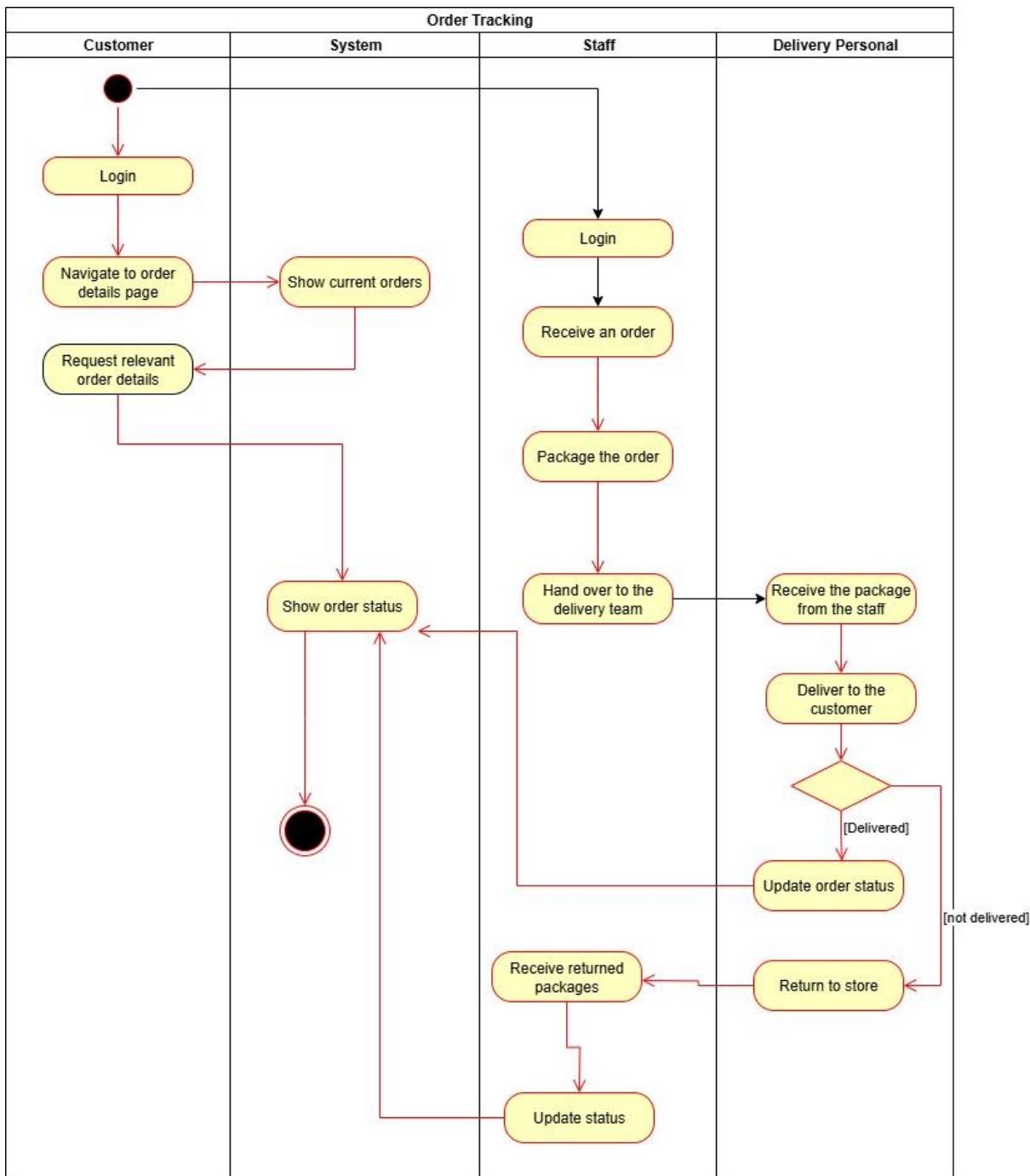
UC-03 – Online Ordering and Payment



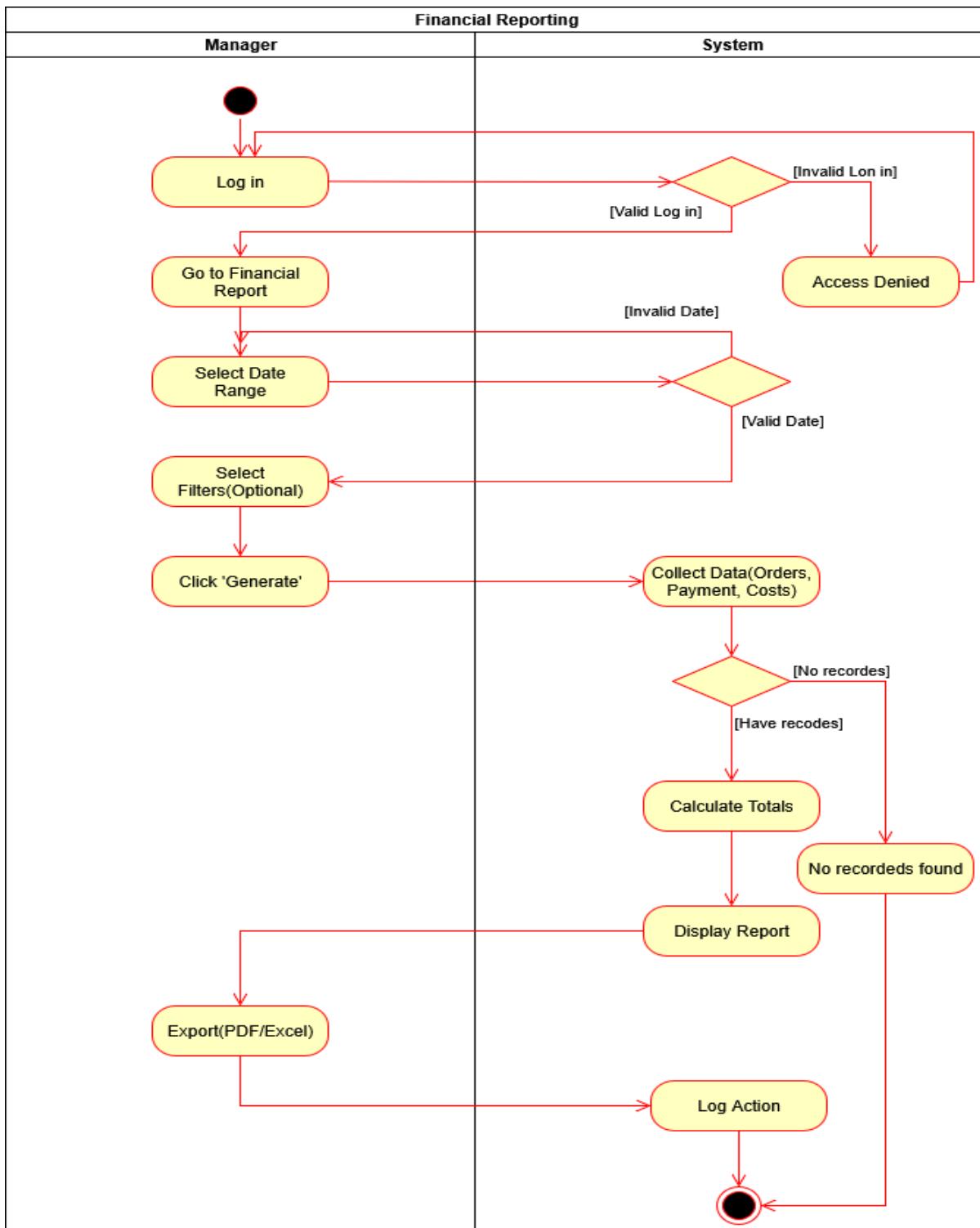
UC-04 – Stock Management



UC-05 – Order Tracking



UC-06 – Financial Reporting



Ethical Considerations

In the creation of the Web-based Musical Instrument Selling System, the following should also be taken in maintaining user trust, fairness, and security: Data Privacy, Fairness and Transparency, and Accountability and Reliability should be taken into the utmost consideration.

1. Data Privacy

Data privacy is described as protecting personal and confidential information from misusing or unauthorized use. It involves storing user identities (Customer, Staff, Manager), shipping, and billing in our system. There is a need to protect such confidential information in order to gain users' trust and follow the norms of privacy.

To achieve this:

Secure Data Transmission and Storage: Stored user accounts should be secured, and passwords should be stored securely. Payment data should be processed through an emulator gateway for secure protection of transaction data.

Access Control: There must be rigorous role-based access control. The

The admin is responsible for the user accounts and rights, and users do not receive information that is non-essential for their work, and insider threats are therefore prevented.

Data Minimization: The database will only process that data which is essential for executing orders, e.g., remittance and shipping detail, and will never ask for non-essential personal data from the customer.

2. Fairness and Transparency

Customers should also be fully informed of products purchased and terms of transaction. Clarity lends authenticity and facilitates customers in arriving at informed decisions, ensuring that market place is fair.

These will comprise: Correct Product Details: The system is used to present customers with descriptions and pictures of musical instruments in detail. It is morally essential that the information, overseen by personnel, is correct and does not mislead customers so that they have precise knowledge of what they're purchasing. Clear Transaction Terms: While checking out, the system should show a clear list of the products in the cart and show transparent payment methods, such as "Card" or "Cash on Delivery". All promotions and filters used should show clearly in the end price.

Post-Purchase Clarity: Order Tracking provides customers with up-to-the-minute visibility into the status of their order, from processing to shipping, so customers know each and every step in the fulfillment process.

3. Reliability and Accountability

Having been an e-commerce website, operational reliability and transparent accountability represent the greatest ethical issues in customer satisfaction and business efficiency. Stakeholders such as customers and internal employees depend on the level of accuracy and reliability in the system.

To provide for accountability and reliability:

System Reliability: The system is built with specified workflow and extension handling errors that may occur, like failed payments or non-availability, so that transactions will never fail without an express resolution pathway for the user.

Effective Stock Control: Stock Control Module allows individuals to keep inventory levels current and provides automatic notifications for low stocks. It does not permit sales of products that cannot be supplied, and it is among the components of effective service.

Resolution of Complaints and Administration of Order: Effective administration of orders allows the admins to deal with issues such as refund or cancellation more effectively. This ensures that when issues do arise, they're taken care of in due course and in transparent process