University of Santo Tomas

College of Information and Computing Sciences

España, Manila

Software Engineering I

Software Requirements Specifications for Datu Shop Inventory Management System

Client: Datu Shop

Prepared By:

Abrigo, Nathanael Chris O.

Daliuag, Ronan Manuel D.

Dela Paz, Angelo Daniel A.

Entrata, Joshua Kyle K.

Lorenzo, Lex Zedrick M.

Padrejuan, Shaun Kristoffer C.

Salvador, Fabian III R.

Sebastian, Nigel Haim N.

3CSC

Submitted To

Asst. Prof. Janette E. Sideño

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1. Introduction

1.1 Purpose

This document aims to provide a comprehensive overview of the Inventory Management System designed for Datu Shop, encompassing its description and features. The document delves into the system's components and interfaces, user roles and actions, stimulus and response sequences associated with the system's features, dependencies, risks, and constraints.

The primary aim of the proposed Inventory Management System is to mitigate challenges associated with the manual (pen-and-paper) method of managing inventory items and order tracking. Focusing on the inventory system, it addresses issues such as the lack of a comprehensive understanding of the total count and availability of a part required for client services. Furthermore, it eliminates the need for preemptive knowledge about low stocks of specific products. Based on interviews and on-site visits to the shop, the subsequent figure outlines the sub-problems and the root problem that the system endeavors to resolve.

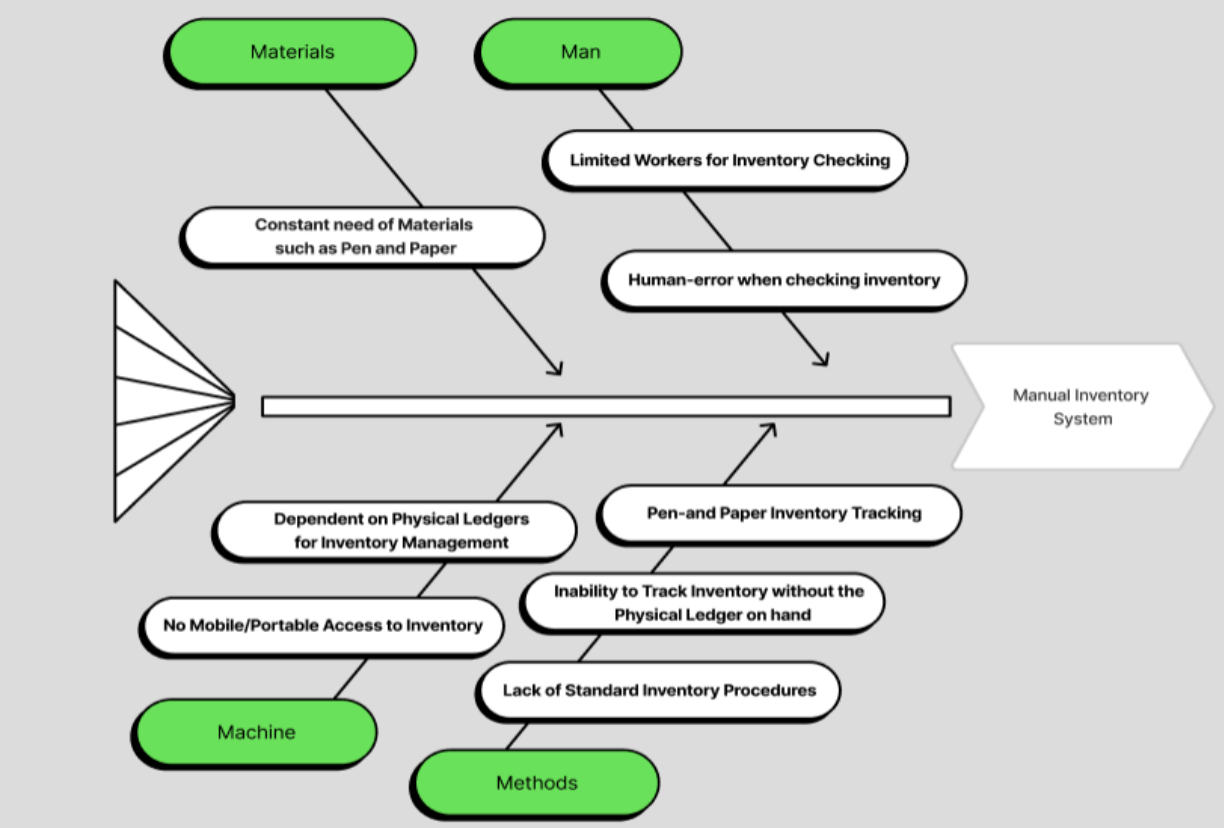


Figure 1.1 Fishbone Diagram

1.2 Document Conventions Purpose

This document adheres to the format established by Karl E. Wiegers in 1999. The Software Requirements Specification (SRS) document is structured into five sections: Introduction, Overall Description, External Interface Requirements, System Features, and Other Nonfunctional Requirements. To enhance readability and facilitate clear differentiation, the text within each section is presented in the 'Arial' font for the body, with headers in bold text.

1.3 Intended Audience and Reading Suggestions

Karl Wiegers' Software Requirements Specification (SRS) Template is a comprehensive document designed to address the client's needs in developing software systems. The intended audience for this template includes:

1. Project Manager
2. Business Analyst
3. System Analyst
4. Software Developers
5. Quality Assurance (QA) Officers
6. Owners and Employees (Clients)
7. Course Instructor

Reading Suggestions:

To effectively use Karl Weigner's SRS Template, readers should follow these recommendations:

1. **Read the Introduction:** Start with the introduction to understand the purpose of the SRS and the context in which it's created. This section provides an overview of the document's structure and objectives.
2. **Review the Scope and Purpose:** Understand the project's boundaries, objectives, and the problem the software aims to solve. This section helps readers grasp the big picture.

3. **Examine Functional Requirements:** Dive into the functional requirements section to comprehend the system's features and behavior. This is crucial for developers, testers, and business analysts.
4. **Explore Non-Functional Requirements:** Pay close attention to non-functional requirements like performance, security, and usability. This section guides architects, quality assurance teams, and user experience designers.
5. **Study Use Cases and User Scenarios:** Developers and testers should focus on use cases and user scenarios to understand how end-users will interact with the software.
6. **Check for Dependencies and Assumptions:** Look for dependencies on external systems or assumptions that underpin the requirements. This is vital for project managers and architects.
7. **Inspect Diagrams and Visual Aids:** Utilize any diagrams, flowcharts, and visual aids in the template to better understand the system's architecture and data flow.

1.4 Project Scope

The Datu Shop Inventory Management System is a software solution designed to store, edit, and display inventory records efficiently. Notable for its scalability and user-friendly interface, the system is accessible and practical for staff members. It simplifies supply monitoring, sends timely low-supply alerts, provides a user-friendly dashboard for visualization, and maintains a comprehensive transaction history. Supporting multiple user roles and compatible with standard operating systems, the system ensures a seamless and secure user experience.

A validation board was constructed with the collaboration of the development team and the client. To better visualize the project's scope, the validation board for the project is displayed below.

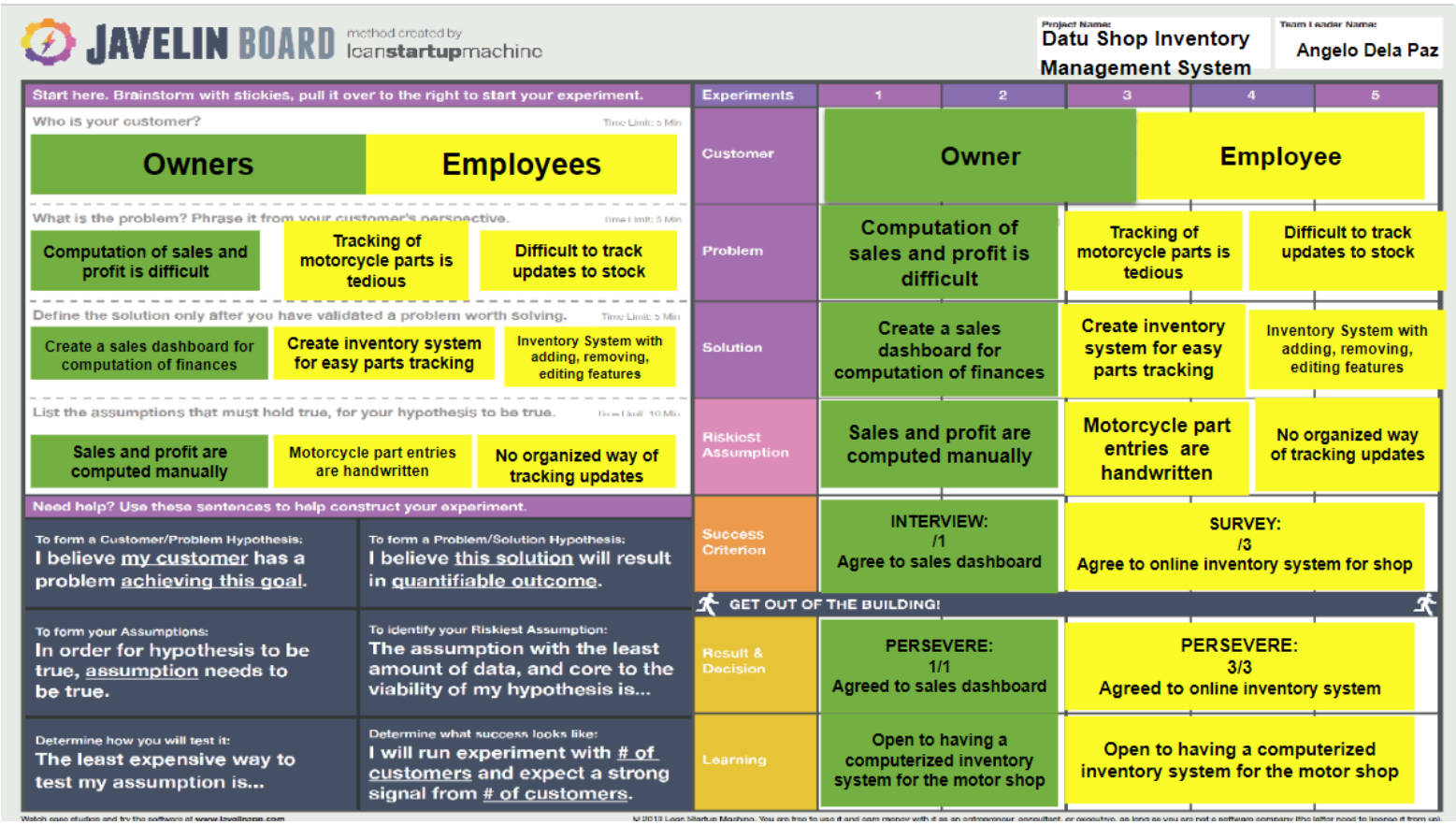


Figure 1.2 Validation Board

2. Overall Description

2.1 Project Perspective

The proposed software to be developed has two users who will primarily use the system: the establishment's owners and its employees. The term “admin” will be used to denote the owners. The processes involved with the system are implemented using a role-based method wherein the functions are limited to their respective actors. Shown below is the visualization of the system functions and their actors.

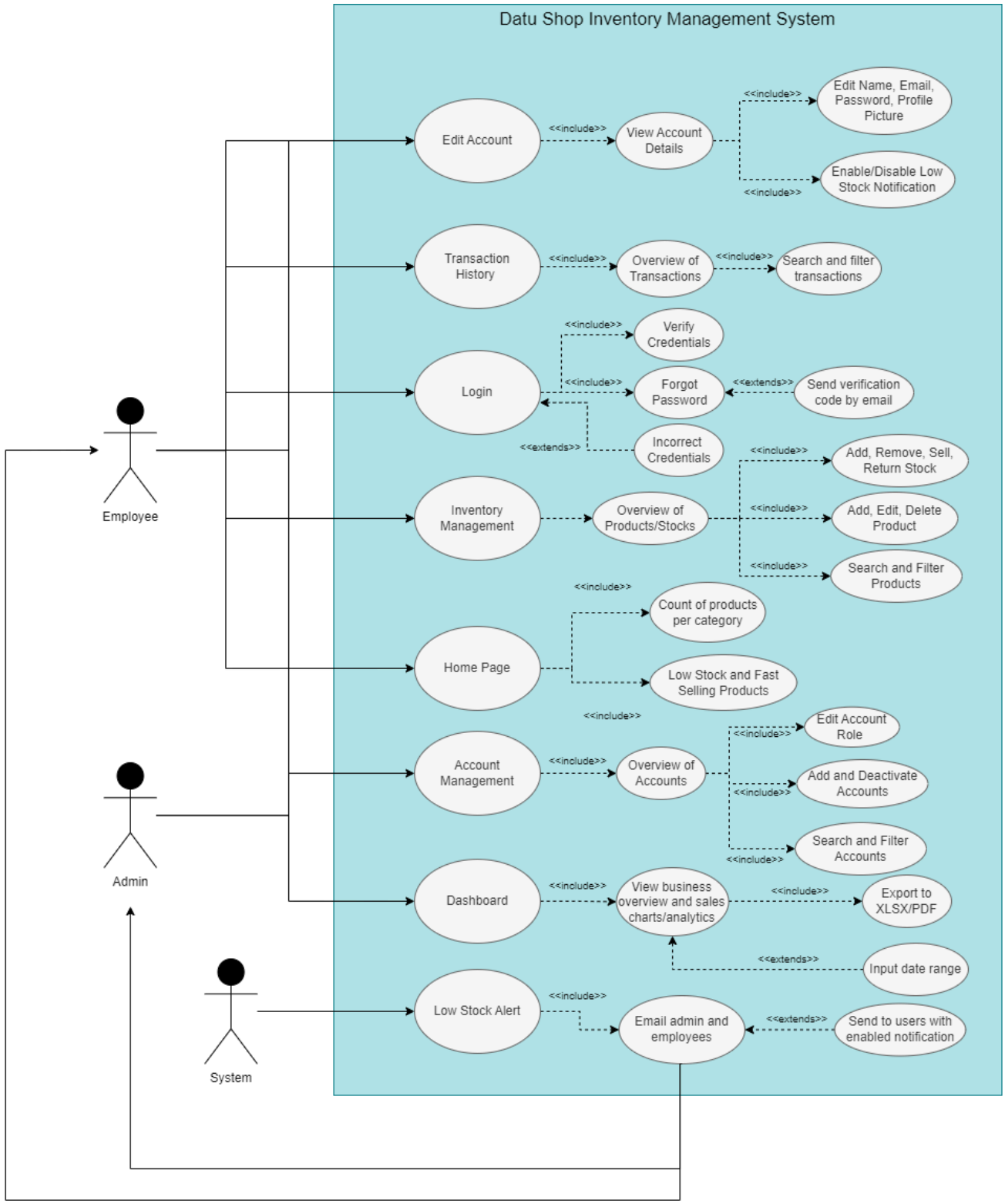

Datu Shop Inventory Management System
Edit Account
<<include>>
View Account Details
<<include>>
Edit Name, Email, Password, Profile Picture
<<include>>
Enable/Disable Low Stock Notification
Transaction History
<<include>>
Overview of Transactions
<<include>>
Search and filter transactions
Login
<<include>>
Verify Credentials
<<include>>
Forgot Password
<<extends>>
Send verification code by email
<<extends>>
Incorrect Credentials
Inventory Management
Overview of Products/Stocks
<<include>>
Add, Remove, Sell, Return Stock
<<include>>
Add, Edit, Delete Product
<<include>>
Search and Filter Products
Home Page
<<include>>
Count of products per category
Low Stock and Fast Selling Products
Account Management
<<include>>
Overview of Accounts
<<include>>
Edit Account Role
<<include>>
Add and Deactivate Accounts
<<include>>
Search and Filter Accounts
Dashboard
<<include>>
View business overview and sales charts/analytics
<<include>>
Export to XLSX/PDF
<<extends>>
Input date range
Low Stock Alert
<<include>>
Email admin and employees
<<extends>>
Send to users with enabled notification
Employee
Admin
System

Figure 2.1 High-Level Use-Case Diagram

2.2 Use-Case Descriptions

Table 2.1 Use-Case Description Table

Use-Case Name	Login
Actor	**Employee/Admin**
Description	The user lands on a page where they are prompted to enter their username and password. The system functions and privileges may vary depending on the user's account.
Pre-Condition:	The user must have a valid account.
Post-Condition:	1. The system will display the home page and sidebar menu, to navigate and allow access to the system's functions depending on the user's access level. 2. If the credentials are incorrect, the system will prompt the user to try again. 3. In case of a forgotten password, the user can reset it using the password recovery feature.
Main Path	1. The user opens the ITS and lands on the login page. 2. The user must input their username and password. 3. The system will check the credentials. 4. If the login credentials are correct, the user will be redirected to the inventory page.
Alternative Path:	If the user fails to give the correct credentials, the system will prompt the user to try again. Password Recovery: 1. The user clicks on the "Forgot Password" link on the login

	page. 2. The system prompts the user to enter their registered email address. a. If the entered email address is valid, the system generates a unique password reset link and sends it to the user's email. b. If the entered email address is not valid, the system displays an error message, prompting the user to enter a valid email address. 3. The user receives the email with a unique code. 4. The system validates the code and redirects the user to a page where they can enter a new password. 5. The user sets a new password. 6. The system updates the user's password in the database.

Use-Case Name	**Home Page**
Actor	**Employee/Admin**
Description	The user lands on the home page, providing an overview of business metrics, including the number of products per category, fast-selling products, and low-stock products..
Pre-Condition:	The user must have a valid account and successfully log in.
Post-Condition:	The system displays the home page with relevant product category information and count.
Main Path	1. The user logs in to the IMS and is redirected to the home page. 2. A section of the home page provides a categorized breakdown of the number of products available in each product category.

	3. The system displays the list of fast-selling products and low-stock products for the business. 4. The profile picture appears in the top left corner of the page, allowing access to edit the account's details 5. A sidebar menu appears to navigate to the different features of the system depending on the user's access level.
Alternative Path:	In case of an error or system malfunction, the user may be redirected to an error page.

Use-Case Name	**Edit Account**
Actor	**Employee/Admin**
Description	The user lands on the edit account page, which has the details of the account. Users can edit the details of their accounts, such as name, picture, email, and password, as well as enable low-stock notifications to their email.
Pre-Condition:	1. The user must have a valid account and successfully log in. 2. The user must click the profile picture found in the top-left corner of the pages
Post-Condition:	The system displays the edit profile page with the view of the current account details, as well as an edit account button at the top-right corner of the page.
Main Path	1. The user clicks their profile picture, redirecting them to the my account page. 2. The user views the details of their account 3. The user clicks the edit account button and is prompted with a modal containing inputs of the account details, filled in with placeholder text of the current values. 4. The user can change their account details, as well as

	toggle/activate the low-stock notification feature for their email. Clicking the confirm button saves the changes, while the cancel button closes the modal.
Alternative Path:	In case of an error or system malfunction, the user may be redirected to an error page.

Use-Case Name	**Transaction History**
Actor	**Employee/Admin**
Description	The users access a dedicated page to view the transaction history. The page provides a detailed record of all transactions/actions conducted within the system, offering insights into financial activities and system activities.
Pre-Condition:	1. The user must have a valid account. 2. The user must be logged in.
Post-Condition:	The system will display the transaction history page, showcasing a chronological list of all transactions/actions.
Main Path	1. The user logs in to the system. 2. Upon successful login, the user lands on the home page. 3. The user can select the "Transaction History" option on the sidebar. 4. The transaction history page shows a list of transactions with their details. 5. The user can scroll through the transaction history or use filters and the search bar to narrow down the results. 6. The user can view the full transaction details by clicking a specific transaction in the table.

Alternative Path:	In case of an error or system malfunction, the user may be redirected to an error page or prompted to try reaccessing the transaction history.

Use-Case Name	**Inventory Management**
Actor	**Employees/Admin**
Description	The system oversees and controls the inventory of products. It can add/delete products, increase/decrease stock levels, sell stocks, process returns, and efficiently manage the product catalog through filters and a search bar.
Pre-Condition:	The user must log in successfully with the correct credentials.
Post-Condition:	Inventory levels and the product catalog are accurately updated based on the user's actions.
Main Path	1. Upon successful login, the user is directed to the home page. 2. The dashboard provides options for managing inventory: a. Add Stock: The user selects the "Add Stock" option, enters product details, specifies quantity, inputs the price, inputs the order request and arrival to derive turnaround time, and submits to increase stock levels. b. Remove Stock: The user selects the "Remove Stock" option, chooses the product, specifies the quantity to be removed, and submits to reduce stock levels. c. Sell Stock: The user selects the "Sell Stock" option, chooses the product, specifies the quantity sold, inputs the price sold, submits to decrease stock levels, and records the transaction.

	d. Return Stock: The user selects the "Return Stock" option, chooses the product, specifies the quantity returned, and submits to adjust stock levels accordingly. e. Add Product: The user selects the "Add Product" option, enters details for the new product, and submits to add it to the product catalog. f. Delete Product: The user selects the "Delete Product" option, chooses the product to be removed, and submits to delete it from the product catalog. g. Edit Product: The user selects the "Edit Product" option, identifies the product requiring modification, and submits the necessary changes to update the product details in the catalog. 3. The system can use filters to view specific subsets of products based on category. 4. The search bar lets users quickly locate specific products by entering keywords or product names. 5. The system validates and processes the user's requests, updating inventory levels and the product catalog accordingly. 6. The system confirms the actions taken.
Alternative Path:	In case of an error during inventory management: a. The system logs the error for troubleshooting purposes. b. The admin may be prompted to review and correct the information provided. c. If the issue persists, the admin is notified, and additional support may be involved.

Use-Case Name	**Low Stock Alert**

Actor	System
Description	The system automatically generates and sends email notifications to the Admin when the quantity of a particular product falls below a predefined threshold, signaling a low stock condition.
Pre-Condition	1. The system must have the email of the Admin and Employees for low-stock alerts. 2. The system must be configured with predefined low stock thresholds for each relevant product.
Post-Condition	Email notifications are sent to the Admin and Employees, providing information about products falling below the specified low stock threshold.
Main Path	1. The system continuously monitors the inventory levels of products. 2. When the quantity of a product falls below the predefined low stock threshold: a. The system generates a low stock alert. b. The system identifies and retrieves the relevant product details. c. The system composes an email notification containing information about the low-stock product. 3. The system sends the email notification to the designated recipients. 4. Recipients receive the low stock alert email and take appropriate action, such as reordering stock or updating inventory levels.
Alternative Path:	If the designated recipients' email addresses are invalid or unreachable, the system may log the error and notify administrators for address verification or correction.

Use-Case Name	Account Management
Actor	**Admin**
Description	The user interacts with a dedicated user account management page to create, edit, deactivate, or search for user accounts within the system.
Pre-Condition	The user must have valid credentials to access the account management system.
Post-Condition	Upon successful interaction with the account management page, the system updates the user account database based on the user's actions, whether creating, editing, deactivating, or searching for user accounts. The system confirms and reflects the changes made by the administrator.
Main Path	1. Upon successful login, the user lands on the home page. 2. The user can select the "Account Management" option on the sidebar. 3. The system shows the administrator a page displaying options for managing user accounts. 4. The administrator selects one of the following actions: a. Add User Account: The user fills in the required user details, assigns roles and permissions, and submits the information to create a new user account. b. Edit User Account Role: The user selects an existing user account, modifies their access to the system, and saves the changes. c. Deactivate User Account: The user selects an existing user account and deactivates its access to the system. d. Account Search: The user can search the list of accounts by name or other details. 5. The system validates and processes the request.

	6. If successful, the system updates the user account database accordingly. 7. The system confirms the action taken.
Alternative Path:	In case of an error during user account management: a. The system logs the error for troubleshooting purposes. b. The administrator may be prompted to review and correct the information provided.

Use-Case Name	**Dashboard**
Actor	**Admin**
Description	The user can access a comprehensive dashboard providing a consolidated and visual representation of key metrics, data, and insights relevant to the system's operation.
Pre-Condition	The user must have valid credentials.
Post-Condition	The user gains insights from the dashboard, facilitating informed decision-making and monitoring of relevant system metrics.
Main Path	1. The system user logs in with valid credentials. 2. Upon successful login, the user lands on the home page. 3. The user can select the "Dashboard" option on the sidebar. 4. The dashboard displays a set of key performance indicators, charts, graphs, or other visual elements providing an overview of relevant system metrics. 5. The system user can interact with the dashboard to: a. Adjust the date range of the data. Premade ranges such as weekly or monthly are given. b. Export the data to an XLSX/PDF file.
Alternative Path:	If the dashboard encounters a data retrieval or display error:

	a. The system may attempt to recover and refresh the data. b. An error message indicates the issue and recommends a manual refresh. c. The system logs the error for further investigation by technical support or administrators.

2.2 Project Functions

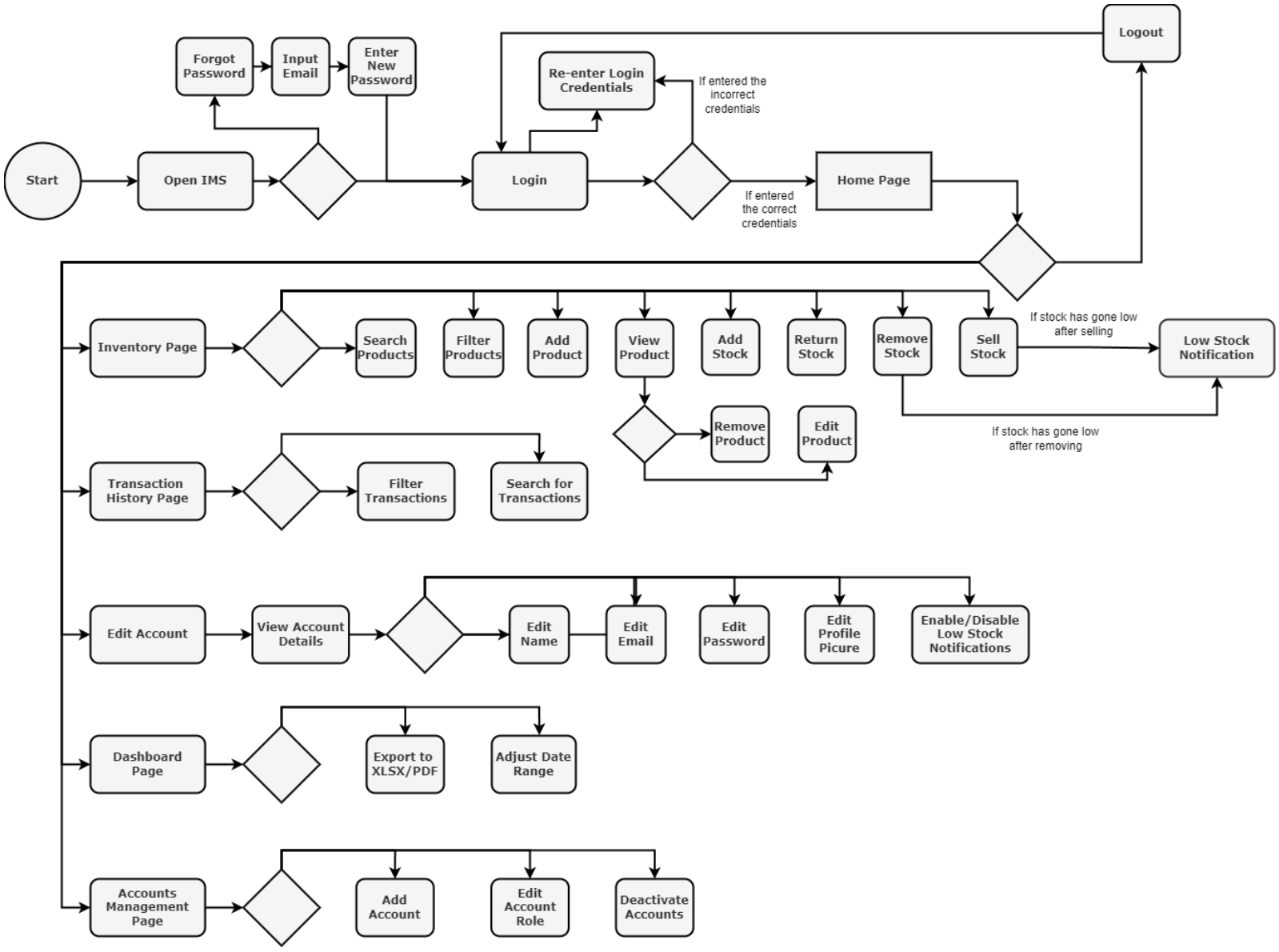


Figure 2.1 Activity Diagram

2.3 User Classes and Characteristics

The system comprises two user classes: Admins and Employees. Admins have administrative privileges, enabling them to manage accounts, utilize the dashboard, and access all other features in the system. In contrast, employees have limited access compared to admins. Their responsibilities include updating the inventory and viewing the transaction history.

Table 2.2 User Characteristics Table

User	Characteristics	Access
Admins	Admins manage every aspect of the business, including reports, transactions, dashboard statistics, products, and user management.	All System Functions
Employees	Employees are assigned responsibilities concentrating on inventory management and transaction processing duties.	Access is limited to Inventory Management and Transaction History only; no Dashboard or Account Management.

Admins and employees must log in with valid credentials to access the system. Incorrect credentials may trigger error prompts. Both user classes share access to the inventory management system and transaction history.

2.4 Operating Environment

The Datu Shop Inventory Management System functions as a web-based application, leveraging a cloud server for seamless accessibility across various devices. The user interface is crafted using React and TailwindCSS, prioritizing a user-friendly experience.

Powering the system's backend is a combination of PostgreSQL and Python. PostgreSQL manages and structures the relational database, facilitating data modification,

storage, and retrieval. Meanwhile, Python is the programming language responsible for executing the system's functionalities and logic. This combination ensures the efficiency and robust capability of the inventory management system.

2.5 Design and Implementation Constraints

These constraints limit the design and development phases, although they do not directly impact the system's capabilities. Instead, they are essential factors to be mindful of during the system's creation. The key constraints include:

1. **Internet Accessibility**: The system necessitates a web-based design to facilitate user authorization accessible via the Internet. Hosting on a web server mandates a stable internet connection.
2. **Web Browser Compatibility**: Users' devices must support web browsers to enable system access, ensuring compatibility across various devices ranging from desktop computers to mobile devices.
3. **Hardware and Software Compatibility**: The system aims to minimize restrictions on end-users' hardware and software requirements. It should exhibit compatibility across various devices, operating systems, and web browsers, ensuring a seamless user experience.

2.6 User Documentation

As the application is web-based, users can access it through any installed web browser on mobile and desktop devices. A comprehensive user manual in PDF format will accompany the system, detailing the utilization of each application feature and outlining any limitations.

To further support users, developers will conduct brief face-to-face tutorial sessions, mainly focusing on maintaining the Virtual Private Network for web application users. This enhances the user experience and ensures a smooth onboarding process. In response to client inquiries and evolving business needs, the development team remains open to expanding the application's capabilities.

2.7 Assumption and Dependencies

Listed below are the factors that may affect the satisfaction of requirements:

- The hosting costs associated with the website. If the expenses exceed expectations or are deemed unsatisfactory.
- The proficiency of employees and customers in using computer systems.
- The capabilities and reliability of the chosen hosting website.
- The expertise and technical skills of the development team.
- Unforeseen difficulties that may happen during the website hosting process.

3. External Interface Requirements

3.1 User Interfaces

Users have the flexibility to access the system from a range of devices, including laptops, smartphones, and tablets, all equipped with web browsers. Upon initiating the system, a secure login page prompts users to enter the correct credentials.

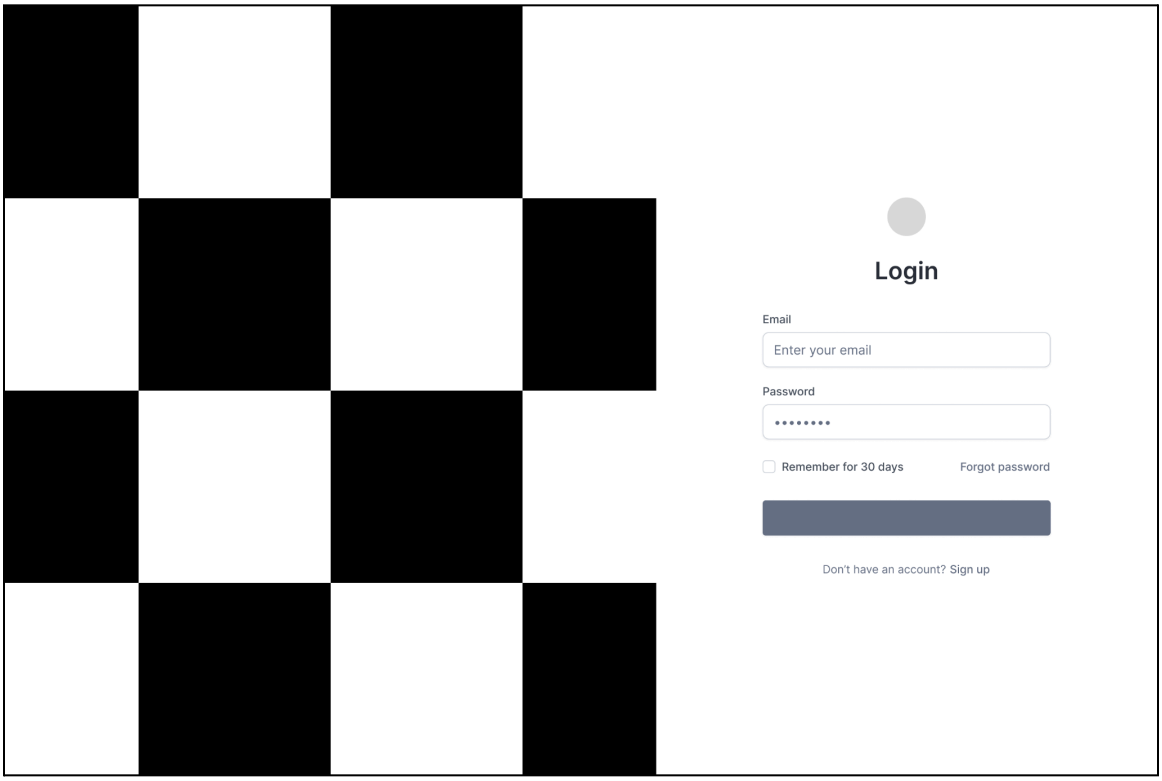


Figure 3.1 Login Screen

Upon successful login, users are directed to the home page, providing a comprehensive view of current product counts per category and an overview of sales. Subsequently, users can access the sidebar to choose the next page they would like to visit.

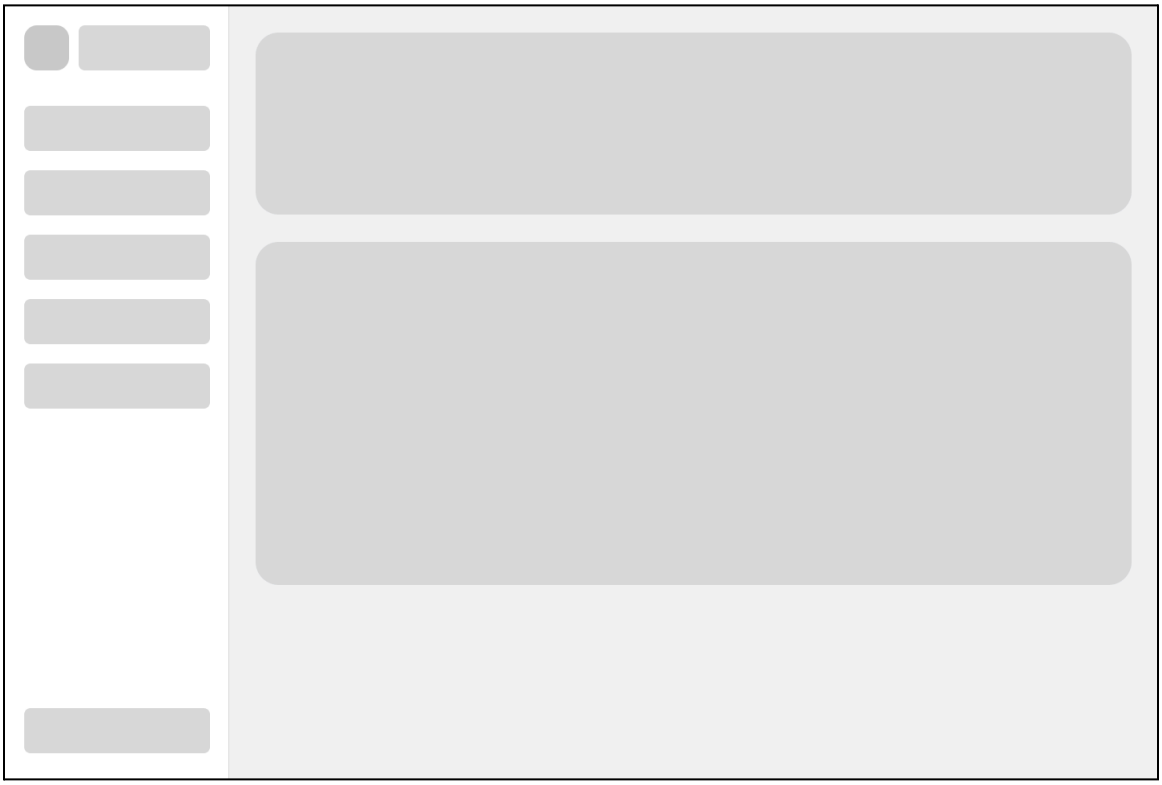


Figure 3.2 Home Page

The inventory system features search functionality for accessible locations of specific supplies and advanced filtering and categorization options, enabling users to organize and view items based on various criteria. Users can efficiently update the system with new shipments or alterations in supplies.

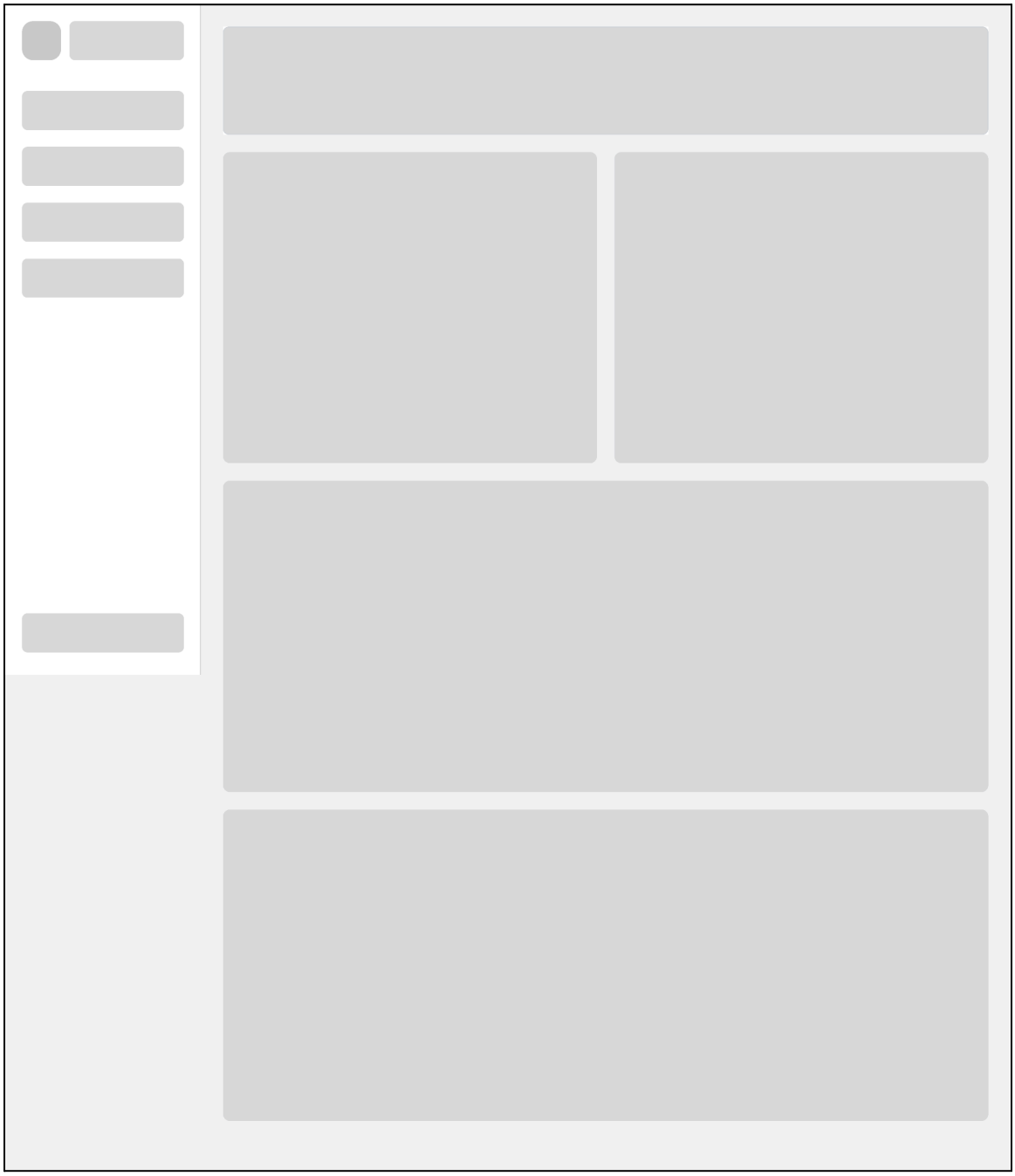


Figure 3.3 Dashboard Screen

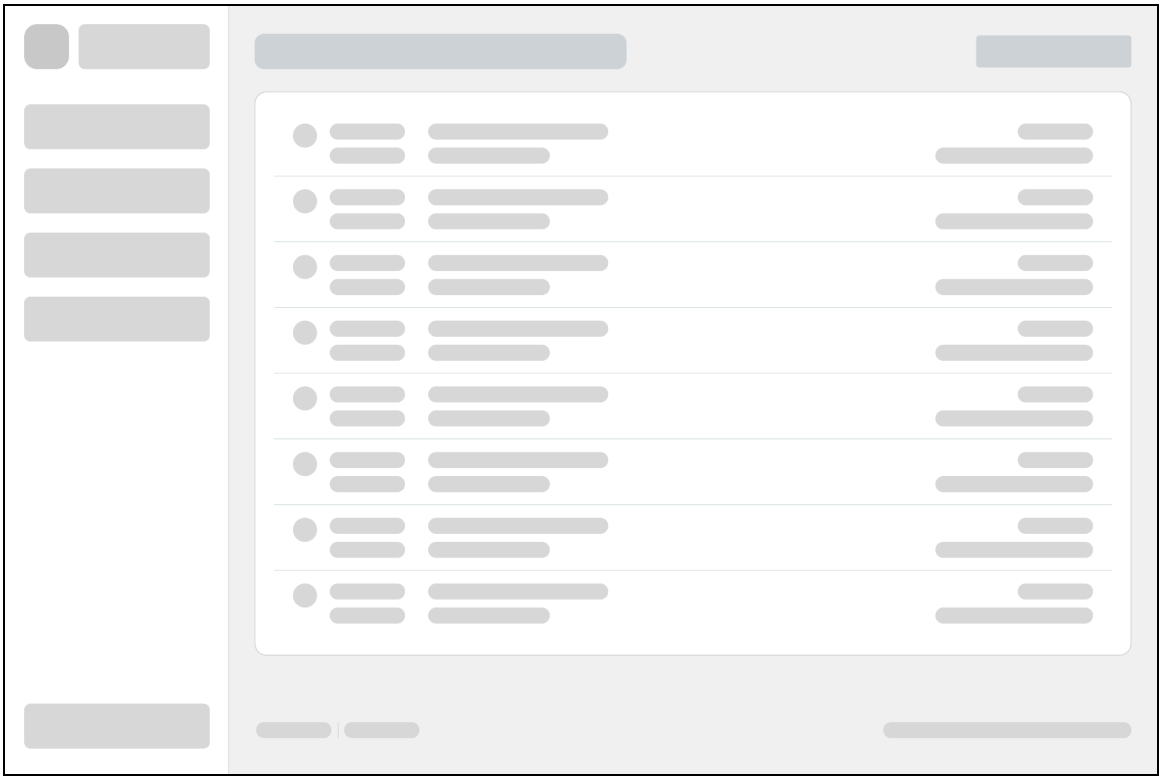


Figure 3.4 Inventory Screen

Furthermore, the system offers features for item exchange or swapping, processing returns with refunds, and managing warranties for selected items. To support data-driven decision-making, users can effortlessly export sales data, providing valuable insights for informed choices.

Figure 3.5 Edit Product Modal

Users (admins) have the flexibility to update their account details via an account management page. This includes modifying their name, email address, password, and role. Users (admins) can also add new users to the system through this page.

Figure 3.6 Account Management Screen

Figure 3.7 Edit Account Modal

3.2 Hardware Interfaces

The admins and employees will use laptops and mobile devices to access the inventory and order management system. It is required that these devices are connected to the internet, as the system and required software will be accessed online.

3.3 Software Interfaces

Users should be able to use any modern web browser, including but not limited to Google Chrome, Microsoft Edge, and Mozilla Firefox. This necessitates having sufficient storage capacity on their personal devices to install these browsers and any additional software required to function the software system properly.

3.4 Communications Interfaces

The web application is implemented online, relying on a cloud server and a Virtual Private Network for continuous operation. The site incorporates various measures to enhance security, including XSS protection, CSRF protection, Clickjacking protection, HTTPS/SSL, Cross-origin opener policy, Referrer policy, Database Injection Protection, and Session security. Users are advised to stay vigilant regarding potential intrusions into the system.

4. System Features

4.1 Login/Logout

4.1.1 Description and Priority

This feature holds high priority as it controls access to the system by authenticating users' login and providing a secure logout mechanism.

4.1.2 Stimulus/Response Sequences

Stimulus: The user initiates the login process by providing valid credentials (username and password).

Response: The system verifies the provided credentials and allows access if valid; otherwise, denies access and prompts for correct credentials. Upon logout request, the system logs out the user and ends the session.

4.1.3 Functional Requirements

REQ-1: The system must validate the user's credentials against stored data (username and password) in the database.
REQ-2: Successful login grants access to the system's features based on user roles and permissions.
REQ-3: Users must have the ability to log out securely, terminating their active session.
REQ-4: Implement encryption and security measures to safeguard user login credentials and sensitive data.
REQ-5: The system must provide a "Forgot Password" option on the login screen.
REQ-6: Users must be able to initiate the password recovery process by providing their registered email address.
REQ-7: The system must securely generate and send a code to the user's registered email address or through another secure communication method.
REQ-8: The user must be able to use the code to set a new password.

4.2 Inventory Management

4.2.1 Description and Priority

This feature holds a high priority as it allows the management of products within the inventory, ensuring accurate and up-to-date records.

4.2.2 Stimulus/Response Sequences

Stimulus: User-initiated actions to add a product, edit details of an existing product, or delete a product from the inventory. It can also be used to increase/decrease stock levels, return stocks, and sell stocks.
Response: The system processes these requests by adding new product details, modifying existing product information, or removing the selected product from the

inventory. Additionally, it adjusts stock levels accordingly, either increasing or decreasing based on the specific user action, such as returning or selling stocks.

4.2.3 Functional Requirements

REQ-1: Users with appropriate permissions should be able to add a new product to the inventory. This includes capturing category, cost, and relevant information for the new product.

REQ-2: The system must allow authorized users to edit product details, enabling modification of information such as category, cost, etc., for existing items in the inventory.

REQ-3: Users should have the capability to delete products from the inventory. This action will permanently remove the selected product and its associated details from the system.

REQ-4: Authorized users must be able to sell stocks, deducting the sold quantity from the available stock of the respective product.

REQ-5: Authorized users must be able to remove stocks, decreasing the available stock of the respective product.

REQ-6: Authorized users must be able to add stocks, increasing the available stock of the respective product.

REQ-7: Implement a mechanism for users to return stocks, allowing authorized users to increase the stock levels for specific products.

RE

4.3 Dashboard with XLSX/PDF Export

4.3.1 Description and Priority

This feature is of medium priority as it provides a centralized platform for employees and admins to monitor key business metrics. The addition of an XLSX/PDF export functionality enhances user convenience, enabling them to extract and analyze dashboard data in external tools.

4.3.2 Stimulus/Response Sequences

Stimulus: The user navigates to the dashboard section.

Response: The system visually displays crucial performance indicators on the dashboard.

Stimulus: The user clicks on the "Export to XLSX" button.

Response: The system generates a XLSX file containing the data within the system and prompts the user to download it.

Stimulus: The user clicks on the "Export to PDF“ button.

Response: The system generates a PDF file containing the data within the system and prompts the user to download it.

4.3.3 Functional Requirements

REQ-1: The user must be an admin with the necessary privileges to access the dashboard.

REQ-2: The dashboard must present key performance metrics such as sales, inventory levels, and transaction history in a visually intuitive manner.

REQ-3: The system should feature an "Export to XLSX" button or “Export to PDF” button on the dashboard interface.

REQ-4: Clicking the "Export to XLSX" button or the "Export to PDF" button triggers the system to compile the current data into their desired file.

REQ-5: The XLSX or PDF file should encapsulate relevant information, including but not limited to sales figures, inventory status, and any other key metrics visible on the dashboard.

4.4 Transaction History

4.4.1 Description and Priority

This feature is highly prioritized as it showcases product transactions in the shop itself. Adding a product means a possible restock or return of a part has happened. Subtraction of a product means a sold part or a part gets thrown out due to wear and tear.

4.4.2 Stimulus/Response Sequences

Stimulus: The user clicks on the transaction history button.

Response: The system will display a list of transactions within a timeframe.

4.4.3 Functional Requirements

REQ-1: The user must be an employee or an admin.

REQ-2: An existing table in the database must be present to record all transactions along with real-time access to its data.

4.5 Account Management

4.5.1 Description and Priority

This feature is of high priority as it manages the account system used to filter the role of the users in the system and the login credentials used to access the features themselves. An admin can add, edit, or delete accounts for the system.

4.5.2 Stimulus/Response Sequences

Stimulus: The user clicks on the add account button.

Response: The system will prompt the user to enter their credentials and role in the system and save it to the database.

Stimulus: The user clicks on the edit account button.

Response: The system will display the user's old account details. The user can change the account's credentials and values and update the database.

Stimulus: The user clicks on the deactivate account button.

Response: The system will give the user a confirmation prompt to deactivate the account. If the user answers yes, the account will be deactivated. Otherwise, the system will go back to the account management system.

4.5.3 Functional Requirements

REQ-1: The user must be an admin.

REQ-2: An existing table in the database must be present to record all account entries along with real-time access to its data.

REQ-3: All data formats must be entered correctly.

REQ-4: Input fields must be present for the user input.

4.6 Low Stocks Alert

4.6.1 Description and Priority

This feature is of high priority as it notifies the user of low stocks of certain products in the shop. An email notification will be the primary medium for this feature.

4.6.2 Stimulus/Response Sequences

Stimulus: The system detects one of the stocks has reached the threshold for low stocks.

Response: The system will send an email notification to the admins of the low stock product.

4.6.3 Functional Requirements

REQ-1: The user must be an admin.

REQ-2: An existing table in the database must be present to record all items along with real-time access to its data.

4.7 Edit Account

4.7.1 Description and Priority

This feature is of medium priority as it allows the user to view and edit their account details such as their Name, Profile Picture, Email, and Password. It also allows user to enable and disable their low stock notifications

4.7.2 Stimulus/Response Sequences

Stimulus: The user clicks on their account picture along with their name and email.

Response: The system will display the user's existing account details, including Name, Profile Picture, Email, and Password. The user can modify these details as needed.

Stimulus: The user changes their Name, Profile Picture, Email, or Password.
Response: The system will validate the changes and update the database with the modified account details.

Stimulus: The user toggles the low stock notifications checkbox.
Response: The system will update the low stock notifications setting based on the user's selection and save the changes to the database.

4.7.3 Functional Requirements

REQ-1: The user must be logged in.
REQ-2: An existing table in the database must be present to record all account entries along with real-time access to its data.
REQ-3: All modified data formats must be entered correctly.
REQ-4: Input fields must be present for the user to input or modify their Name, Profile Picture, Email, and Password.
REQ-5: A toggle switch or checkbox must be present to enable or disable low stock notifications.
REQ-6: The system must provide feedback on successful or unsuccessful account edits.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- **Performance:** The inventory management system will ensure that the records and transactions are updated in real-time and are accurate throughout the different users.
- **Compatibility**: The application is compatible with updated web browsers; it is also Responsive; therefore, it can be used on different screen dimensions of devices.

- **Reliability:** The system will be hosted using a hosting website. Therefore, system failures will depend on the hosting website selected. Downtime may be experienced if the hosting website faces any problems.
- **Security:** The system will require a user to log in before gaining the privilege to access, edit, or delete a record from the inventory. Sensitive and confidential data will be encrypted to ensure data privacy.
- **Usability:** The system will have a user-friendly interface that will allow all users to understand the uses of the components in the system intuitively.

5.2 Safety Requirements

The inventory management system will prioritize data security through several safety measures. First and foremost, the system will employ data encryption for sensitive information to prevent privacy breaches. An SSL certificate also will be integrated to establish secure connections between the web server, users' browsers, and the database. Moreover, a firewall will be set up to protect the system's network. Lastly, the system will implement regular and scheduled data backups. These will help preserve the integrity of data whenever a modification occurs.

5.3 Security Requirements

To use the software system, the employees and admins of Datu Shop must pass through user authentication first. Usernames and passwords are needed for the users to access the inventory system and perform any additional functions that the system provides for the motor shop.

5.4 Software Quality Attributes

- **Reliability:** Regardless of the actions taken by the user or the results of those activities, the system should always show the correct data from the database.
- **Usability:** Regardless of user experience or skill level, the system should be simple to use and navigate.
- **Accessibility:** The system must be cross-platform and usable on various gadgets, such as desktop and laptop computers, tablets, and smartphones.
- **Availability:** The system is available all the time with the power of the internet.

- **Security:** Data about users should be safe from illegal access, modification, or deletion thanks to a secure system.
- **Reusability:** The system should be capable of being employed by different management systems.

5.5 Business Rules

The employees and the owners of Datu Shop can access the system's Inventory Management, Search and Filter, Transaction History, and Low Stock Notification features. The shop owner is given extra permission to see the export of sales at a specific time and the account management to add, edit, and delete accounts for the system. The complete swimlane diagram is seen below in Figure 5.1.

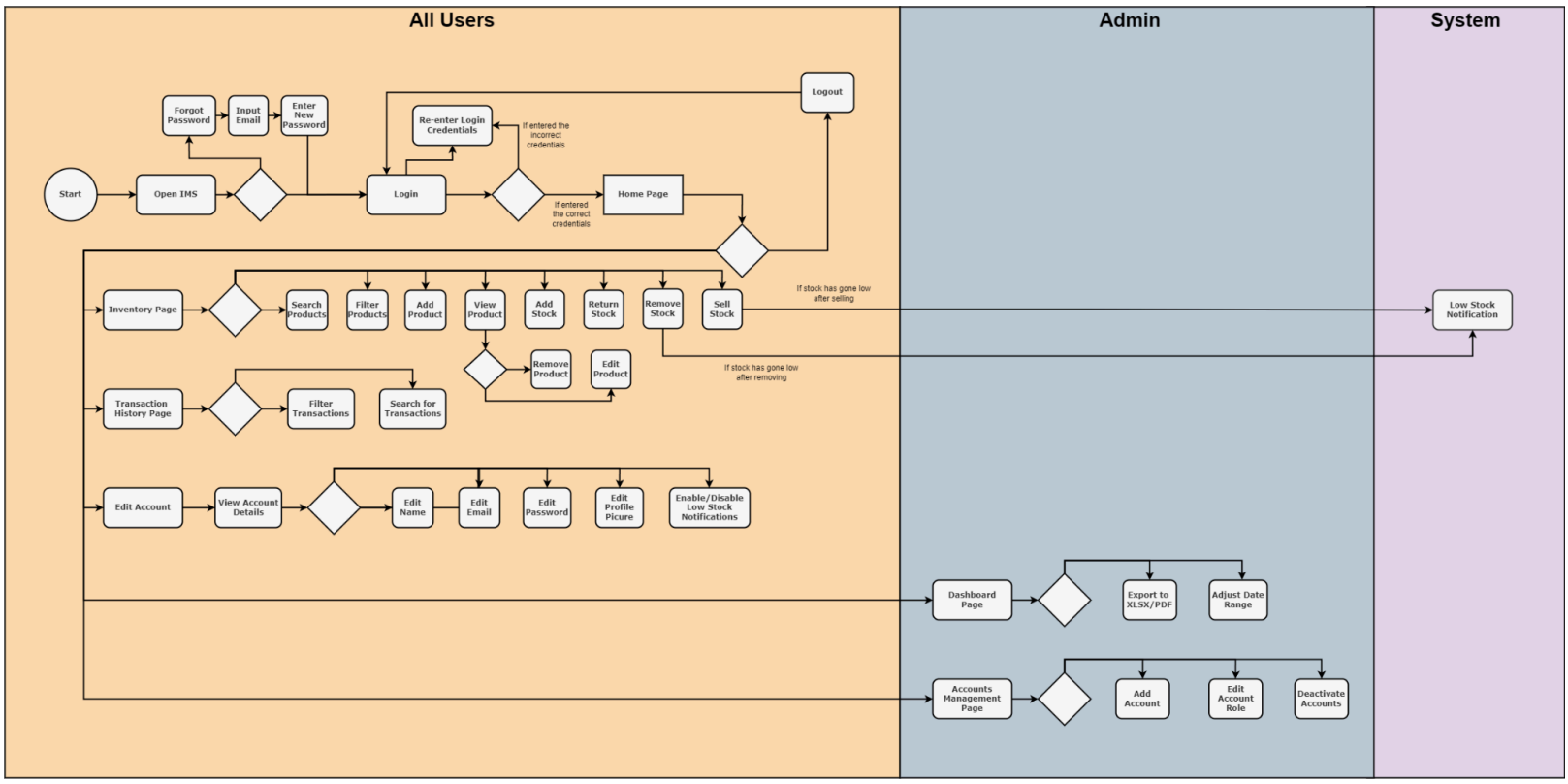


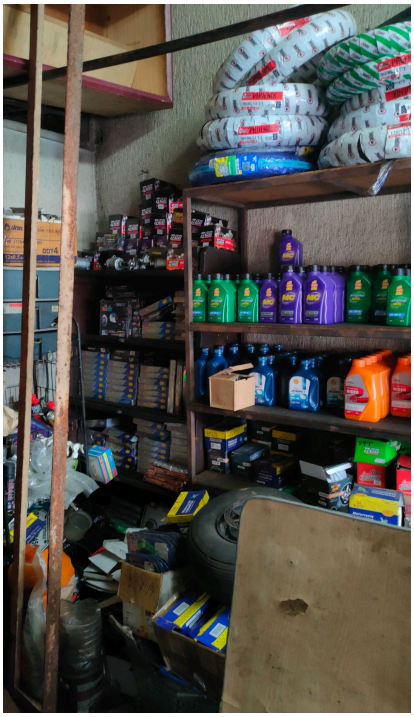
Figure 5.1: Swim Lane Diagram

6. Other Requirements

6.1 SWOT Analysis Table

	STRENGTHS	WEAKNESSES
INTERNAL	1. Long-standing establishment 2. Consumer-friendly prices	1. Outdated systems for management of supplies 2. Small to medium scale establishment only
	OPPORTUNITIES	**THREATS**
EXTERNAL	1. Need for vehicles again after the COVID-19 pandemic. 2. Rise in motorcycle users in recent years	1. Competition from other motor shops 2. Inflation of products provided by shop 3. Data security from external entities

6.2 Photo Documentation of the Current Inventory Management System of Datu Shop



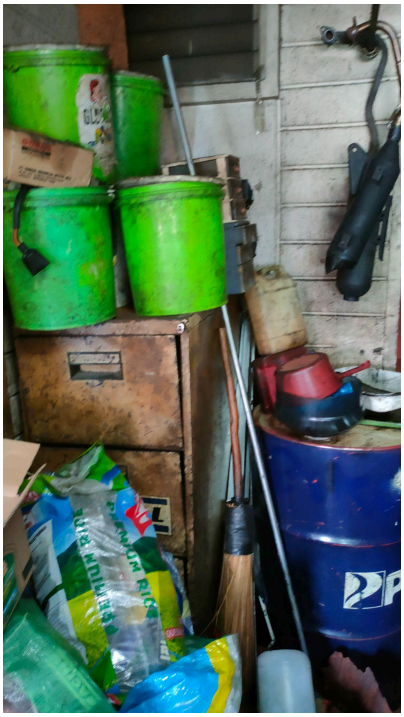
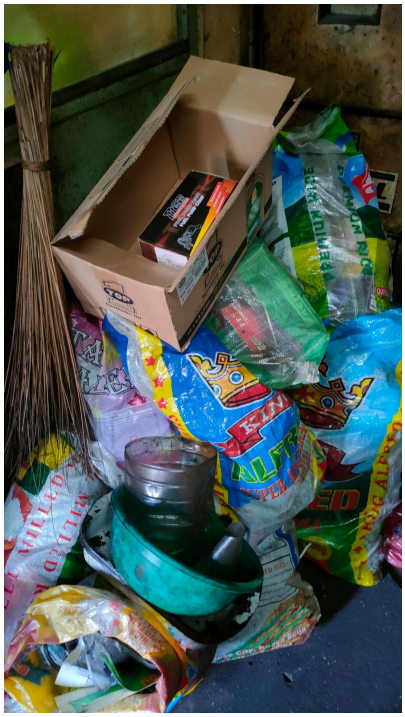


Figure 6.1. Inventory Storage of Datu Shop (Part 1)



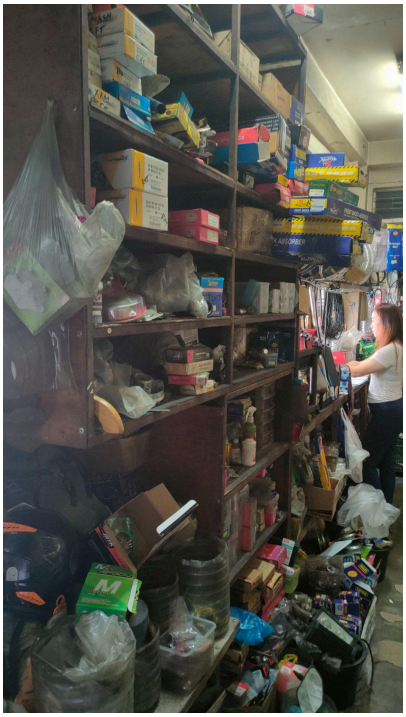


Figure 6.2. Inventory Storage of Datu Shop (Part 2)

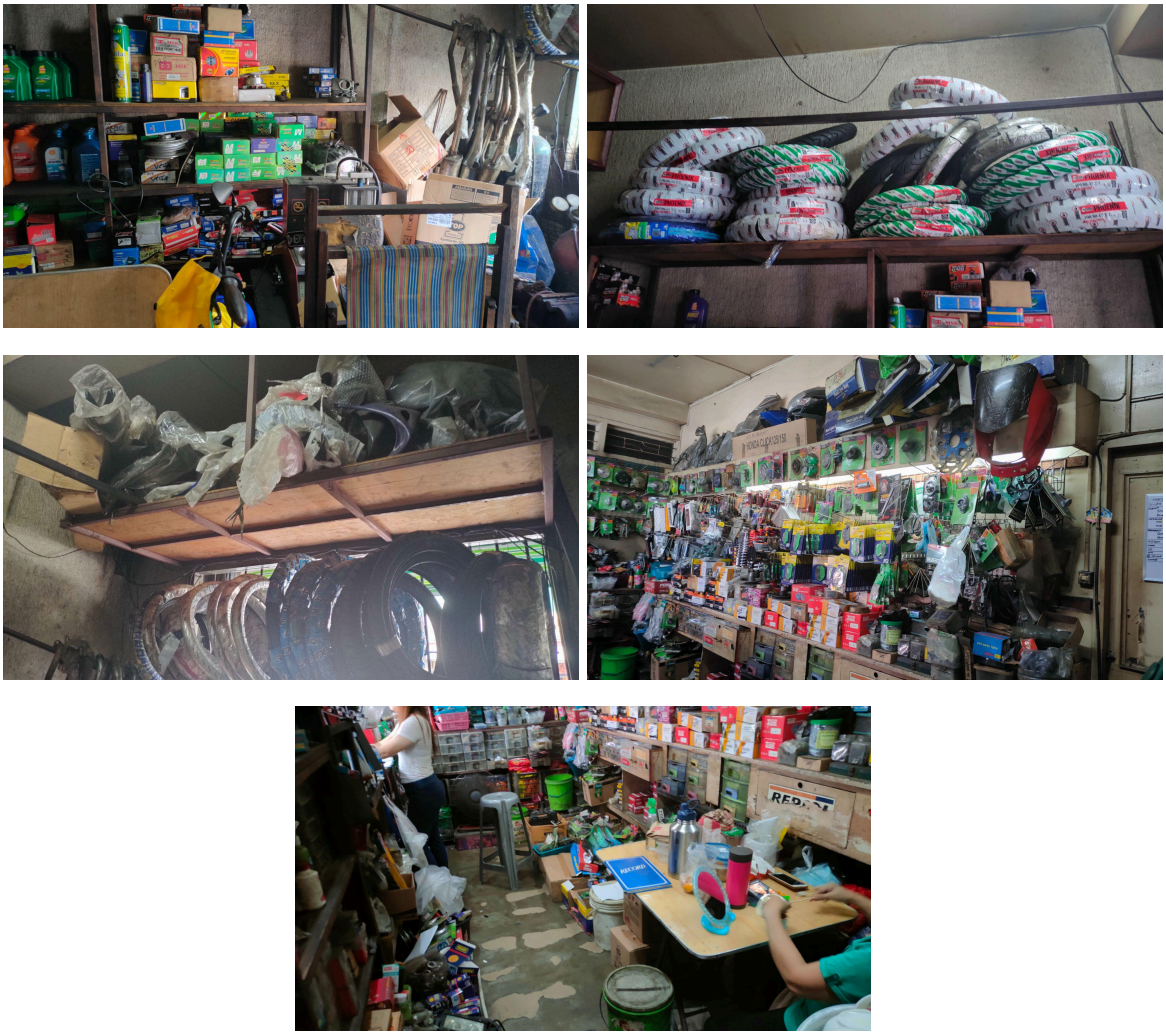


Figure 6.3. Inventory Storage of Datu Shop (Part 3)

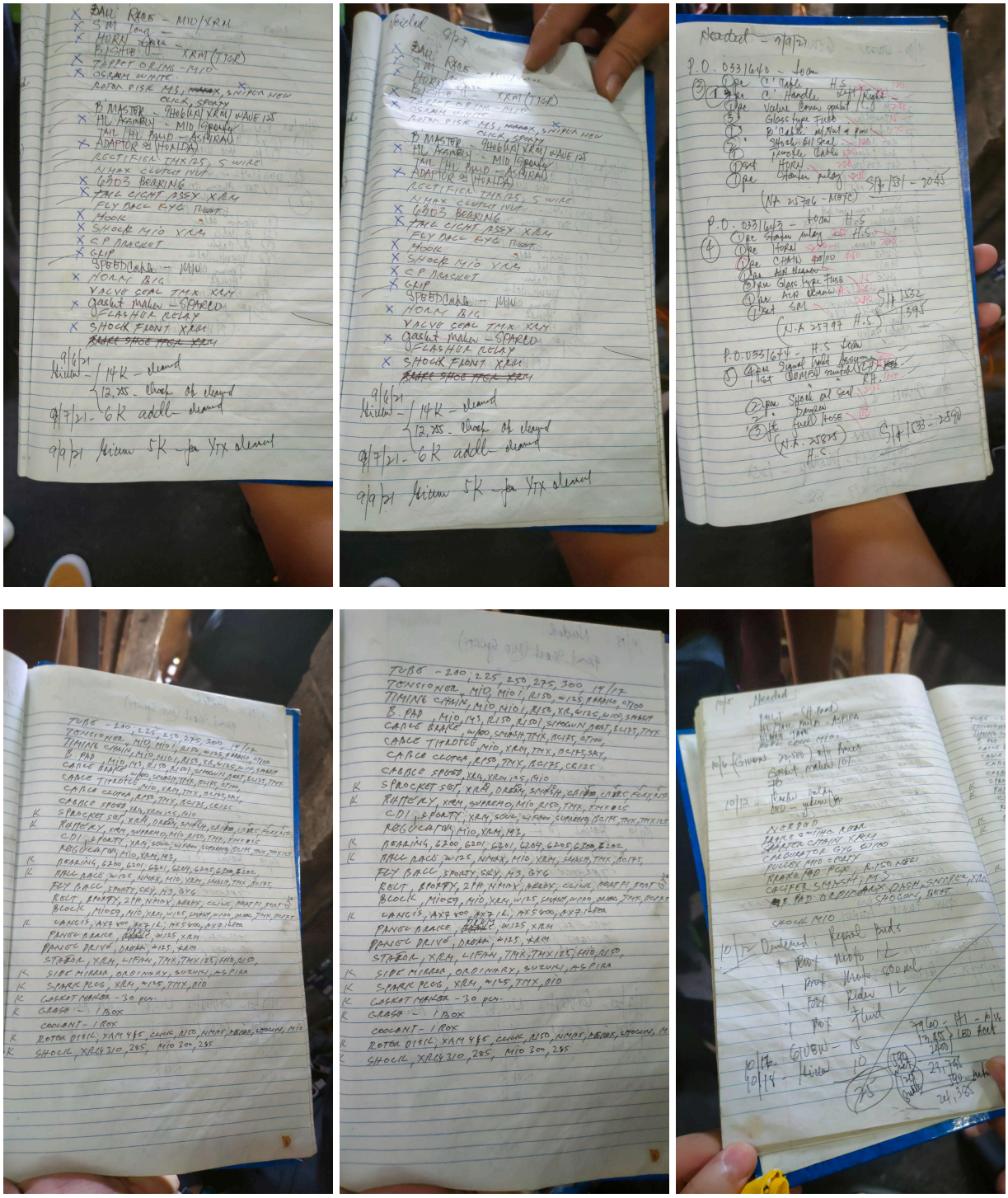


Figure 6.4. Handwritten inventory management. Ledger system

This certifies that

AA.DATU MOTORCYCLE PARTS AND ACCESSORIES SHOP

(BARANGAY)

SAN ANTONIO, QUEZON CITY NCR, SECOND DISTRICT - NCR - NATIONAL CAPITAL REGION

is a business name registered in this office pursuant to the provisions of Act 3883, as amended by Act 4147 and Republic Act No. 863, and in compliance with the applicable rules and regulations prescribed by the Department of Trade and Industry.

This certificate issued to

ALEXIES ARIES MACAALAY DATU

is valid from 30 November 2021 to 30 November 2026 subject to continuing compliance with the above-mentioned laws and all applicable laws of the Philippines, unless voluntarily cancelled

In testimony whereof, I hereby sign this

Certificate of Business Name Registration

and issue the same on 30 November 2021 in the Philippines.

RAMON M. LOPEZ
Secretary

Business Name No. 3341509

This certificate is not a license to engage in any kind of business and valid only at the scope indicated herein.

ECFA581512901931

Documentary Stamp Tax Paid Php 30.00

Figure 6.5. Business Permit of Datu Shop

6.3 Minutes of Meetings with Client

Tigre Tech

Meeting Minutes

October 5, 2023

Date and Time:

October 5, 2023

Members:

- Shaun Padrejuan
- Fabian Salvador
- Nigel Sebastian
- Lex Lorenzo
- Nathanael Abrigo
- Joshua Entrata
- Angelo Dela Paz

Guest:

Mr. Alexies Aries Datu, owner of Datu Shop

Agenda:

- **Quick rundown of Software Engineering curriculum and schedule.**
- **Initial interview on Business Process and Business Model**
- **Manual Ledger on Stocks, increased focus on manual checking of low stocks**
- **Increased emphasis on easy UI and easy stocks manipulation**
- **No apparent problems on customers in terms of service**
- **Mention of possible web page service**
- **Discussion on owner's working time for site visits**

Padrejuan, Shaun Kristoffer C.
Scribe

Alexies Aries Datu
Shop admin / Interviewee

Tigre Tech

Meeting Minutes

October 25, 2023

Date and Time:

October 25, 2023 at 8:30 pm

Members:

- Shaun Padrejuan
- Fabian Salvador
- Nigel Sebastian
- Lex Lorenzo
- Nathanael Abrigo

Guest:

Mr. Alexies Aries Datu, owner of Datu Shop

Agenda:

- **Features of the system**
- **Suggestion of other Features such as Low Supply Alert**
- **Explanation that the system will be on a web page**
- **Discussion about the business processes (Returning, Selling, etc.)**

Salvador, Fabian III R.
Scribe

Alexies Aries Datu
Shop owner / Interviewee