

Developing and Implementing a Customized Inventory Management System for MarkScents

SYSTEMS ENVIRONMENT

Locale of the Study

Research locale refers to the specific geographical area or location where research is conducted. It involves studying and analyzing the social, economic, or environmental conditions of a particular place or region



Figure 1: Location of Mark Scents

In Figure 1, MarkScents, a business owned by Mark John Guda, is depicted. It is situated in Brgy. Zone 1, Sta. Fe, Leyte. Sta. Fe refers to the specific location within Leyte where MarkScents is located, providing geographical context. Brgy. Zone 1 further

specifies the barangay (village) in Sta. Fe, offering additional details about the precise location of MarkScents within the region.

Population of the Study

The study population is the entire unit of people you consider for your research. A sample is a subset of this group that represents the population.

Admin/Owner. Who holds a central leadership role and plays a pivotal part in decision-making and strategic direction for MarkScents.

Employee/Staff. They are also responsible for inputting customer information and various tasks related to developing and implementing the inventory management system.

Organizational Chart

An organizational chart graphically represents an organization's structure, highlighting the different jobs, departments, and responsibilities that connect the company's employees to each other and to the management team.

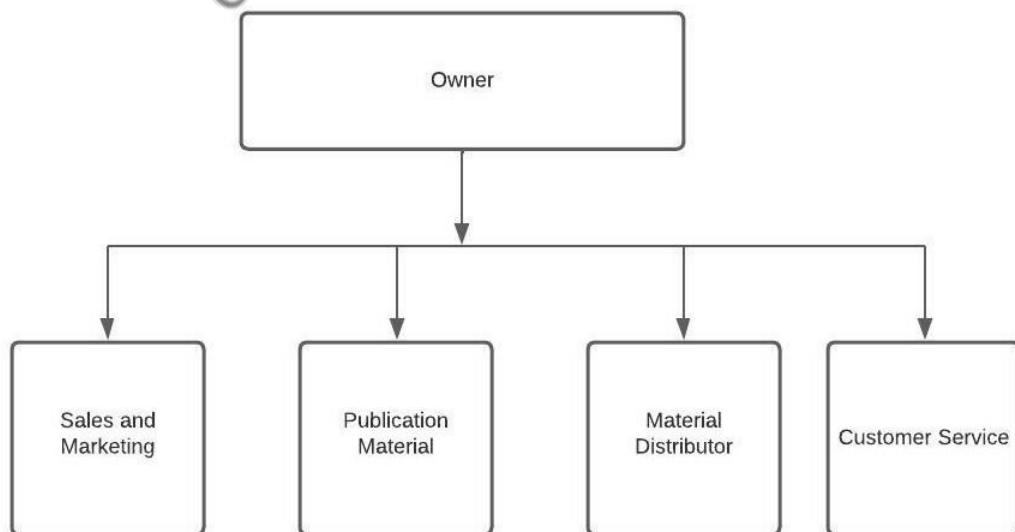


Figure 2: Mark Scents Organizational Chart

Within MarkScents, Figure 2 outlines the organizational structure with the Owner, who holds a central leadership role and plays a pivotal part in decision-making and strategic direction. Responsibilities are distributed among the Sales and Marketing, Publication Material, Material Distributor and Customer Service. This framework emphasizes the interdependence of roles and responsibilities, promoting a seamless and effective operation within the business.

FEASIBILITY ASSESSMENT

A feasibility study is a detailed analysis that considers all of the critical aspects of a proposed project in order to determine the likelihood of it succeeding (THE INVESTOPEDIA TEAM, 2023).

Operational Feasibility

Operational feasibility assesses how well a proposed plan fits within the existing business environment, and if developed, whether current purchasers will use it (Law Insider, n.d.).

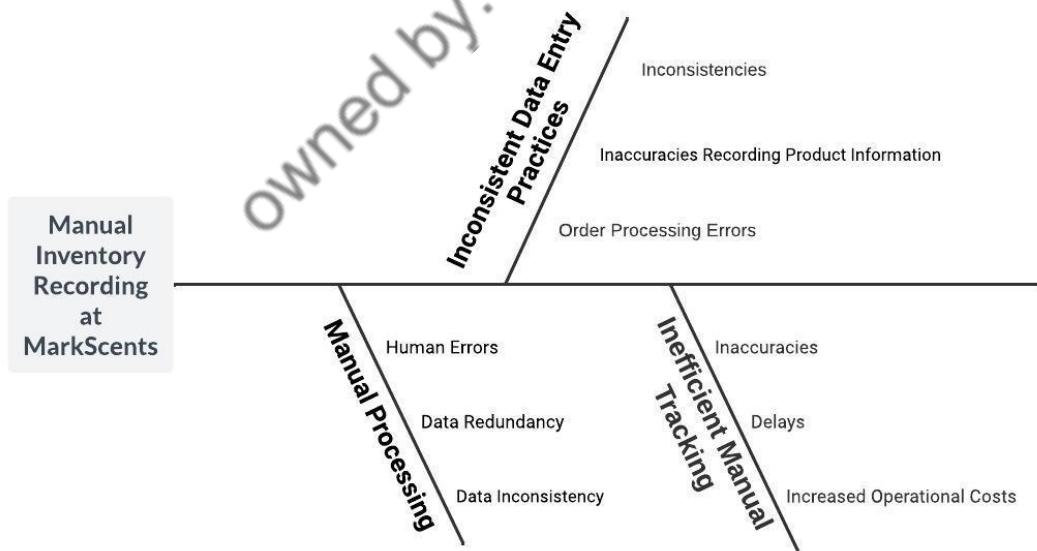


Figure 3: Fishbone of Mark Scents Manual Inventory Recording

Figure 3 illustrates the challenges in manual inventory recording at MarkScents that the developing and implementing system aims to solve. It shows three key issues and their

respective root causes, which could stem from factors such as inadequate inventory management, software issues, and budget constraints. To tackle this issue, it is crucial to contemplate specific actions.

Functional Decomposition Diagram

According to Hayes (2021), a functional decomposition diagram contains the whole function or project along with all of the necessary sub-tasks needed to complete it.

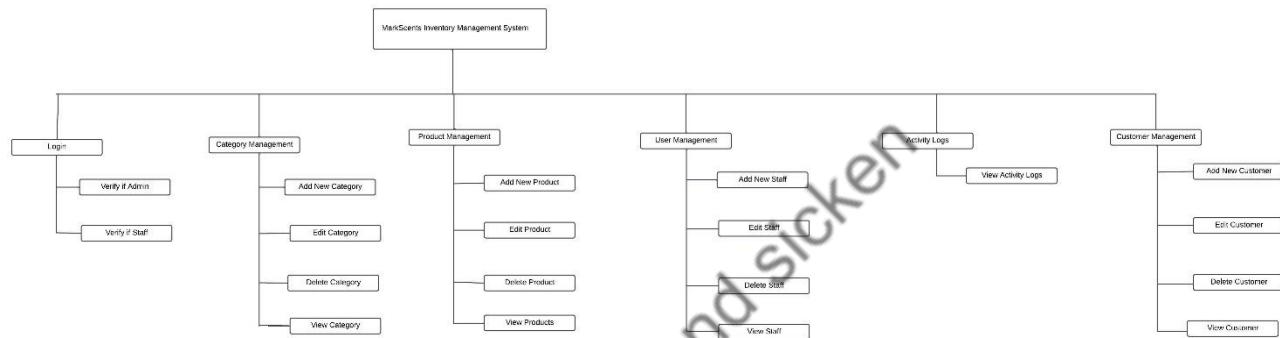


Figure 4: Functional Decomposition Diagram of MarkScents Manual Inventory Recording

The Functional Decomposition Diagram dissects the comprehensive functionality of an Inventory Management System into distinct and manageable functions. In the MarkScents context, this diagram illustrates the hierarchical arrangement of tasks and processes integral to inventory management. It offers a structured overview, showcasing how various functions collaborate seamlessly in handling inventory efficiently—from monitoring stock and generating reports. Each tier of decomposition delves into intricate details of functions, fostering a thorough comprehension of the system's operational framework.

Technical Feasibility

Technical feasibility evaluates the technical complexity of the expert system and often involves determining whether the expert system can be implemented with state-of-the-art techniques and tools (Computer Aided Chemical Engineering, 2018).

Software Compatibility

Areas	Minimum Specifications	Recommended Specifications
Operating System	Microsoft Windows 7	Microsoft Windows 11
Web Browser	Google Chrome, Firefox, Microsoft Edge	Google Chrome, Firefox, Microsoft Edge
Text Editor	Visual Code, Sublime, Notepad++	Visual Code, Sublime, Notepad++

*Table 1.1: Software Specification of Developing and Implementing a Customized Inventory Management System
Mark Scents*

In Table 1.1, the system is reliant on its software components for functionality. The table provides a comprehensive list of necessary software requirements essential for the proposed method to operate effectively. The system was able to meet the minimum specifications required for utilization, and the recommended specifications provided enhanced usability.

Hardware Compatibility

Areas	Minimum Specifications	Recommended Specifications
CPU	Intel i3 1.6GHz Dual Core	Intel i7 2.77GHz Quad-Core
RAM	4gb	8gb
Internet	3Mbps	5Mbps
HDD/SDD	300gb	500gb
Monitor Size	1366x768	1920x1080

*Table 1.2: Hardware Specification of Developing and Implementing a Customized Inventory Management System
Mark Scents*

In Table 1.2, the hardware plays a crucial role in ensuring the system's functionality. The table presents an exhaustive compilation of essential hardware requirements that are imperative for the optimal operation of the proposed method. The system successfully satisfies the minimum specifications necessary for utilization, while adhering to the recommended specifications significantly improves usability.

Schedule Feasibility

This assessment is the most important for project success; after all, a project will fail if not completed on time. In scheduling feasibility, an organization estimates how much time the project will take to complete (Simplelearn, 2023).

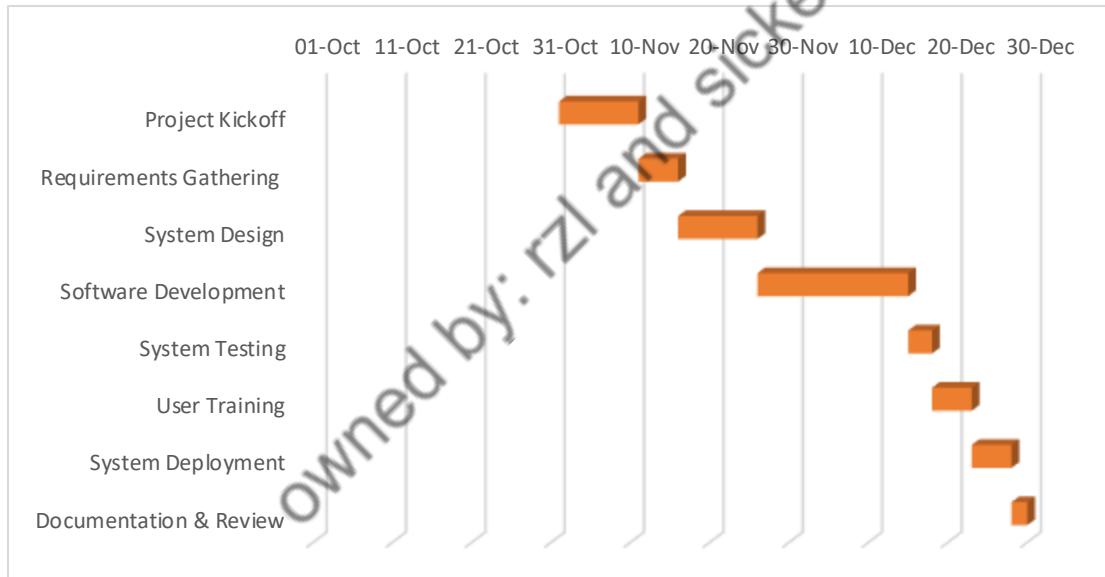


Figure 5: MarkScents' System Schedule

In Figure 5, the Gantt chart meticulously delineates the chronological progression of MarkScents' Inventory Management System, encompassing crucial milestones such as project kickoff, requirements gathering, design, development, testing, training, and the subsequent deployment and implementation phases.

Economic Feasibility

Economic feasibility refers to the ability of a project or business venture to generate enough revenue to cover its costs and provide a reasonable return on investment. It involves analyzing the costs and benefits of a project, including the costs of materials, labor, and equipment, as well as the projected revenue from sales or other sources of income (CEOpedia, 2023).

Cost-Benefits Analysis

A cost-benefit analysis is a systematic process that businesses use to analyze which decisions to make and which to forgo. The cost-benefit analyst sums the potential rewards expected from a situation or action and then subtracts the total costs associated with taking that action (Hayes, 2023).

ESTIMATED MONTHLY COST/CURRENT

Materials	Description	Amount
Inventory Sheets or Form	Inventory sheets to record item details.	₱ 100.00(1 pad)
Pens, Pencils, and Markers	Ensure you have an ample supply of writing instruments for recording information on inventory sheets.	₱ 150.00(10pcs.)
Clipboards or Writing Surface	Provide sturdy clipboards or other writing surfaces to make it easier for staff to record inventory data while moving around the storage area.	₱ 200.00

Calculators	Have calculators on hand for performing quick calculations, especially if quantities are large or involve complex math.	₱ 1000.00
Storage Bins or Containers	Use bins or containers to organize items physically, making it easier to count and record during the inventory process.	₱ 250.00
Total		₱ 1,700.00

Table 2.1: Estimated Monthly Cost/Current of Mark Scents

ESTIMATED MONTHLY COST/PROPOSED

Materials	Amount
Inventory Sheets or Form	₱ 100.00(1 pad)
Pens, Pencils, and Markers	₱ 150.00(10pcs.)
Calculators	₱ 1000.00
TOTAL	₱ 1250.00

Table 2.2: Estimated Monthly Cost/Proposed of Mark Scents

Estimated Difference (ED): Current Costing – Proposed Costing

$$ED = ₱ 1,700.00 - ₱ 1,250.00$$

$$ED = \text{P} 450.00$$

Estimated Investment (EI) is the Total Proposed Costing

$$EI = \text{P} 2,900.00$$

Gains (G): $ED * 12 \text{ Months}$

$$G = \text{P} 450.00 * 12$$

$$G = \text{P} 5,400.00$$

Return on Investment (ROI)

$$ROI = \frac{\text{Gains} - \text{Investment Cost}}{\text{Investment Cost}}$$

$$ROI = \frac{\text{Gains} - \text{Investment Cost}}{\text{Investment Cost}} = \frac{5,740.00 - 2,900.00}{2,900.00}$$

$$ROI = 0.97$$

$$ROI = 97\%$$

Requirements Modeling

Requirements Modeling is a process of documenting, analyzing, and managing Requirements. Requirements change throughout the project, so it is important to have a way to track them and make sure everyone understands them (ArgonDigital – Requirements Modeling Language, n.d.).

Input. Any information or data sent to a computer for processing is considered input.

1. The input of the system is wherein the login credentials will be intake securely.
2. The system will gather details regarding products and their respective quantities.

Process. The completion of work involves a series of interconnected steps and decisions.

1. The system will carefully verify login credentials, differentiating between administrators and staff users.
2. After validation, the system will promptly handle incoming product data, guaranteeing precise and timely updates to the inventory.
3. The system will keep detailed records of updates or modifications, guaranteeing a comprehensive log for accountability purposes.

Output. Any information processed by and sent from a computer or electronic device is considered output.

1. The system will produce a thorough inventory report that captures the latest updates.
2. The system will display logs reserved solely for the administrator's access.

Performance. It is the accomplishment of the performed action. It's one way to see and express how effective and successful a particular process.

1. Effective security measures will ensure the protection of sensitive data, preventing unauthorized access.
2. The system operates continuously, around the clock.
3. Convenient and straightforward retrieval of data or information regarding the events.

Control. A mechanism employed to oversee or direct the functioning of a machine, apparatus, or system.

1. The system is only accessible to the owner/admin and employee/staff.
2. Access levels will be enforced, granting staff permission to view data, edit stock, manage products, and handle customer information. Administrators will have full access.

Data and Process Modeling

According to Nolle (2021), a data flow diagram (DFD) is a graphical or visual representation using a standardized set of symbols and notations to describe a business's operations through data movement.

Context Diagram

According to edrawmax (n.d.), context diagram is a tool popular among Business Analysts who use it to understand the details and boundaries of the system to be designed in a project. It points out the flow of information between the system and external components.

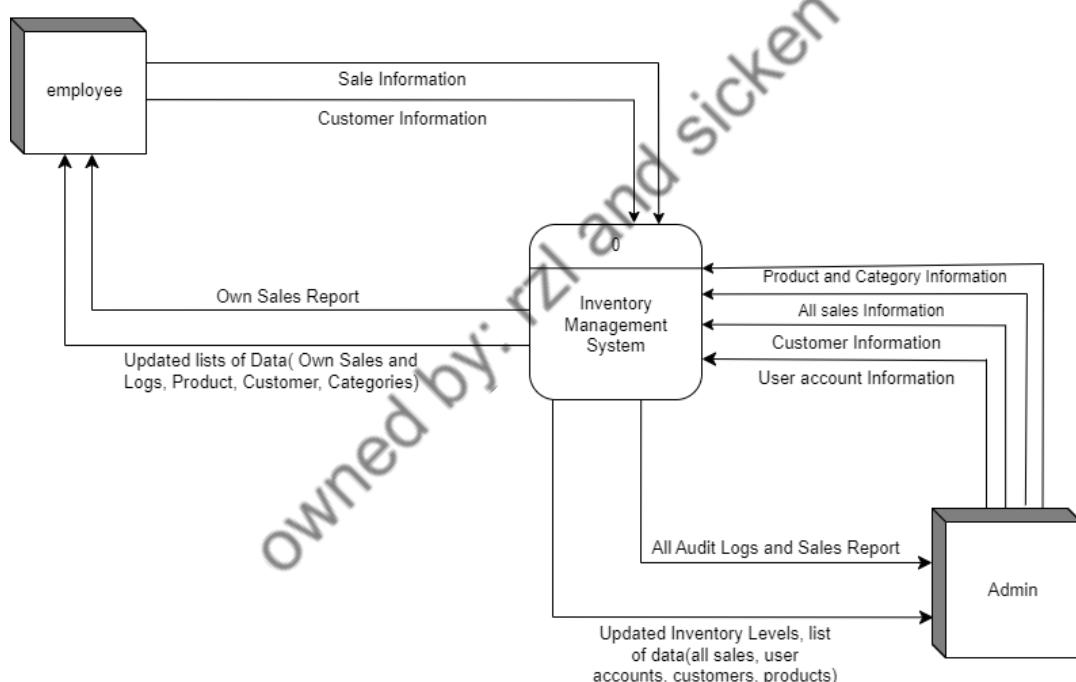


Figure 6: Context Diagram of Mark Scents Inventory Management System

The context diagram delineates the interplay between external entities Employee and Admin of the MarkScents Inventory Management System (IMS). The image shows the data flow of the system. The employee interacts with the system through the Sale Information and Customer Information blocks. They can view information in the Product and Category Information block, but they cannot edit it. They can also generate their own sales reports in the Own Sales Report block.

The Admin user has full access to the system and can view and edit all data. The data that flows through the system is used to track inventory levels, sales, and customers. This information is essential for the smooth operation of the IMS.

Data Flow Diagram

A data flow diagram (DFD) maps out the flow of information for any process or system (Lucidchart, n.d.).

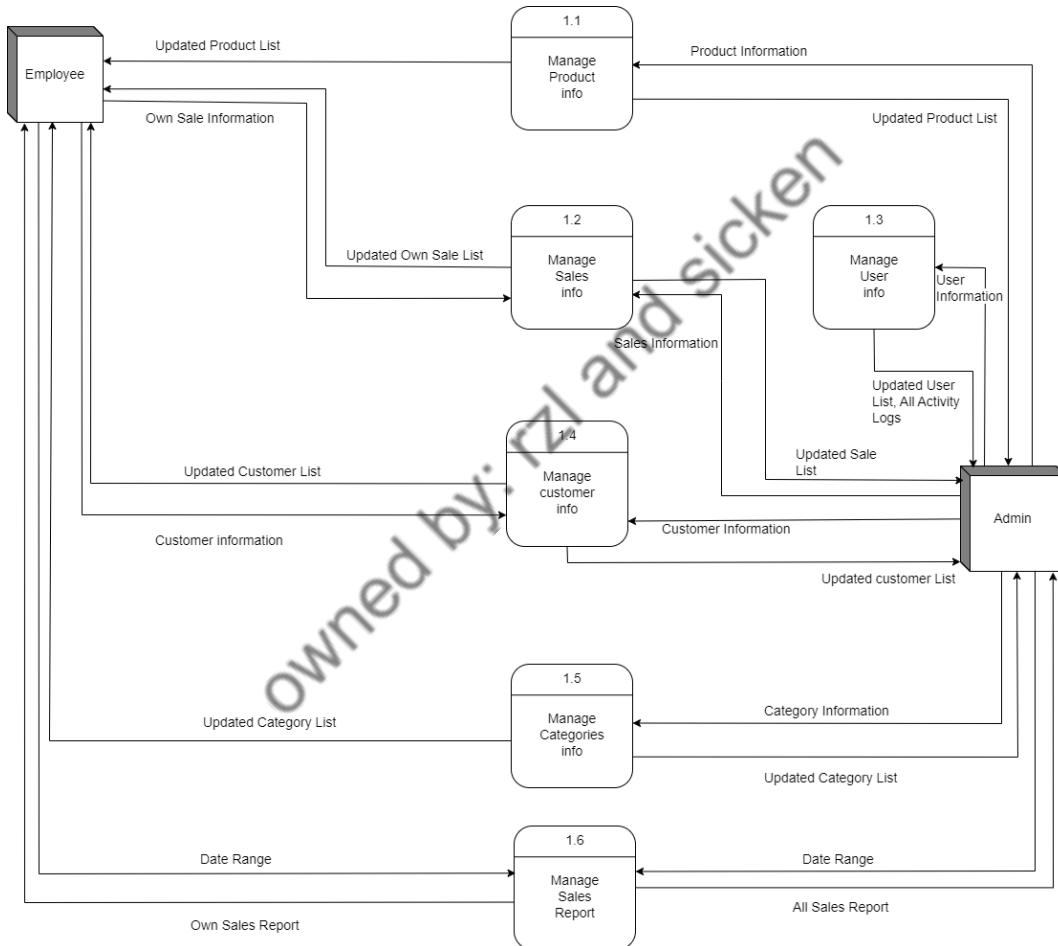


Figure 7: Data Flow Diagram of Mark Scents Inventory Management System

MarkScents takes inventory management to the next level with a seamless flow of data through interconnected sections. Employees effortlessly maintain an accurate inventory by inputting and modifying customer details in the Customer Information, visualized by the block and its data exchanges. The Own Sale List empowers them to manage sales,

keep customer information up-to-date, and maintain user records, all linked by arrows depicting the interconnectedness. Adding new customers, updating data, and tracking sales is a breeze with the Updated Customer List. The Updated Category List shines with its flexibility, allowing employees to be aware of product categories with ease. This interconnected list of data, showcased by the diagram's arrows, guarantees a cohesive and well-managed inventory system, where actions in one section ripple through the entire system, ensuring MarkScents thrives.

Behind the scenes, the Administrator holds the reins, overseeing the MarkScents system with a watchful eye. From the User Information block, they effortlessly grant and manage access, ensuring data security is paramount. The Updated Product List and Updated Category List heed their edits, shaping the very landscape of the inventory. Even customer and sales data find their way to the Administrator's discerning gaze in the Customer Information and Sales Information blocks, allowing them to monitor performance and fine-tune processes like a skilled conductor. This dedicated Administrator Console, represented by a distinct block in the diagram, acts as the central command center, ensuring the entire inventory management system operates with seamless efficiency.

System Flowchart

According to edrawmax (n.d.), a system flowchart shows the path taken by data in a system and the decisions made during different levels. Different symbols are strung together to show data flow, including what happens to data and where it goes.

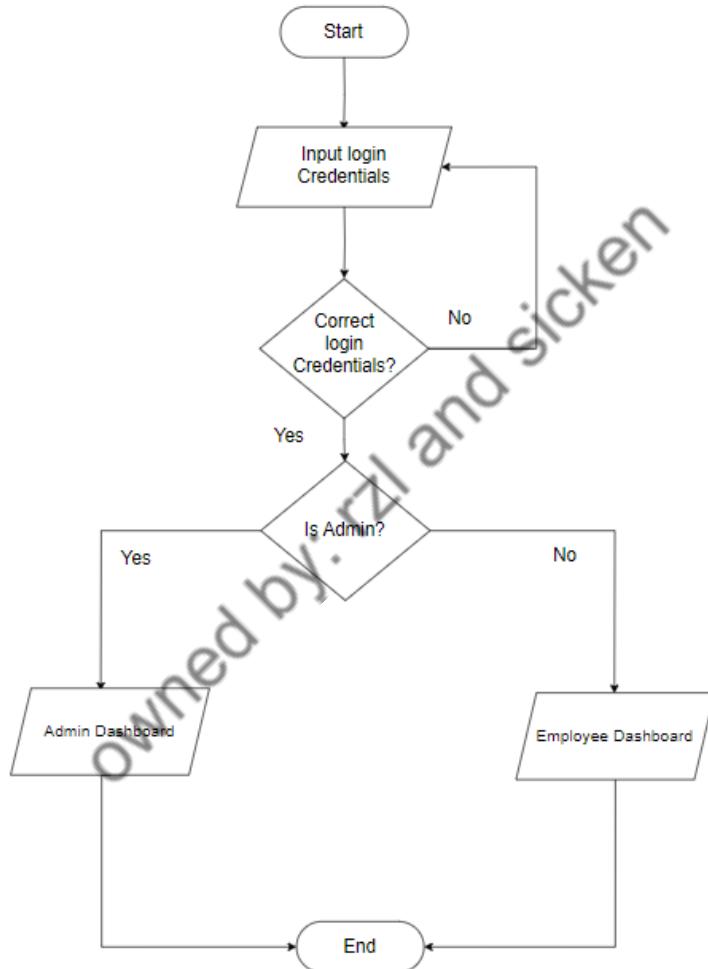


Figure 8.1: Login Flowchart of MarkScents Inventory Management System

Logging into a system starts with users entering their username and password. The system then compares these credentials with those stored securely in its database. If they match, the user successfully logs in and proceeds further. If not, an error message prompts them to try again. Upon successful login, the system checks if the user is an

administrator. If so, they are directed away to the admin dashboard with its specialized tools. Otherwise, regular users land on the employee dashboard, ready to tackle their daily tasks. This streamlined process ensures secure access and smooth navigation within the system for all users.

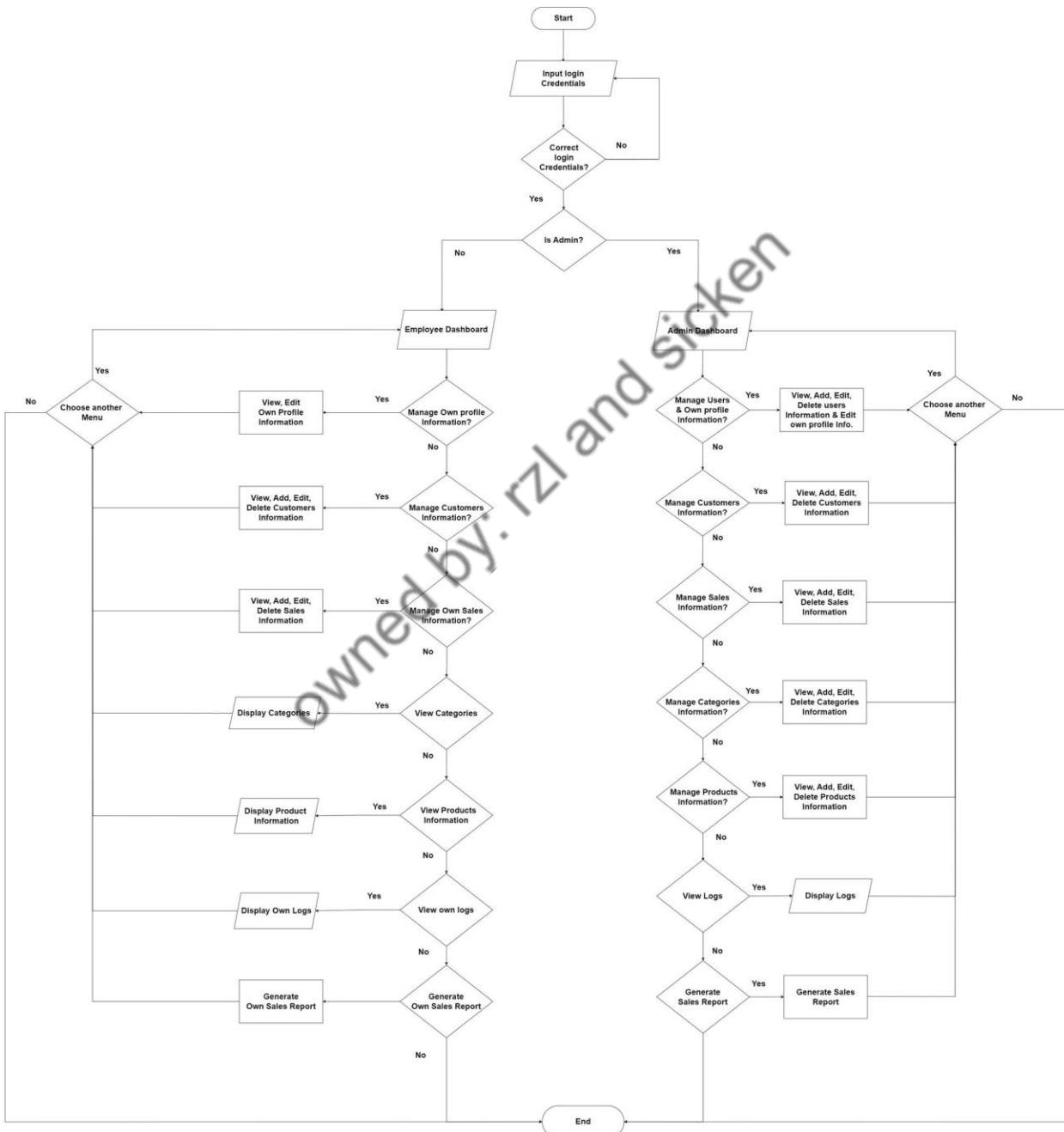


Figure 8.2: Flowchart of Mark Scents Inventory Management System

The employee flow within the system involves a sequence where, upon user identification as an employee, the process directs them to the employee dashboard. Within this dashboard, employees can execute various actions, including adding, editing, deleting, and viewing customer information, sales data, and their own profile information. They are also granted the ability to view product categories and product information without editing privileges, access their personal activity log, and generate individual sales reports. Conversely, the admin flow initiates when the user is identified as an administrator, leading them to the admin dashboard. In this broader access level, administrators can perform more extensive actions, such as adding, editing, deleting, and viewing all functions (customers, sales, products, categories and users), as well as managing user accounts. Admins can also view and edit their own profile information and generate both admin and employee sales reports. The delineation between employee and admin flows ensures appropriate access and functionality based on user roles within the system.

Object Modeling

An object model helps describe or define a software/system in terms of objects and classes. It defines the interfaces or interactions between different models, inheritance, encapsulation and other object-oriented interfaces and features (Rouse, M., 2013).

Use-Case Diagram

According to visual-paradigm(n.d.), use case diagram is the primary form of system/software requirements for a new software program underdeveloped. Use cases specify the expected behavior (what), and not the exact method of making it happen (how). Use cases once specified can be denoted both textual and visual representation (i.e. use case diagram).

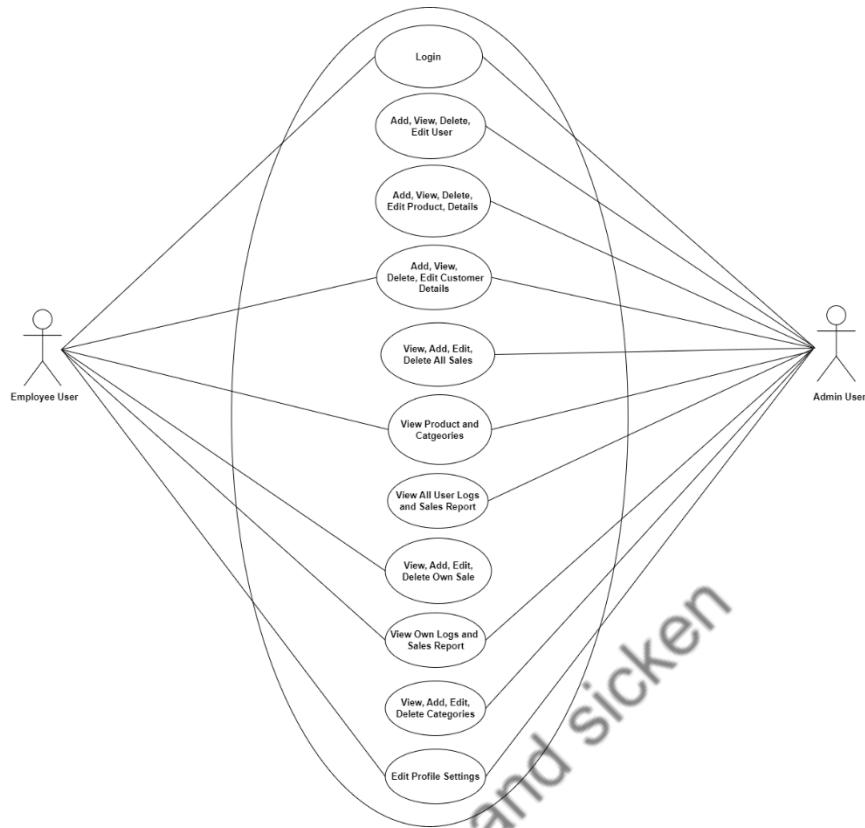


Figure 9: Use-Case Diagram of MarkScents Inventory Management System

Within the intricate framework of the system, employees adeptly handle their daily responsibilities, encompassing the addition, viewing, editing, and deletion of customer and sales details. Yet, the administrative role takes center stage, holding authority in tasks like adding and managing users, overseeing all activities through meticulous logs, and shaping the system's fundamental structure by adding and refining product categories. Both employees and administrators enjoy the autonomy to personalize their settings, curating a workspace tailored to their preferences within this dynamic digital realm. This intricate dance of roles and functionalities is vividly encapsulated in the use case diagram, a crucial navigational map that unveils the inner workings of the system. As illustrated in the diagram, employees navigate tasks such as customer and sales management, viewing activity logs, and generating individual sales reports. On the other hand, administrators exercise broader control, extending to all system functions like users, customers, products, categories, and sales, along with the ability to generate both admin and employee sales reports. This use case diagram serves as an essential guide,

mapping out the seamless orchestration of user roles and functionalities within the system.

SYSTEMS DESIGN

System design is the process of designing the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system (what-is-system-design-and-why-it-is-necessary,n.d.).

Output and User-Interface Design

User interface (UI) design is the process designers use to build interfaces in software or computerized devices, focusing on looks or style. Designers aim to create interfaces which users find easy to use and pleasurable. UI design refers to graphical user interfaces and other forms—e.g., voice-controlled interfaces (Interaction Design Foundation – IxDF, 2016).

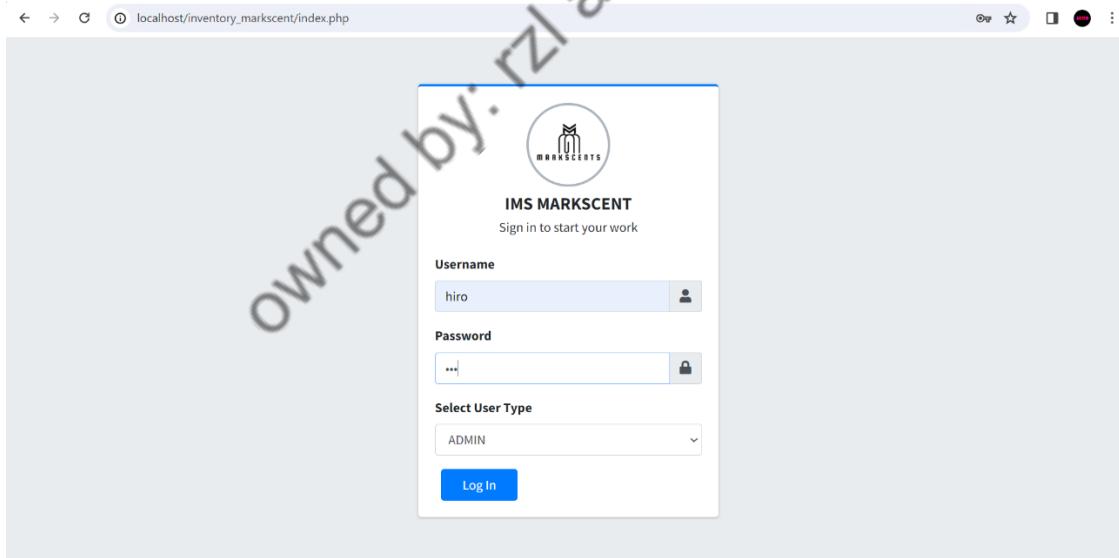


Figure 10.1: Login Form of MarkScents Inventory Management System

The login function in an inventory management system serves as a crucial security measure and access control mechanism. It is designed to authenticate and authorize users, ensuring that only authorized personnel have access to sensitive inventory-related information and functionalities.

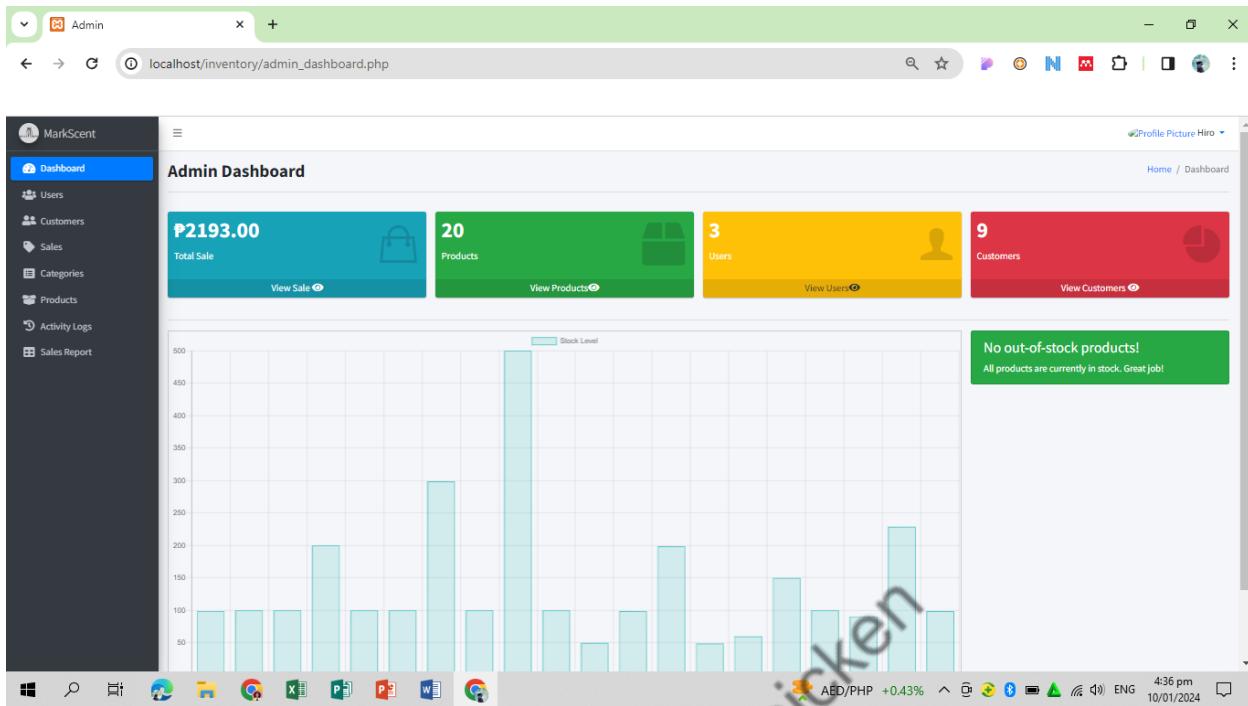


Figure 10.2: Dashboard of Mark Scents Inventory Management System

It contains a variety of information, such as the number of products in stock, total of sale, users and customers, including the activity logs. The dashboard is a valuable tool for MarkScents to track its inventory and sales performance. It can help the company to identify areas where it can improve its inventory management, such as by reducing stock levels of slow-moving items or increasing stock levels of popular items.

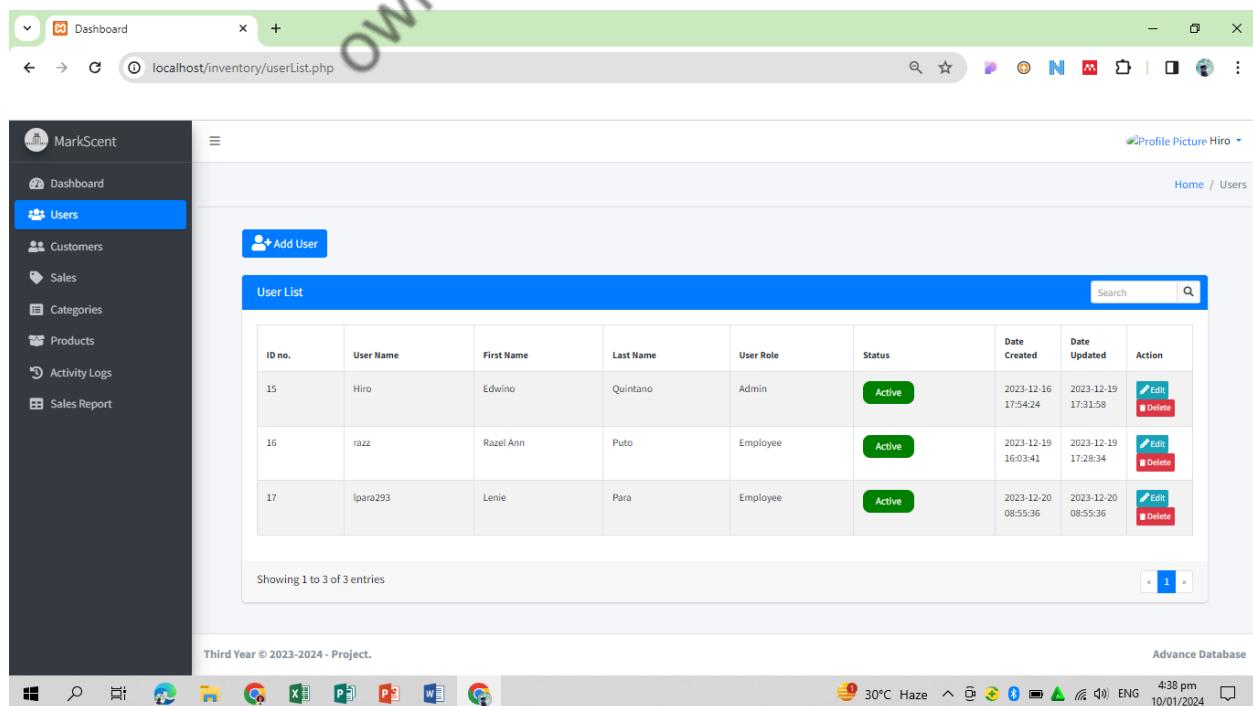


Figure 10.3: Users List of Mark Scents Inventory Management System

It shows a list of all users who have access to the system, including their names, roles, and last login dates. This can help the company to identify any potential security risks or to troubleshoot any problems that users may be experiencing.

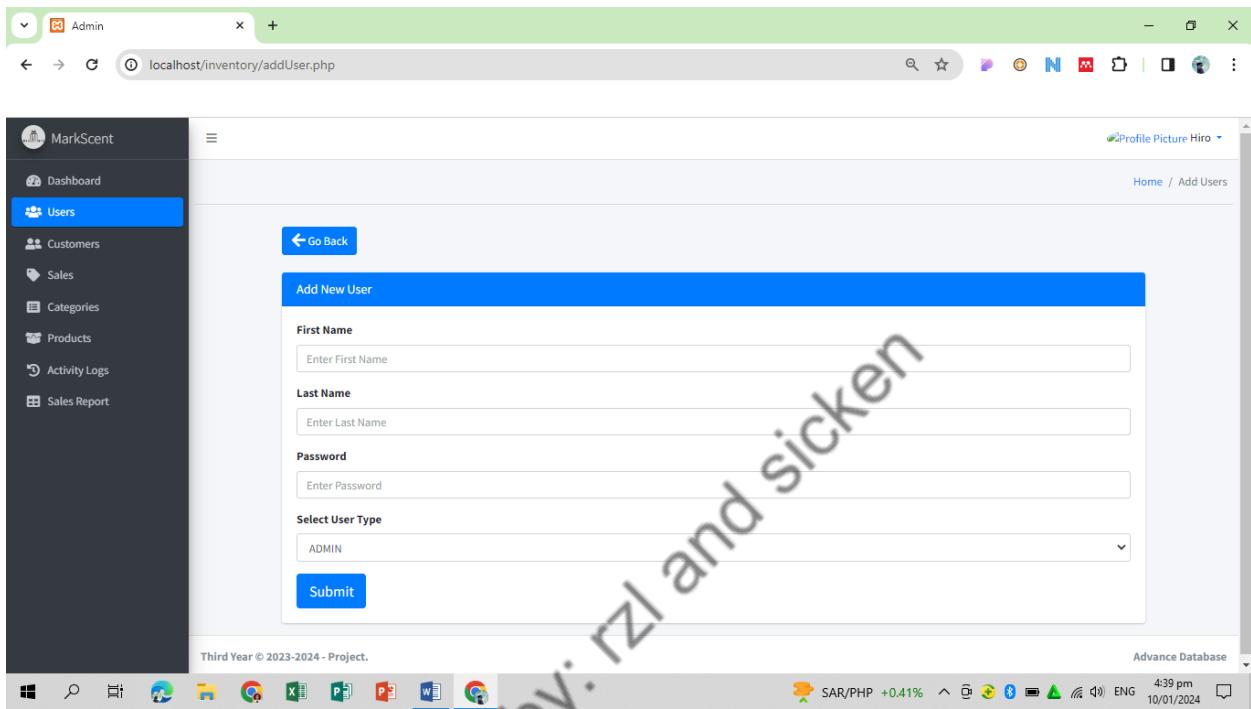


Figure 10.4: Add New Users of Mark Scents Inventory Management System

It allows users to add new users to the system and specify their roles and permissions. This page is important for MarkScents to manage access to its inventory management system. By carefully controlling who has access to the system and what they can do, MarkScents can protect its sensitive data and prevent unauthorized changes.

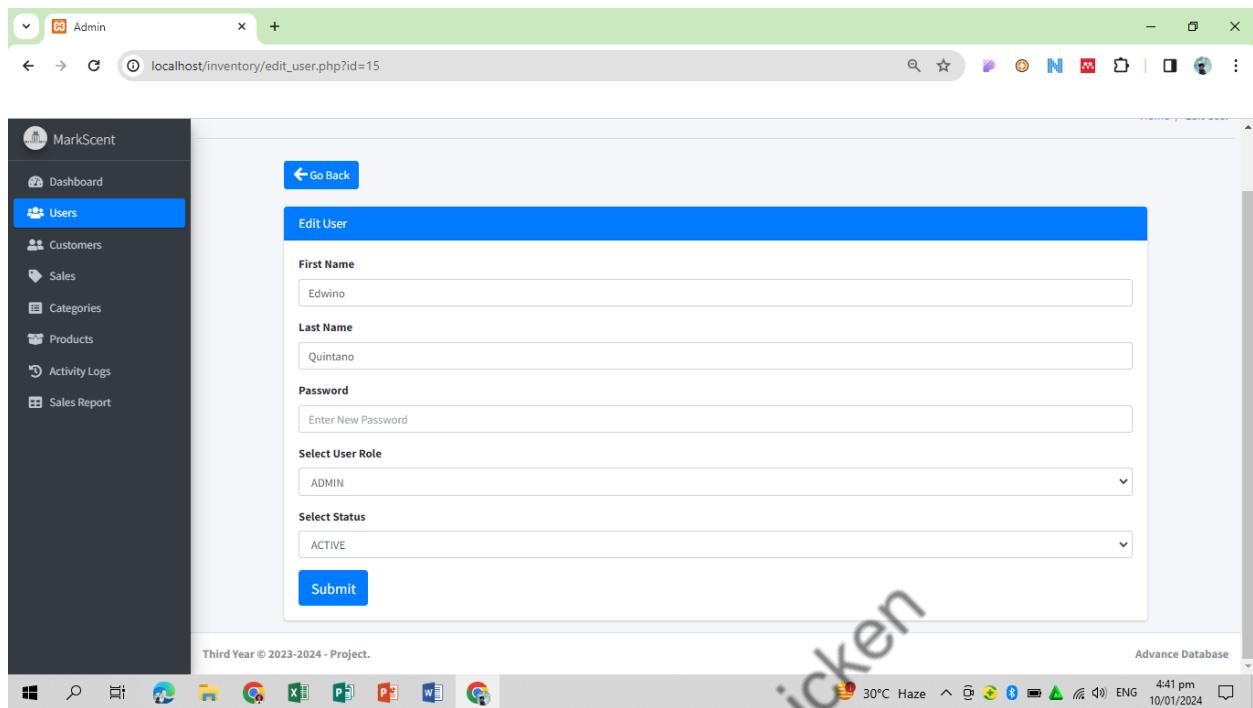


Figure 10.5: Edit User of MarkScents Inventory Management System

The "Edit User" screen lets you modify user details. You can change first and last names, set a new password, assign "ADMIN" or "USER" roles, and activate or deactivate accounts ("ACTIVE" and "INACTIVE" statuses).

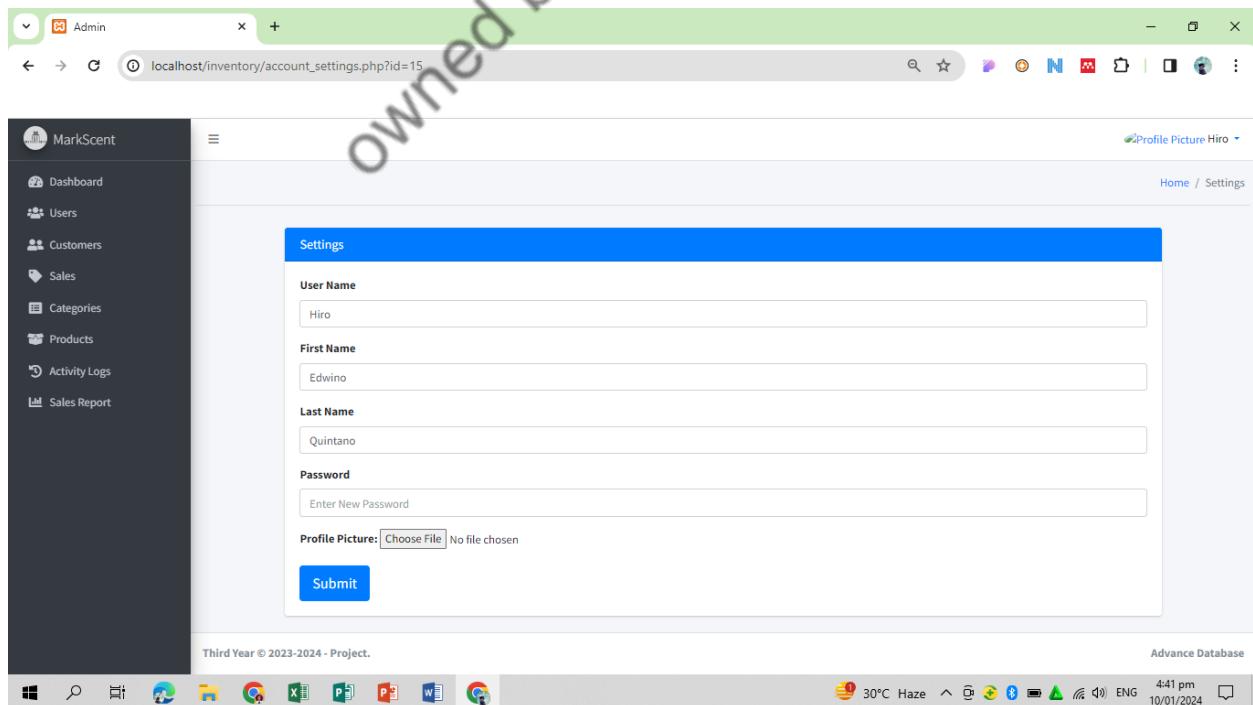


Figure 10.6: User Settings of MarkScents Inventory Management System

User settings in an inventory system refer to the configurable parameters and preferences that individual users can adjust to personalize their experience and optimize the system to meet their specific needs. These settings are essential for tailoring the user interface, permissions, and other aspects of the inventory management system to accommodate different roles, preferences, and workflows.

The screenshot shows a web browser window for 'Admin' on the 'localhost/inventory/customerList.php' page. The left sidebar has a dark theme with 'MarkScents' logo and links: Dashboard, Users, Customers (selected), Sales, Categories, Products, Activity Logs, and Sales Report. The main content area has a blue header 'Customer List' with a search bar. A blue button '+ Add Customer' is at the top right. Below is a table with columns: ID no., Customer Name, Contact Number, Email, Address, Date Created, Date Updated, and Action (Edit and Delete). The table contains 7 rows of customer data. At the bottom are standard browser controls and a status bar showing '442 pm 10/01/2024'.

ID no.	Customer Name	Contact Number	Email	Address	Date Created	Date Updated	Action
1	Lenie	09978653452	leniepara@gmail.com	San Jose, Tacloban	2023-12-19 15:51:05	2023-12-19 15:51:05	Edit Delete
2	Edwin	09978547516	quintana@gmail.com	Mabitib Tanauan Leyte	2023-12-19 15:51:36	2023-12-19 15:51:36	Edit Delete
3	Razel Ann Puto	09976534251	puto@gmail.com	Sata fe	2023-12-19 15:52:27	2023-12-19 15:52:27	Edit Delete
4	Aileen Almoden	09978653651	almoden@gmail.com	Pastrana Leyte	2023-12-19 15:53:16	2023-12-19 15:53:16	Edit Delete
5	Hazel ann	09987365411	hazel@gmail.com	Tacloban	2023-12-19 15:55:14	2023-12-19 15:55:25	Edit Delete
6	Samantha lagado	09876543421	lagado@gmail.com	Dagami	2023-12-19 15:58:13	2023-12-19 15:58:13	Edit Delete
7	Mark Tolentino	09975435261	mark@gmail.com	Palo	2023-12-19 15:59:20	2023-12-19 15:59:20	Edit Delete

Figure 10.7: Customers List of MarkScents Inventory Management System

It shows a list of all customers MarkScents, including their contact information, email and address. This information is valuable for MarkScents to track its customer base and manage its customer relationships.

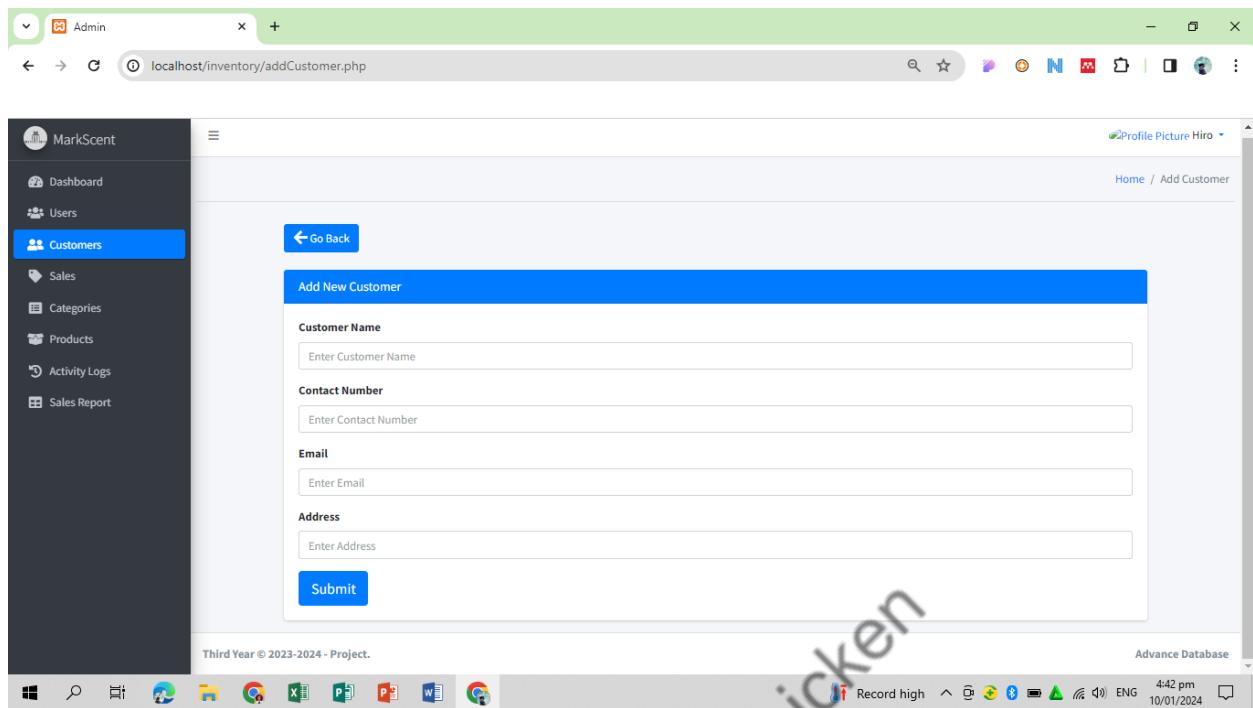


Figure 10.8: Add New Customer of MarkScents Inventory Management System

This page allows users to add new customers to the system and specify their details, such as customer name, contact information, and email. This page is important for MarkScents to manage its customer base and ensure that its customers have a positive experience with the company.

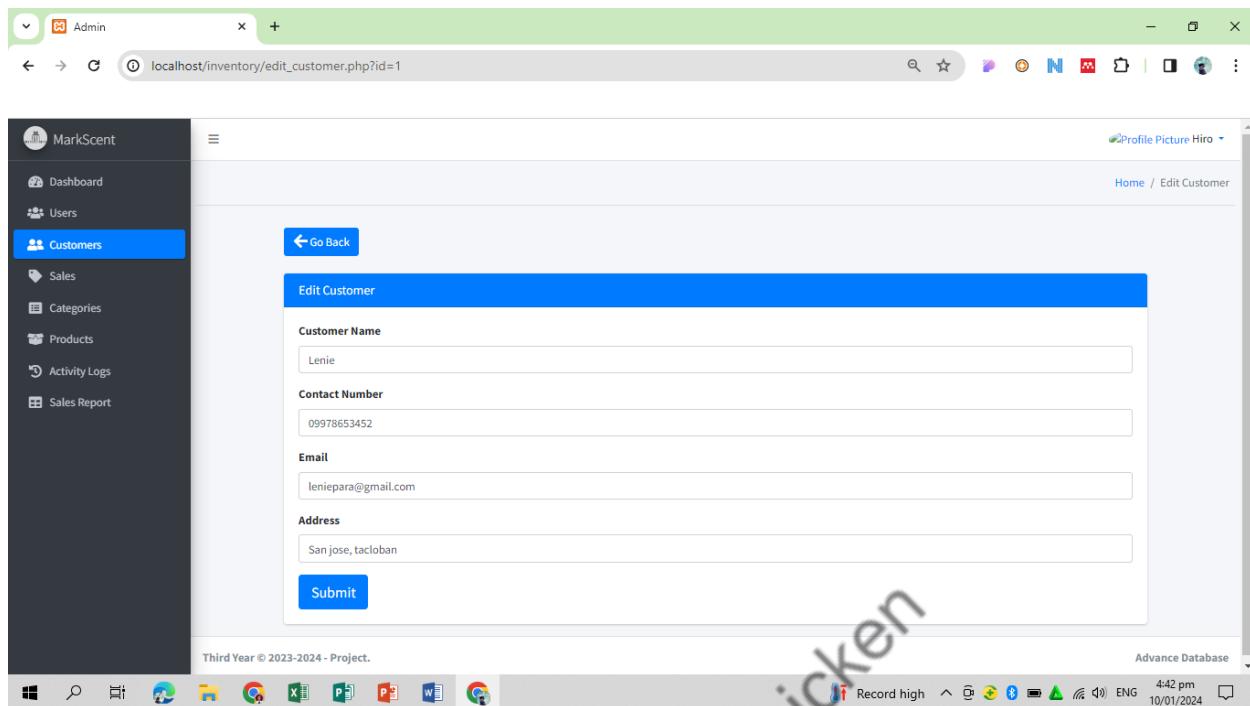


Figure 10.9: Edit Customer of MarkScents Inventory Management System

This page allows users to edit the information of an existing customer, such as their contact information, and address. This page is important for MarkScents to keep its customer information up-to-date and accurate.

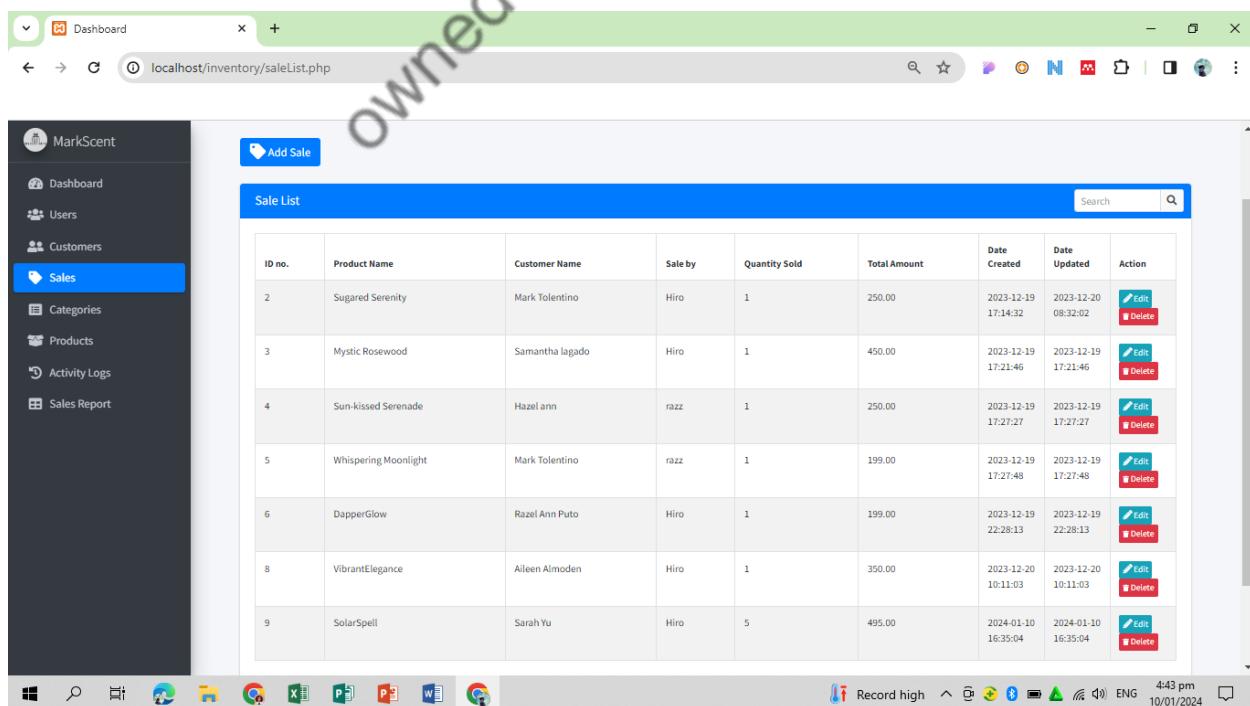


Figure 10.10: Sales List of MarkScents Inventory Management System

The figure shows the product name, customer name, sales by, quantity sold, total amount, and actions that can be taken (Edit and Delete).

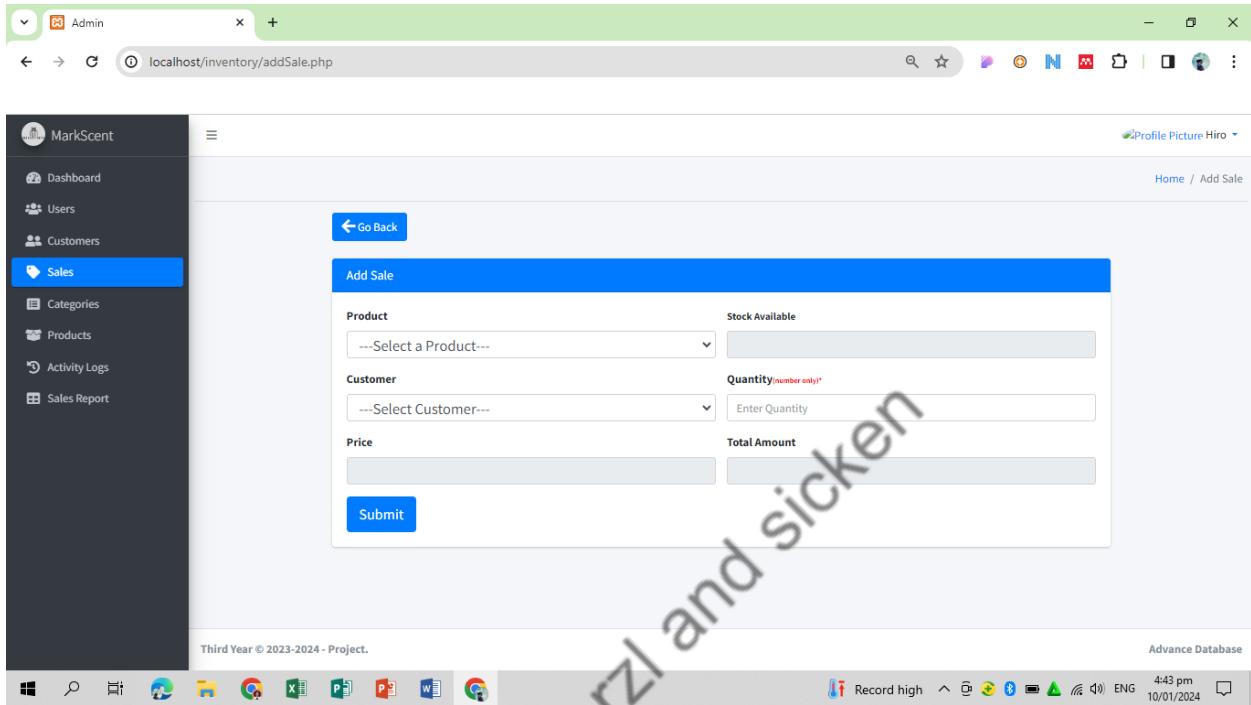


Figure 10.11: Add Sales of MarkScents Inventory Management System

The "Add Sale" section sits prominently, ready to record your total sales. Choose an existing customer or add a new one, then browse the product list.

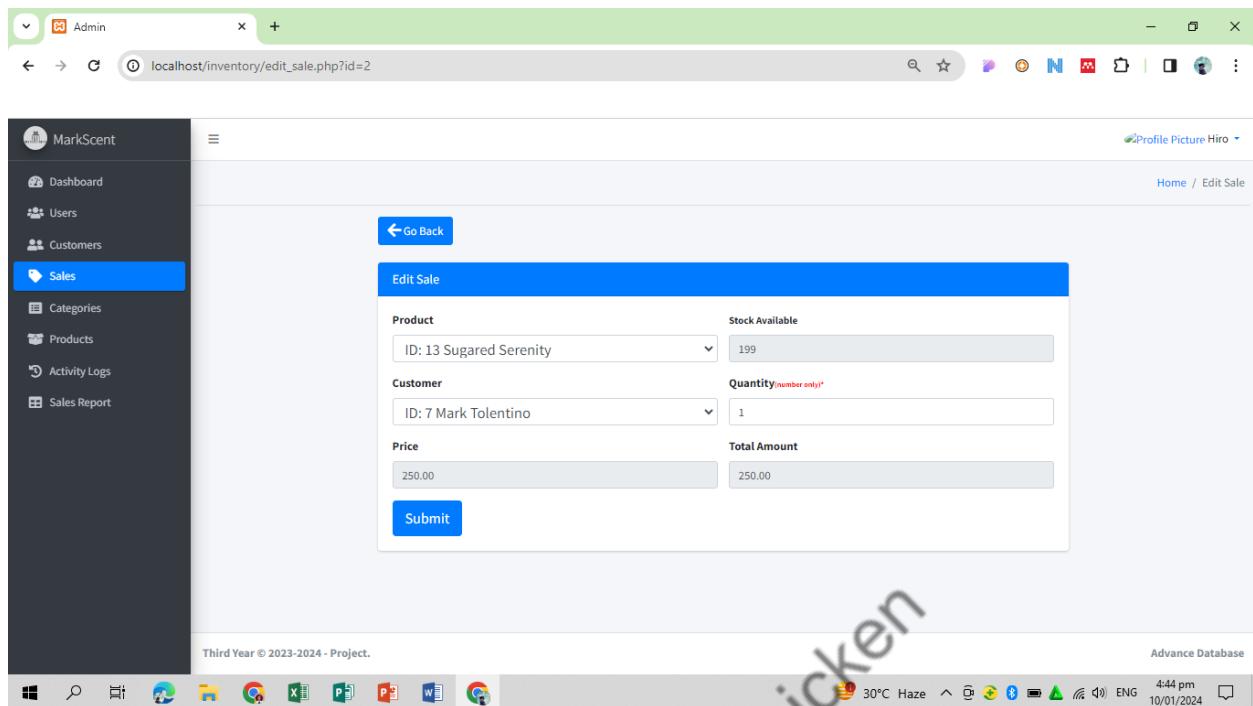


Figure 10.12: Edit Sales of MarkScents Inventory Management System

"Edit Sale" serve as a second chance for your MarkScents shopping spree. See the sale details at a glance, then tweak it to your heart's content. Change quantities, ditch unwanted items, or add last-minute treasures from the product list.

The screenshot shows a web-based inventory management system. On the left is a dark sidebar menu with options: Dashboard, Users, Customers, Sales, Categories (which is selected and highlighted in blue), Products, Activity Logs, and Sales Report. The main content area has a header "Add New Category" on the left and "All Categories" on the right. The "All Categories" section includes a search bar and a table with columns: ID no., Categories, Date Created, Date Updated, and Actions (with Edit and Delete buttons). There are two entries in the table: ID 1 (Female) and ID 2 (Male), both created and updated on 2023-12-19 at 15:13:35. At the bottom of the main content area, it says "Showing 1 to 2 of 2 entries". The footer contains copyright information ("Third Year © 2023-2024 - Project."), a link to "Advance Database", and a system status bar with icons for weather (30°C Haze), battery, signal, and date/time (4:44 pm 10/01/2024).

ID no.	Categories	Date Created	Date Updated	Actions
1	Female	2023-12-19 15:13:35	2023-12-19 15:13:35	Edit Delete
2	Male	2023-12-19 15:13:51	2023-12-19 15:13:51	Edit Delete

Figure 10.13: Category List of MarkScents Inventory Management System

The category section of the dashboard acts as the organizing master key. Each row is a labeled stall, grouping similar items under clear titles. These titles, the category names, tell you what lives within. Unique ID numbers act like shop keep identifiers, keeping everything tidy. Dates mark the creation and updates, ensuring the marketplace evolves smoothly.

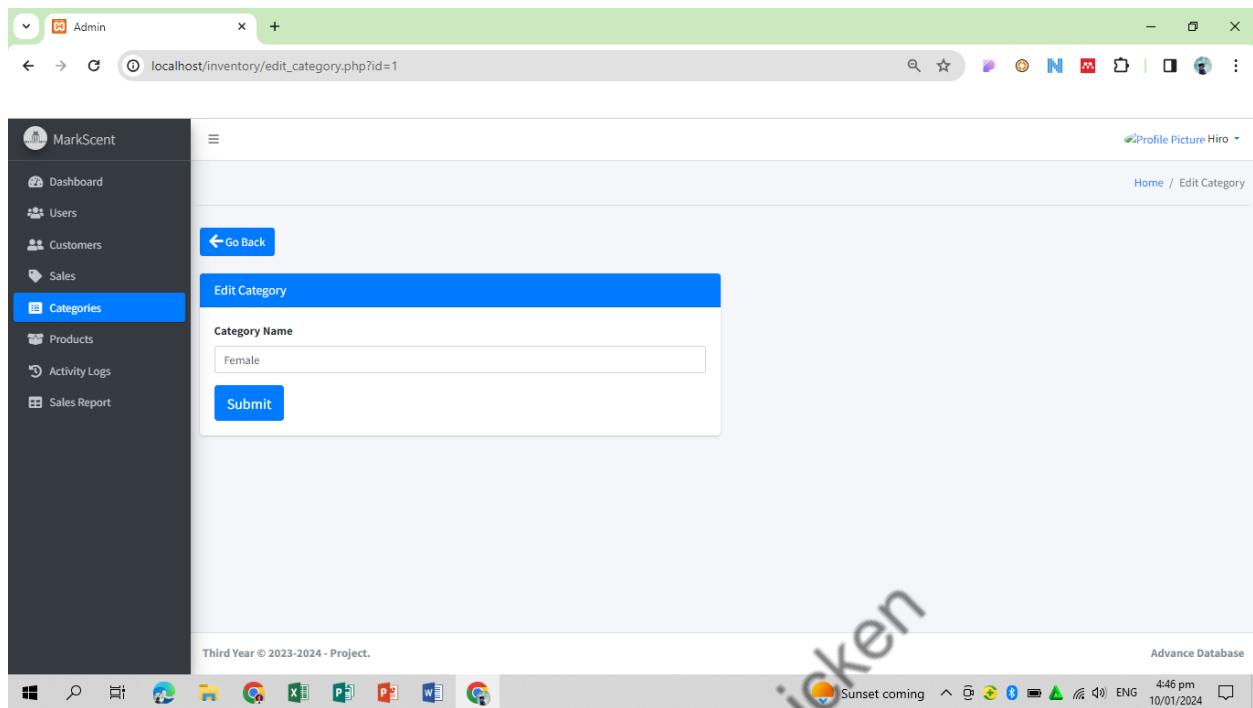


Figure 10.14: Edit Category of MarkScents Inventory Management System

The "Edit Category" screen acts as your alchemist's workshop, allowing user to refine and redefine those categories.

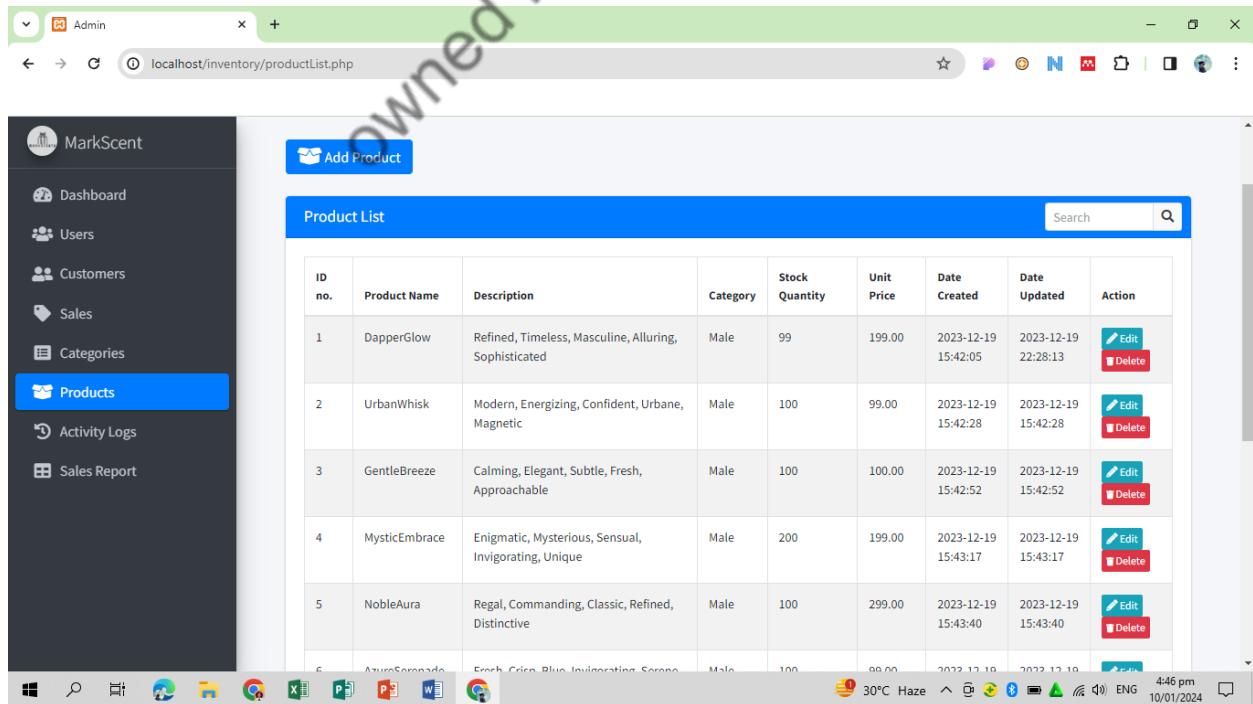


Figure 10.15: Product List of MarkScents Inventory Management System

The product list in an inventory management system is a crucial component that provides a detailed catalog of all the items or products a business holds in its inventory. This list serves as a comprehensive repository of information about each product, management, and organization of inventory.

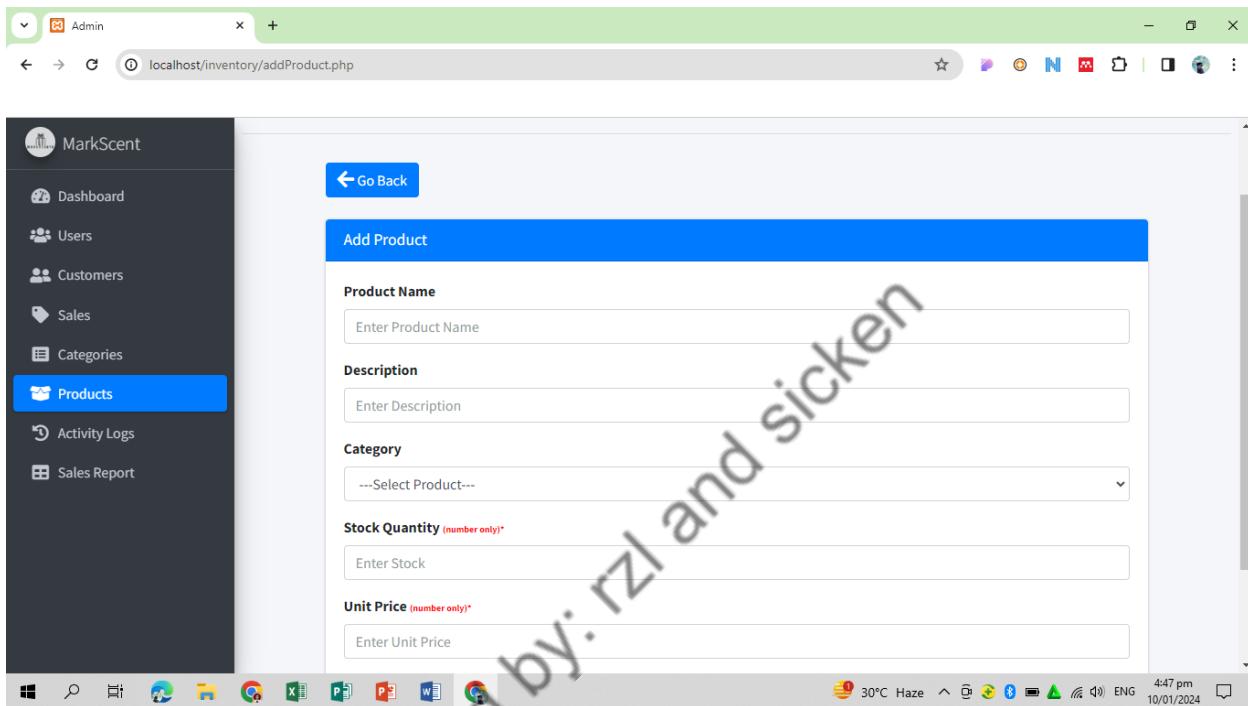


Figure 10.16: Add Product of MarkScents Inventory Management System

In the product management interface, the "Product Name" field serves as the placeholder for entering a succinct and informative name for the product. It is crucial to ensure that the name is both descriptive and clear, facilitating easy comprehension for customers. The "Description" section provides an opportunity for a comprehensive elaboration on the product, allowing the highlighting of its distinctive features and benefits to persuade customers of its value. The "Category" dropdown menu aids in organizing products, enabling customers to navigate and locate items efficiently on the website. Moving on to the "Inventory and Pricing" section, the "Stock Quantity" field is where the user inputs the available units of the product, while the "Unit Price" field is designated for specifying the price per unit of the product.

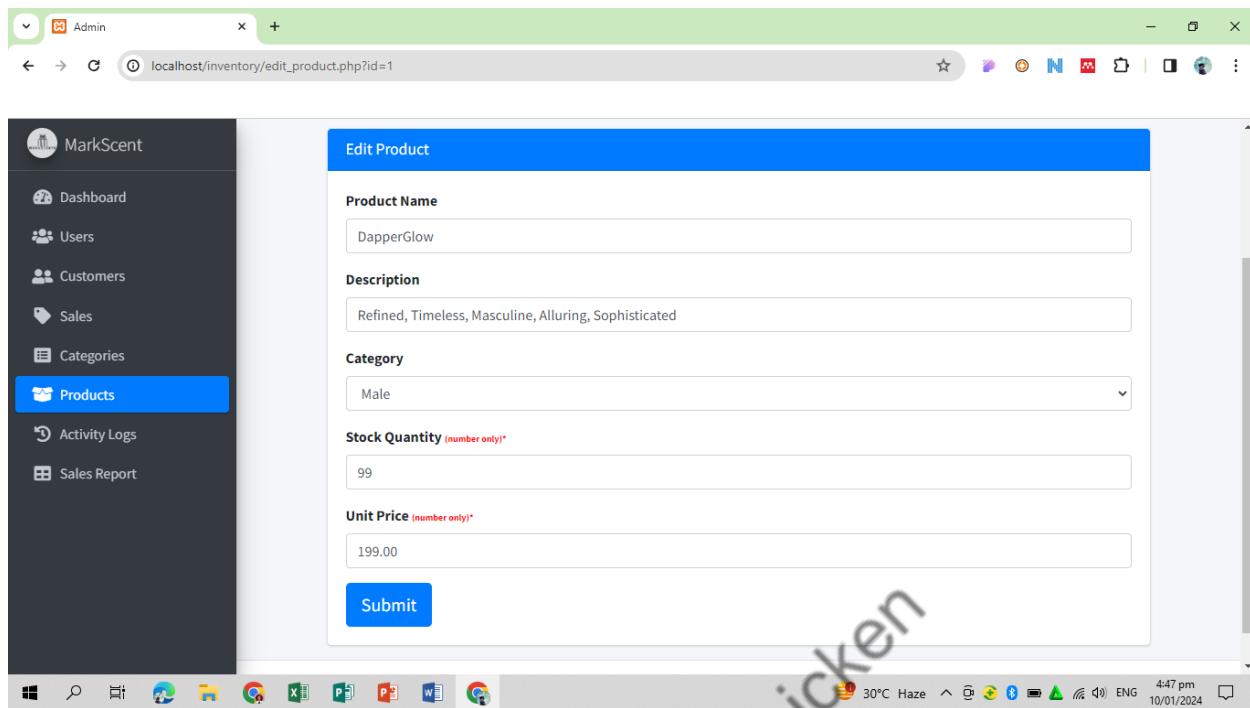


Figure 10.17: Edit Product of MarkScents Inventory Management System

In the product management interface, you have the flexibility to customize various aspects of your offerings. The "Product Name" field empowers you to modify the existing name of the product, tailoring it to better suit your evolving business needs. The "Description" section provides an avenue for refining and enhancing the product's description, enabling you to communicate updated details, highlight selling points, or introduce new information to potential customers. The "Category" dropdown menu offers the convenience of reclassifying the product into a different category, potentially improving its discoverability for customers. Under the "Inventory and Pricing" section, you can manage stock levels using the "Stock Quantity" field, ensuring that it accurately reflects the current availability of units. Additionally, the "Unit Price" field allows you to dynamically adjust the product's price, accommodating market fluctuations, promotions, or other relevant factors. This comprehensive set of editing options empowers you to maintain a responsive and competitive product lineup.

Reports

The screenshot shows a web browser window titled 'Admin' with the URL 'localhost/inventory/act_Admin_logs.php'. The left sidebar has a dark theme with white icons and text, listing 'Dashboard', 'Users', 'Customers', 'Sales', 'Categories', 'Products', 'Activity Logs' (which is highlighted in blue), and 'Sales Report'. The main content area is titled 'Activity Logs' and contains a table with 11 rows of data. The table columns are 'Trail ID', 'Username', 'User Role', 'Action', and 'Date'. The data shows a single user named 'Hiro' performing various actions related to product categories and lists over a period from December 19, 2023, to December 20, 2023. The bottom right corner of the screen shows system status: 30°C Haze, ENG, 4:47 pm, and 10/01/2024.

Trail ID	Username	User Role	Action	Date
1	Hiro	Admin	Added Female as Category.	2023-12-19 15:13:35
2	Hiro	Admin	Added Male as Category.	2023-12-19 15:13:51
3	Hiro	Admin	Added DapperGlow to Product list.	2023-12-19 15:18:40
4	Hiro	Admin	Added UrbanWhisk to Product list.	2023-12-19 15:19:08
5	Hiro	Admin	Added GentleBreeze to Product list.	2023-12-19 15:19:37
6	Hiro	Admin	Added MysticEmbrace to Product list.	2023-12-19 15:20:08
7	Hiro	Admin	Added NobleAura to Product list.	2023-12-19 15:20:28
8	Hiro	Admin	Added AzureSerenade to Product list.	2023-12-19 15:20:48
9	Hiro	Admin	Added VibrantElegance to Product list.	2023-12-19 15:22:09
10	Hiro	Admin	Added RuggedCharm to Product list.	2023-12-19 15:22:52
11	Hiro	Admin	Added VelvetWhisper to Product list.	2023-12-19 15:22:52

Figure 11.1: Activity Logs of MarkScent's Inventory Management System

An activity log is like a detailed diary of a system, recording who did what, when, and to what items. It's a powerful tool for tracking user actions, monitoring changes, and identifying trends.

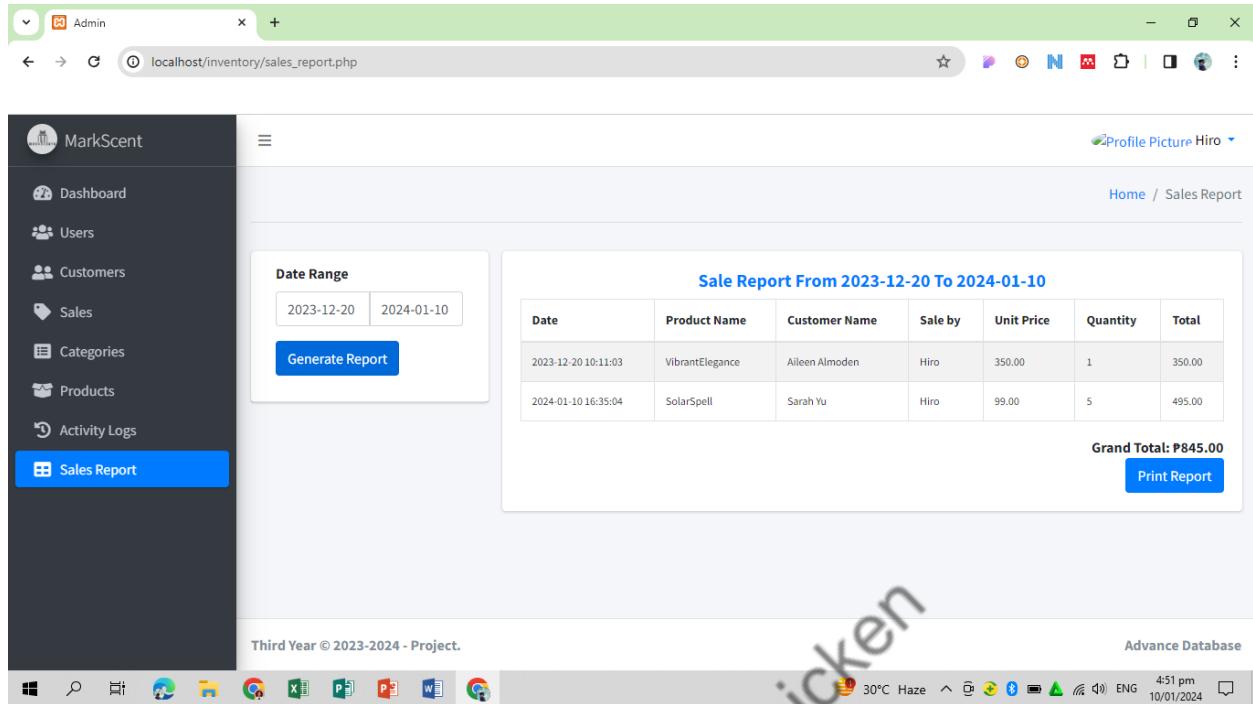


Figure 11.2: Sales Report of Mark Scents Inventory Management System

Figure 11.2 provides a summary of the sales performance of a company over a specified period. The report shows the total sales, the number of products sold, the average sale price, and the names of the customers who made the purchases. This information can be used to track progress toward sales goals, identify areas for improvement, and make data-driven decisions about pricing, marketing, and inventory.

Data Design

According to Thakur (2023), **data design** is the first design activity, which results in less complex, modular and efficient program structure.

Entity-Relationship Diagram

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system. ER Diagrams are most often used to design or debug relational databases in the fields of

software engineering, business information systems, education and research (Lucidchart, 2023).

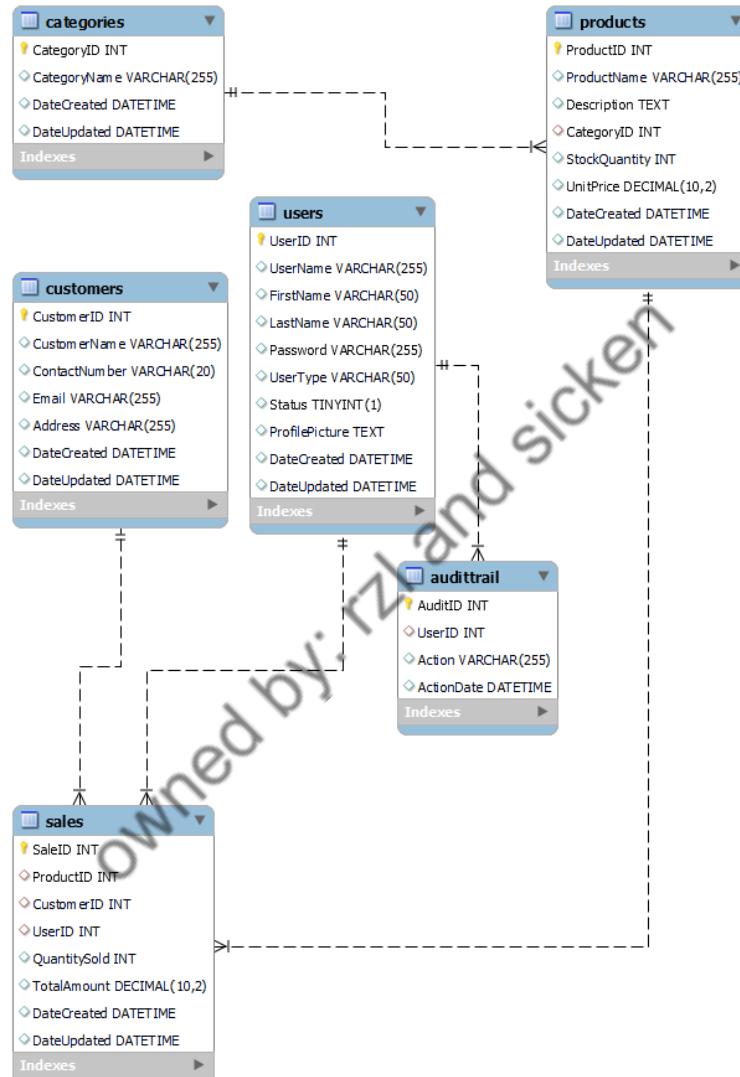


Figure 12: Entity-Relationship of Mark Scents Inventory Management System

The ER handle user access within an inventory system. It comprises six tables: users, categories, products, customers, sales, and audit trails, all intricately connected. This interconnected structure facilitates the tracking of product details, sales transactions, and user activities.

Data Dictionary

A Data Dictionary is a collection of names, definitions, and attributes about data elements that are being used or captured in a database, information system, or part of a research project (Best Practices for Data Dictionary Definitions and Usage, n.d.).

Table: audittrail						
Table Comments						
Columns						
Name	Data Type	Not Null	PK	FK	Default	Comment
AuditID	INT	Yes	Yes	No		
UserID	INT	No	No	Yes	NULL	
Action	VARCHAR(255)	No	No	No	NULL	
ActionDate	DATETIME	No	No	No	NULL	

Table 3.1: Schema for an audit trail

The table above is the schema for an audit trail, which is a record of all the actions that have been taken within a system. Each row in the table represents a different field in the audit trail, and the columns show the data type of the field, whether it is required or not, and whether it is a primary key or foreign key.

Table: categories						
Table Comments						
Columns						
Name	Data Type	Not Null	PK	FK	Default	Comment
CategoryID	INT	Yes	Yes	No		
CategoryName	VARCHAR(255)	No	No	No	NULL	
DateCreated	DATETIME	No	No	No	CURRENT_TIMESTAMP	
DateUpdated	DATETIME	No	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table 3.2: Schema for categories

The table above appears to be the schema for a table named "categories" in a database. The schema defines the structure of the table, specifying the names and data types of the columns, as well as constraints on the data that can be stored in each column.

Table: customers						
Table Comments						
Columns						
Name	Data Type	Not Null	PK	FK	Default	Comment
CustomerID	INT	Yes	Yes	No		
CustomerName	VARCHAR(255)	No	No	No	NULL	
ContactNumber	VARCHAR(20)	No	No	No	NULL	
Email	VARCHAR(255)	No	No	No	NULL	
Address	VARCHAR(255)	No	No	No	NULL	
DateCreated	DATETIME	No	No	No	CURRENT_TIMESTAMP	
DateUpdated	DATETIME	No	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table 3.3: Schema for customers

Each customer is assigned a unique identifier known as CustomerID. This identifier distinguishes individual customers within the system. The Customer Name field captures the personal or business name associated with the customer, while the Contact Number and Email fields store the customer's phone number and email address, respectively. Additionally, the Address field records the customer's mailing address, providing a comprehensive overview of their contact details. The system also tracks the DateCreated, indicating when the customer record was initially established, and Date Updated, reflecting the most recent update to the customer information. These fields collectively form a structured and detailed customer profile, facilitating efficient record-keeping and ensuring that the information remains accurate and up-to-date.

Table: products						
Table Comments						
Columns						
Name	Data Type	Not Null	PK	FK	Default	Comment
ProductID	INT	Yes	Yes	No		
ProductName	VARCHAR(255)	No	No	No	NULL	
Description	TEXT	No	No	No	NULL	
CategoryID	INT	No	No	Yes	NULL	
StockQuantity	INT	No	No	No	NULL	
UnitPrice	DECIMAL(10,2)	No	No	No	NULL	
DateCreated	DATETIME	No	No	No	CURRENT_TIMESTAMP	
DateUpdated	DATETIME	No	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table 3.4: Schema for products

Each product is characterized by a set of key attributes. The "ProductID" serves as a distinctive identifier for every product, ensuring uniqueness within the system. Correspondingly, the "ProductName" denotes the specific name associated with the product, while the "Description" provides a concise overview of its features. The "CategoryID" is a numerical representation designating the product's category, aiding in organizational classification. Essential inventory details include the "StockQuantity," indicating the current number of units available for the product, and the "UnitPrice," specifying its cost. The timestamps "DateCreated" and "DateUpdated" denote the respective creation and last modification dates of the product record, offering valuable insights into the product's lifecycle within the database.

Table: sales						
Table Comments		Columns				
Name	Data Type	Not Null	PK	FK	Default	Comment
SaleID	INT	Yes	Yes	No		
ProductID	INT	No	No	Yes	NULL	
CustomerID	INT	No	No	Yes	NULL	
UserID	INT	No	No	Yes	NULL	
QuantitySold	INT	No	No	No	NULL	
TotalAmount	DECIMAL(10,2)	No	No	No	NULL	
DateCreated	DATETIME	No	No	No	CURRENT_TIMESTAMP	
DateUpdated	DATETIME	No	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table 3.5: Schema for sales

Several key identifiers play pivotal roles in tracking and recording transactions. The SaleID serves as a unique identifier for each sale, distinguishing it from others in the system. ProductID functions as the identifier specific to the product that was sold, while CustomerID uniquely associates the sale with the customer. UserID serves as the identifier for the employee responsible for the sale. The Quantity Sold indicates the number of units of the product involved in the transaction, providing a quantitative measure. TotalAmount represents the overall monetary value of the sale, consolidating the financial aspect. Additionally, DateCreated signifies the date and time when the sale was initially recorded, while DateUpdated reflects the most recent modification to the sale record, ensuring a comprehensive timeline of transaction history.

Table: users						
Table Comments		Columns				
Name	Data Type	Not Null	PK	FK	Default	Comment
UserID	INT	Yes	Yes	No		
UserName	VARCHAR(255)	No	No	No	NULL	
FirstName	VARCHAR(50)	No	No	No	NULL	
LastName	VARCHAR(50)	No	No	No	NULL	
Password	VARCHAR(255)	No	No	No	NULL	
UserType	VARCHAR(50)	No	No	No	NULL	
Status	TINYINT(1)	No	No	No	'1'	
ProfilePicture	TEXT	No	No	No	NULL	
DateCreated	DATETIME	No	No	No	CURRENT_TIMESTAMP	
DateUpdated	DATETIME	No	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table 3.6: Schema for users

The user table in the database is structured with various fields to comprehensively capture and manage user information. The UserID, serving as the primary key, is an integer that uniquely identifies each user. User Name, a non-null string with a maximum length of 255 characters, stores the user's chosen username. FirstName and LastName are nullable strings, each accommodating up to 50 characters, capturing the user's first and last names, respectively. The Password field, a non-null string with a maximum length

of 255 characters, securely stores the user's password in a hashed format. User Type, a nullable string with a maximum length of 50 characters, denotes the user's type, such as "admin" or "customer." The Status field, a nullable tiny integer (1 byte), indicates the user's status, such as "active" or "inactive." Profile Picture, a nullable text field, stores the URL or path to the user's profile picture. DateCreated, a non-null datetime field, automatically records the timestamp when the user record is created, while DateUpdated, also a non-null datetime field, automatically updates to the current timestamp whenever the user record is modified, storing the date and time of the last update.

System Architecture

According to Architecture (2023), the system architecture is a representation of the business or customer requirements.

Network Model

According to TechDictionary (2020), a network model is a database model that is designed as a flexible approach to representing objects and their relationships. A unique feature of the network model is its schema, which is viewed as a graph where relationship types are arcs and object types are nodes.

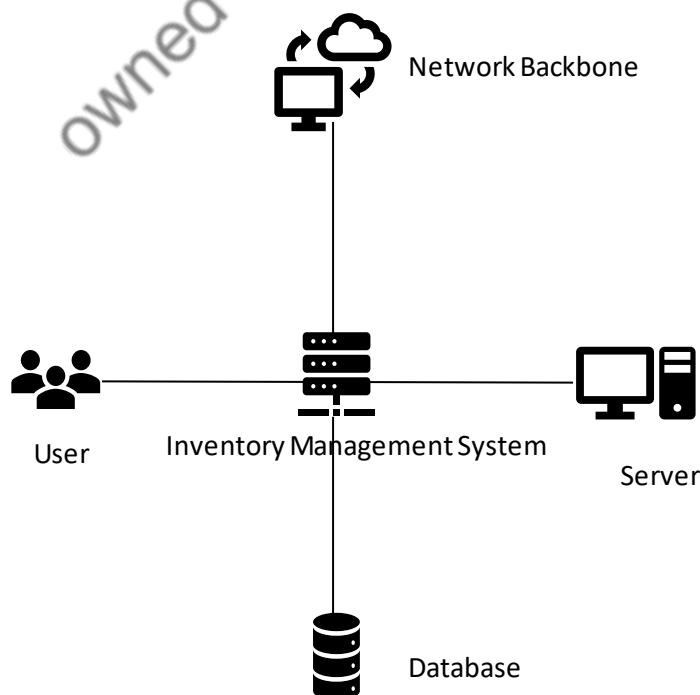


Figure 13: Network Model of MarkScents Inventory Management System

Figure 13 presents a basic but functional network model for an inventory management system.

Network Topology

According to Gillis (n.d.), network topology is the physical and logical arrangement of nodes and connections in a network. Nodes usually include devices such as switches, routers and software with switch and router features. Network topologies are often represented as a graph.

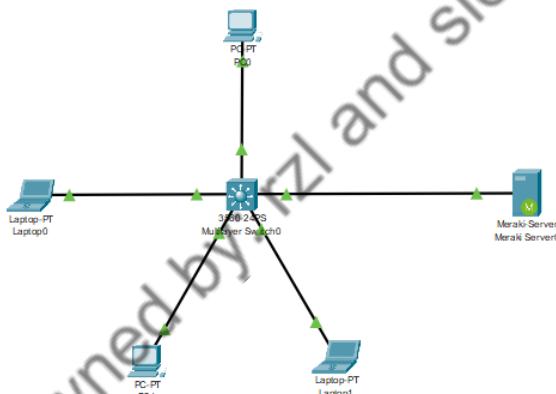


Figure 14: Network Topology of MarkScents Inventory Management System

Figure 14 consists of a router, a switch, a server, a printer, and two computers. The router is responsible for connecting the network to the internet and for routing traffic between the different devices on the network. The switch is used to connect the computers and printer to the network. The server is used to store files, share resources, and host applications. The printer is used to print documents from the computers on the network.

Security

According to System Security (n.d.), system security is the practice of protecting information systems from unauthorized access, modification, or destruction. System security measures help organizations protect sensitive data and prevent cyber threats.

This document delineates the security considerations for MarkScents, a dynamic business specializing in the production and distribution of custom fragrances. The focus here is on the development and implementation of a customized inventory management system tailored to MarkScents' specific needs. This system is designed to streamline inventory management for the diverse range of fragrance products offered by the business. Recognizing the paramount importance of safeguarding sensitive business information and customer data, the establishment of a robust security plan is imperative. This plan will encompass measures to protect against unauthorized access, data breaches, and other potential security threats to ensure the integrity and confidentiality of both the inventory management system and customer information. By integrating comprehensive security protocols, MarkScents aims to fortify its operations and uphold the trust of its customers while efficiently managing its fragrance inventory.

SYSTEMS DEVELOPMENT

The process of creating and maintaining information systems is called systems development or systems analysis and design (Q1 – *What Is Systems Development?*, n.d.).

Software Specification

According to High-Performance Embedded Computing (2014), the software requirements specification document is a document intended for the people involved in the implementation of the software application; its completeness is a means to avoid the manipulation of other documents.

Areas	Minimum Specifications	Recommended Specifications
Operating System	Microsoft Windows 7	Microsoft Windows 11

Database	MySQL 6.0	MySQL 8.0
Browser	Google Chrome	Google Chrome ver. 120.0.6099.109
Web Server	Apache XAMPP Server 8.0.30	Apache XAMPP Server 8.2.12
Programming Language	PHP	PHP

*Table 4.1: Software Specification of Developing and Implementing a Customized Inventory Management System
Mark Scents*

In Table 4.1, the system is reliant on its software components for functionality. The table provides a comprehensive list of necessary software requirements essential for the proposed method to operate effectively. The system was able to meet the minimum specifications required for utilization, and the recommended specifications provided enhanced usability.

Hardware Specification

According to Computer-specification-hardware (2015), Computer hardware specifications are technical descriptions of the computer's components and capabilities. Processor speed, model and manufacturer.

Areas	Minimum Specifications	Recommended Specifications
CPU	Intel i3 1.6GHz Dual Core	Intel i7 2.77GHz Quad-Core
RAM	4gb	8gb
Internet	3Mbps	5Mbps
HDD/SDD	300gb	500gb
Monitor Size	1366x768	1920x1080

Table 4.2: Hardware Specification of Developing and Implementing a Customized Inventory Management System
MarkScents

In Table 4.2, the hardware plays a crucial role in ensuring the system's functionality. The table presents an exhaustive compilation of essential hardware requirements that are imperative for the optimal operation of the proposed method. The system successfully satisfies the minimum specifications necessary for utilization, while adhering to the recommended specifications significantly improves usability.

Program specification

A program specification defines the expected behavior and features of a computer program. It acts as a contract between the developer and stakeholders, outlining what the program should do and how it should function (Oxford University Press, n.d.).

1. Introduction

This document outlines the program specification for a customized inventory management system (IMS) to be developed and implemented for MarkScents, a small business in handcrafted scents and fragrances. The system aims to improve inventory control, enhance operational efficiency, and provide real-time data insights to support informed decision-making.

2. Functional Requirements

Product Management

Product management functionalities within the system will enable users to add, edit, and delete information related to each product, including description. This ensures comprehensive product data management and simplifies catalog organization.

Inventory Tracking

Maintain real-time visibility into your inventory by tracking all incoming and outgoing stock movements, including sales transactions. This enables accurate and up-to-date records of all product levels, ensuring efficient inventory management and informed decision-making.

User Management

User management is crucial for maintaining a secure and organized system. It involves creating and managing user accounts, assigning roles and permissions, and tracking user activity for security and accountability. This ensures that users only have access to the information and resources they need to perform their tasks effectively, while protecting sensitive data from unauthorized access.

3. Non-Functional Requirements

Performance

The system must be responsive and deliver real-time data insights to users with minimal delay. Downtime should be kept to a minimum to ensure continuous operation and uninterrupted user experience.

Security

To ensure the safety of sensitive data like user credentials and inventory information, robust security measures must be implemented. This includes regular data backups and establishing clear data recovery procedures for emergency situations.

Usability

Prioritizing a user-friendly experience, the interface should be intuitive and readily navigable even for those with limited technical expertise. Comprehensive documentation and training materials will further empower users, ensuring smooth interaction and comfortable exploration of the system's functionalities.

4. Hardware and Software Requirements

4.1. Hardware:

- 4.1.1. A conventional personal computer or laptop equipped with ample processing capacity and memory resources.

4.1. Software:

- 4.2.1. Operating system: Windows 10 or 11.
- 4.2.2. Database management system: MySQL.
- 4.2.3. Programming language: PHP.

5. Project Timeline

The anticipated timeframe for project completion is approximately five months.

6. Acceptance Criteria:

The system will be deemed complete and approved upon satisfying the following conditions:

- 6.1. Fulfillment of all functional and non-functional requirements.
- 6.2. Successful completion of comprehensive testing with no identified issues.
- 6.3. Completion and accuracy of user documentation.
- 6.4. Installation and operational functionality on the MarkScents computer system.

7. Maintenance and Assistance

The software developer will provide maintenance and support for the system for a duration of one year following its implementation.

8. Prospective Improvements

- 8.1. Integration with accounting software for seamless financial management.
- 8.2. Development of a mobile application dedicated to inventory management.
- 8.3. Implementation of barcode scanning functionality to facilitate efficient product identification.

Program Environment

According to Dobariya (2023), program environment refers to the combination of software and hardware that enables developers to create, test, and run programs. This

environment includes various tools and resources that support all aspects of the development lifecycle, from writing code to debugging and deploying applications.

Visual Studio Code. A popular open-source code editor with extensive support for various languages and features, including syntax highlighting, code completion, and debugging.

MySQL Workbench. MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. It is a database management tool.

Bootstrap. Bootstrap is a **front-end framework** that provides pre-built components and styles for building responsive websites and web applications. It is popular for its ease of use, mobile-first approach, and open-source nature.

Computer. A **computer** is a programmable electronic device that can store, retrieve, and process information.

Front-End

The frontend is everything a user sees and interacts with when they click on a link or type in a web address (freeCodeCamp, 2022).

HTML (HyperText Markup Language): This is the foundation of any website, defining the content and structure of each page. It uses tags to tell the browser how to display text, images, videos, and other elements.

CSS (Cascading Style Sheets): This language controls the visual appearance of web pages, dictating the layout, colors, fonts, and other stylistic aspects of all HTML elements.

Bootstrap. Bootstrap is a **front-end framework** that provides pre-built components and styles for building responsive websites and web applications. It is popular for its ease of use, mobile-first approach, and open-source nature.

Back-End

The backend, also called server-side, is the infrastructure that supports the front end and is made up of parts of a piece of software regular users can't see. The backend is basically a website's brain. The backend includes the server that provides data whenever requested, the database where that data is organized, and the application that delivers that information (Airfocus, .nd.).

PHP: A classic language for web development, known for its ease of use and large community.

Deployment Diagram

According to Creatly (2022), a deployment diagram is a UML diagram type that shows the execution architecture of a system, including nodes such as hardware or software execution environments, and the middleware connecting them.

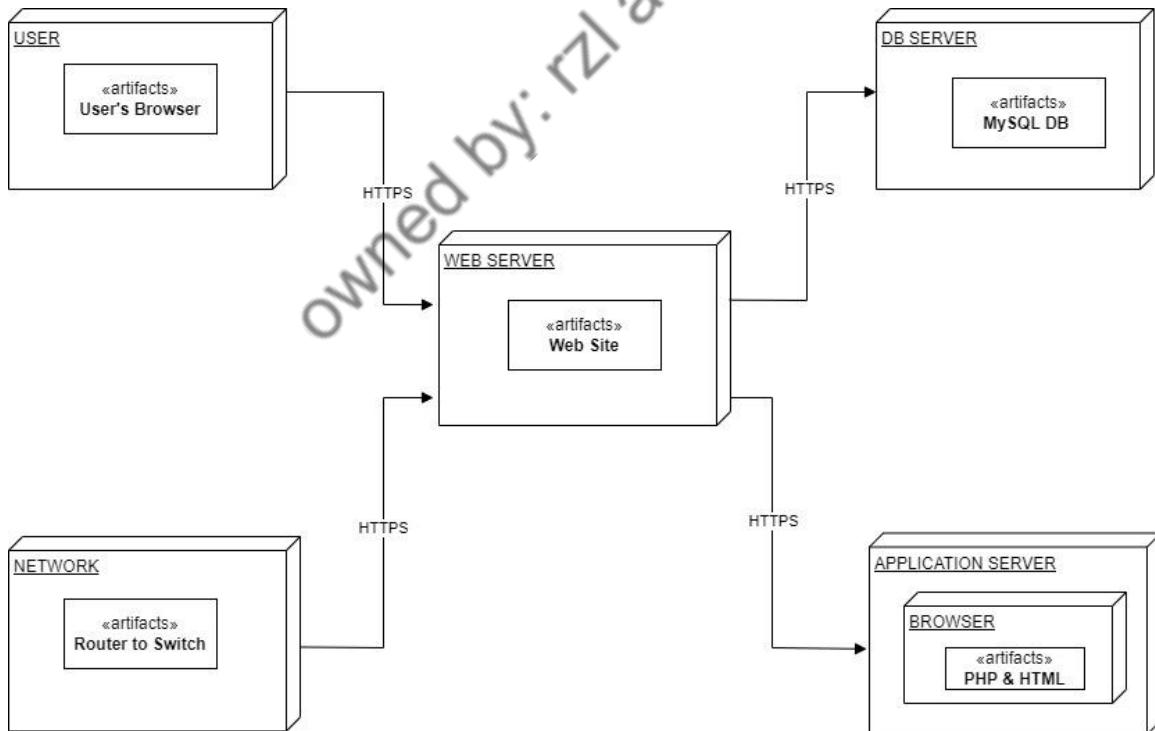


Figure 15: Deployment Diagram of MarkScents Inventory Management System

The MarkScents Inventory Management System operates through a web server that hosts an HTML5 and PHP application, enabling users to access the system via their web browsers. Essential inventory data is stored in a MySQL database, fostering seamless communication between the web server and the database. The network configuration features a switch that interconnects internal devices, such as the server and printer, creating a straightforward star network structure. Although the inclusion of a router is discretionary, it offers the potential for internet connectivity, facilitating access to online features if desired.

Test Plan

The success of a project can be assessed by its test plan. It begins at the beginning of the project with the bare minimum of details, and as the project moves forward, more information is added. The process of test planning is ongoing and is done at every stage of a product's life. In other words, a test plan is a document that outlines the scope, available resources, strategy, and timetable for the testing activities that will be carried out as part of a project (Arora, Simran Kaur, 2023).

1. Introduction

This test plan outlines the procedures for testing the development and implementation of a customized inventory management system for MarkScents. The objective is to ensure the system functions as designed, meets all requirements, and integrates seamlessly with existing business processes.

2. Scope. This test plan covers all functionalities of the inventory management system, including:

- 2.1 Users (adding, editing, deleting, searching users)
- 2.2 Customers (adding, editing, deleting, searching customers)
- 2.3 Sales (adding, editing, deleting, searching sales)
- 2.4 Categories (adding, editing, deleting, searching categories)

2.5 Products (adding, editing, deleting, searching products)

3. Schedule. A task networking tool should be used to determine and record task durations. Establish, keep track of, and plan test milestones.

Phase	Start Date	End Date	Deliverables
Unit Testing	November 4, 2023	November 10, 2023	Unit test reports for all modules
Integration Testing	November 18, 2023	November 20, 2023	Integration test reports for all modules
System Testing	November 21, 2023	November 24, 2023	System test reports for all functionalities
Performance Testing	November 25, 2023	November 29, 2023	Performance test reports with recommendations for improvement
Data Migration Testing	November 30, 2023	December 6, 2023	Data migration test reports with verification of data accuracy and completeness
Defect Resolution	Throughout testing phases	Ongoing	Resolution of all identified defects and bugs
Final Testing	December 7, 2023	December 20, 2023	Re-testing of all functionalities after defect resolution

4. Tools. Specifies the instruments used for testing, problem reporting, and other pertinent tasks.

Data Generation and Management:

In the process of developing and implementing a customized Inventory Management System (IMS) for MarkScents, database management tools play a crucial role in ensuring the efficient handling of data. Employing software such as phpMyAdmin becomes instrumental in managing and manipulating data within the system's database. These tools facilitate tasks like creating, modifying, and querying the database, enabling the seamless organization and retrieval of vital information related to MarkScents' inventory. By leveraging robust database management tools, the IMS can maintain data integrity, support effective decision-making, and enhance overall system performance, aligning with the specific needs and objectives of MarkScents in optimizing its inventory processes.

Functional Testing:

As part of developing and implementing a customized Inventory Management System for MarkScents, manual testing plays a pivotal role in ensuring the system's robustness. The testing team will meticulously execute pre-defined test cases that cover all core functionalities essential to MarkScents' operations. This includes tasks such as adding new products to the inventory, efficiently managing inventory levels, and generating comprehensive reports. Through manual testing, the team aims to validate the functionality, usability, and reliability of the Inventory Management System, ensuring that it aligns seamlessly with MarkScents' specific requirements and business processes.

5. Training Needs. The staff and skill levels required to carry out test-related duties should be specified by the test planner. Any specialized training needed to complete a task should also be indicated.

As part of the process of developing and implementing a Customized Inventory Management System for MarkScents, it is imperative to address the training needs of the team responsible for test-related duties. The test planner should clearly specify the required staff and skill levels necessary to effectively conduct testing activities. Any

specialized training essential for tasks related to testing, such as utilizing specific testing tools or understanding the intricacies of the customized features in the Inventory Management System, should be identified and provided. Ensuring that the testing team possesses the requisite expertise and knowledge is crucial for the successful execution of testing procedures, thereby contributing to the overall quality and reliability of the tailored Inventory Management System for MarkScents.

6. Risk Management. Describes the dangers that could arise during software testing as well as the problems that the software itself might face if it is published without enough testing.

In the context of developing and implementing a Customized Inventory Management System for MarkScents, risk management is a critical aspect that addresses potential challenges during software testing and the repercussions of deploying the system without thorough testing. The risks associated with the project include issues that might emerge during various testing phases, such as functional, performance, and security testing. Inadequate testing could lead to operational inefficiencies, data inconsistencies, and potential security vulnerabilities, all of which could adversely impact MarkScents' inventory management processes. Effective risk management strategies are essential to identify, assess, and mitigate these potential pitfalls, ensuring that the customized IMS meets the highest standards of reliability, functionality, and security before deployment.

Structure Chart

Structure charts show the program modules and the relationships among them. A structure chart consists of rectangles that represent the program modules, with arrows and other symbols that provide additional information (GeeksforGeeks, n.d.).

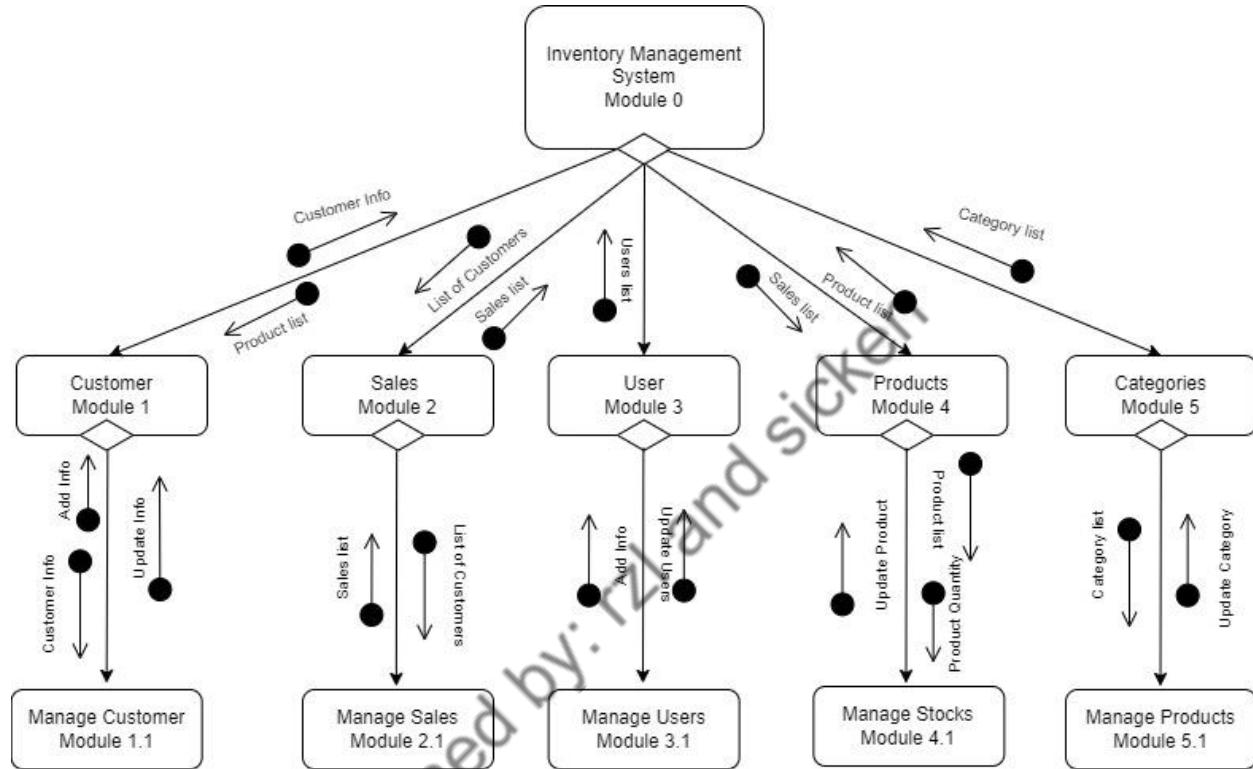


Figure 16: Structural Chart of MarkScents Inventory Management System

Figure 16 shows the "Inventory Management System" of MarkScents, comprising various modules, each depicted as a box with its designated name and primary function. The modules include the Customer Module (Module 1), responsible for managing customer information; the Sales Module (Module 2), handling sales list; the User Module (Module 3), which oversees user accounts and access control; the Products Module (Module 4), managing product data; and the Categories Module (Module 5), organizing and filtering products into categories. Each main module contains sub-functions represented by smaller boxes, delineating specific tasks or functionalities within the module. Data flow is illustrated through arrows connecting modules, indicating the exchange of information. For instance, the arrow from "Customer Module" to "Sales Module" implies the utilization

of customer information in the sales list. Additionally, external elements like "Category list," "Customer Info," and "Product list" are incorporated, potentially signifying external data sources or supplementary information not directly integrated into the modules.

System Testing

System testing, also referred to as *system-level testing* or *system integration testing*, is the process in which a quality assurance (QA) team evaluates how the various components of an application interact together in the full, integrated system or application (Yasar, K., n.d.).

Unit Testing

Unit testing is a type of software testing that focuses on individual units or components of a software system. The purpose of unit testing is to validate that each unit of the software works as intended and meets the requirements (GeeksforGeeks, n.d.).

Unit Testing Test Form

Login Function	Functional	Non-Functional
Confirm access is granted when using legitimate administrator credentials.	✓	
Confirm access is granted with legitimate staff credentials.	✓	
User Management		
Create a new user.	✓	
Modify user information and verify that the updated details are accurately reflected.	✓	
Remove an existing user and confirm their deletion.	✓	
Customers Management		
Add a new customer.	✓	
Modify customer information and verify that the updated details are accurately reflected.	✓	

Remove an existing customer and confirm their deletion.	✓	
Sales Management		
Add new sales.	✓	
Verify that the quantity sold is accurate.	✓	
Ensure that the total amount matches the quantity sold.	✓	
Confirm the accuracy of the staff's record.	✓	
Categories Management		
Add a new category.	✓	
Verify whether the added category will be displayed in the category log.	✓	
Modify category information and ensure that the updated details are accurately reflected.	✓	
Remove an existing category and confirm its deletion.	✓	
Products Management		
Add a new product.	✓	
Modify product information and ensure that the updated details are accurately reflected.	✓	
Remove an existing product and confirm its deletion.	✓	

Table 5. Unit Testing Result of MarkScents Inventory Management System

In Table 5, the test form meticulously outlines a structured assessment for vital functionalities within the context of developing and implementing the Customized Inventory Management System for MarkScents. This testing approach is precisely customized to validate the performance of individual units in the system. The table systematically distinguishes between functional and non-functional aspects for each unit test, emphasizing a thorough verification of the system's behavior at the unit level and ensuring strict adherence to the design specifications. It is noteworthy that all functions

demonstrated functionality, as evidenced by the presence of checks in the functional column, affirming the robustness of the system's critical features.

Integration Testing

Integration testing is a type of software testing where components of the software are gradually integrated and then tested as a unified group. Usually these components are already working well individually, but they may break when integrated with other components (Katalon, 2023).

Integration testing Test Form

Users Integration Testing	Functional	Non-Functional
Confirm that user credentials are integrated correctly into the system.	✓	
Test the integration of user roles and permissions.	✓	
Customer Integration Testing		
Validate the seamless integration of customer information.	✓	
Confirm that adding, modifying, or removing customers are working.	✓	
Test the integration of customer data.	✓	
Sales Integration Testing		
Confirm that adding, modifying, or removing sales are working.	✓	
Categories Integration Testing		

Validate the proper association of products with their respective categories.	✓	
Products Integration Testing		
Verify that adding, modifying, or removing products integrates seamlessly across the system.	✓	

Table 6. Integration Testing Result of Mark Scents Inventory Management System

The Integration Testing Test Form for the MarkScents Inventory Management System systematically assesses the interaction and functionality of key modules, ensuring a seamless integration of critical components. For Users Integration Testing, the form verifies the accurate integration of user credentials, and tests the integration of user roles and permissions. In Customer Integration Testing, emphasis is placed on validating the seamless integration of customer information, ensuring the correct operation of adding, modifying, and removing customers, and evaluating the integration of customer data with other system modules. Sales Integration Testing focuses on ensuring the correct operation of adding, modifying, and removing sales. For Categories Integration Testing, the form ensures the proper association of products with their respective categories, and in Products Integration Testing, it verifies the seamless addition, modification, or removal of products across the system.

System Testing

System testing is also known as black-box testing because it focuses on the external parts of the system. It takes place after integration testing and before the acceptance testing. So, this testing detects the issues within the integrated units of a system. In this way, it checks the design of the complete system and behavior per the end user's needs (Collins, T., 2023).

Test	Pass	Fail
Examine the response times of the system.	✓	
Evaluate the clarity of the user interface.	✓	
Assess the functionality of key system features.	✓	
Examine the susceptibility of the system to security threats.	✓	
Test the accuracy of input and output processes.	✓	
Confirm the completeness of logs.	✓	

Table 7. System Testing Result of Mark Scents Inventory Management System

Table 7 showcases the outcomes of System Testing, with each test identified as either "Pass" or "Fail" to signify the assessment results. The presence of "Pass" entries throughout all test cases confirms that the system has effectively met predetermined criteria concerning performance, usability, functionality, security, data management, and logging. These affirmative results affirm the system's preparedness to advance into subsequent stages within the software development life cycle or for deployment.

Acceptance Testing

Acceptance tests are designed to replicate the real-life use of the product to verify that it's functional and complies with the specifications agreed with the client. But that's not it. There's a lot to understand about acceptance testing before you can implement the tests for accelerated product releases (Collins, T., 2023).

User Interface (UI) Testing:	Pass	Fail
Assess the comprehensibility, uniformity, and compliance with design standards of the overall user interface.	✓	
Verify the functionality and well-designed nature of all interactive elements, including buttons, links, and forms.	✓	
Functionality Testing:		

Evaluate every significant feature delineated in the specifications.	✓	
Data Management:		
Verify the accuracy and integrity of input and output test data.	✓	
User Acceptance:		
Verify the system's ease of comprehension and navigation.	✓	
Evaluate the system's usability and user satisfaction.	✓	

Table 8. Acceptance Testing Result of MarkScents Inventory Management System

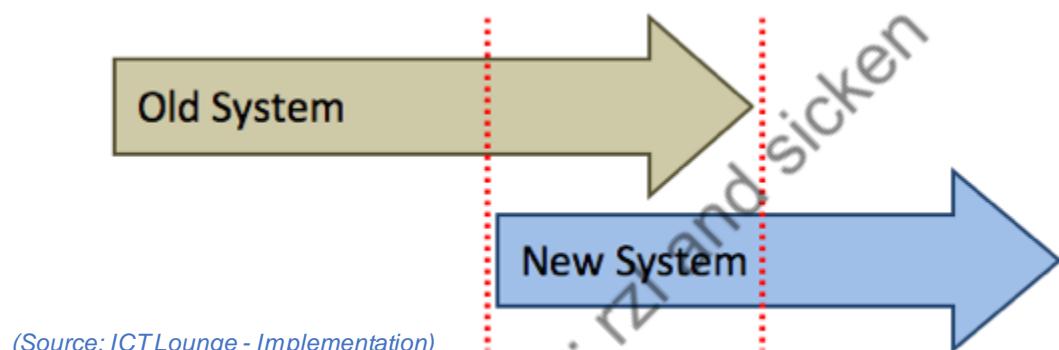
The acceptance testing process for MarkScents Inventory Management System (IMS) involves assessing various key aspects, all of which have successfully passed the testing phase. In User Interface (UI) Testing, the comprehensibility, uniformity, and adherence to design standards of the overall user interface were carefully evaluated and confirmed. Additionally, the functionality and well-designed nature of all interactive elements, including buttons, links, and forms, were verified, meeting the specified requirements. Functionality Testing involved a thorough evaluation of each significant feature outlined in the specifications, ensuring that they operate as intended and align with the system's design. Data Management testing verified the accuracy and integrity of input and output test data, confirming that the system effectively manages data in accordance with expectations. User Acceptance testing focused on ensuring that the system is easy to understand and navigate, with a particular emphasis on evaluating usability and user satisfaction. The fact that all these aspects have passed acceptance testing underscores the system's readiness for deployment, indicating that it meets user expectations and adheres to specified requirements.

System Implementation

Systems implementation is a set of procedures performed to complete the design (as necessary) contained in the approved systems design document and to test, install, and begin to use the new or revised Information System (opentextbooks, n.d.).

Systems Changeover

A system changeover is the process of transitioning from one system to another. This can be a major or minor change, and can involve changes to personnel, processes, or technology. A system changeover can be a challenging time for an organization, and it is important to plan and execute the changeover carefully to ensure a smooth transition (Pelago, n.d.).



(Source: [ICTLounge - Implementation](#))

Figure 14. System Changeover of MarkScents Inventory Management System

Lower Risk:

MarkScents may choose parallel operation to mitigate risks associated with system implementation. This approach acts as a safety net, allowing a seamless fallback to the old system if any issues arise with the new one. This ensures uninterrupted business operations during the transition, minimizing potential disruptions.

Verification and Validation:

Parallel operation enables a direct comparison between the outputs of the old and new systems. This verification process is crucial for ensuring that the new inventory management system functions correctly before a full commitment. Any discrepancies or

errors can be identified and rectified during this phase, enhancing the overall reliability of the system.

Adaptation Period:

Given that MarkScents employees may be accustomed to existing processes, a parallel operation allows for a gradual adaptation to the new system. This phased approach minimizes potential resistance or disruptions that can arise with an abrupt changeover. Users can familiarize themselves with the new processes at their own pace, promoting a smoother transition.

Data Accuracy:

Running both systems concurrently facilitates the validation of data accuracy. By comparing data between the old and new systems, MarkScents can identify and correct any discrepancies, ensuring that accurate and consistent information is maintained in the new inventory management system.

Training and Familiarization:

The parallel operation approach offers users the advantage of working with both systems simultaneously. This concurrent usage allows for training and familiarization with the new system without the pressure of an immediate, complete shift. Employees can gradually become comfortable with the new processes, enhancing overall user adoption.

Business Continuity:

MarkScents can continue its regular operations during the parallel period without disruptions. This is particularly crucial for a business like MarkScents, where any downtime can result in lost sales or customer dissatisfaction. The parallel approach

ensures business continuity and customer satisfaction during the transition to the new inventory management system.

Project Implementation Checklist

Pre-Implementation Preparation	Status
Define Project Scope	[]
Resource Allocation	[]
Risk Assessment	[]
Stakeholder Communication	[]
Infrastructure Readiness	[]

Software Configuration	Status
Install IMS Software	[]
Configuration Settings	[]
Database Setup	[]

Data Migration	Status
Data Extraction	[]
Data Cleansing	[]
Data Mapping	[]
Import Data	[]

System Testing	Status
Unit Testing	[]
Integration Testing	[]

System Testing	[]
User Acceptance Testing	[]

User Training	Status
Training Material Development	[]
Training Sessions	[]
Q&A and Support	[]

System Changeover	Status
Select Changeover Method	[]
Backup Procedures	[]
Communicate Changeover	[]
Execute Changeover	[]

Post-Implementation	Status
Post-Implementation Evaluation	[]
Documentation Update	[]
Continuous Improvement	[]

Implementation Contingency

According to ICTS, a contingency plan is a plan that enables the organization to deal with problems that may arise during the development, testing, and production of a software product. The purpose of a contingency plan is to ensure that there are procedures in place so that if something goes wrong, the organization can handle it.

Risk Identification:

Conduct a thorough risk analysis to identify potential challenges during implementation, encompassing data migration, system compatibility, and user resistance.

Data Backup and Rollback Strategy:

Implement a robust data backup strategy to prevent data loss, ensuring regular backups before and during the implementation. Develop a detailed rollback plan for unforeseen issues.

Phased Rollout:

Opt for a phased rollout strategy to facilitate easier monitoring, quick issue identification, and controlled rollback capabilities if needed.

User Training and Support:

Provide extensive training to users and establish a dedicated support system to address queries and concerns, contributing to a smoother transition.

Parallel Operation as a Backup:

Maintain parallel operation of the old system initially, serving as a backup to ensure business continuity in case of critical issues with the new system.

Incremental Testing:

Conduct incremental testing throughout the implementation process to identify and address issues early on, focusing on individual components before integration.

Vendor Support and Escalation:

Establish clear communication channels with the system vendor, ensuring a support mechanism is in place with defined escalation procedures for critical issues.

User Feedback Mechanism:

Implement a feedback mechanism for users to report issues or suggest improvements, promoting continuous improvement during implementation.

Rollback Plan:

Develop a detailed rollback plan with specific criteria for triggering a rollback, ensuring a swift response to critical situations.

Communication Plan:

Establish a robust communication plan to keep stakeholders informed about progress, issues, and resolution timelines, enhancing transparency.

Contingency Budget:

Allocate a contingency budget to address unforeseen challenges during implementation, covering additional resources or support services.

Post-Implementation Review:

Schedule a post-implementation review to assess success, identify lessons learned, and refine future implementation plans.

Legal and Compliance Considerations:

Ensure adherence to legal and compliance requirements, including data protection laws, licensing agreements, and industry regulations.

Regular Monitoring and Adaptation:

Continuously monitor the implementation process and adapt the plan based on emerging challenges or changing business requirements.

Employee Support and Change Management:

Implement change management strategies to support employees through the transition, addressing concerns and fostering a positive attitude toward change.

Security Measures:

Prioritize cybersecurity measures to safeguard sensitive data during implementation, regularly updating protocols and conducting audits.

Collaborative Testing:

Collaborate with key stakeholders in the testing process to enhance issue identification and ensure a comprehensive testing phase.

Redundancy for Critical Functions:

Identify critical functions and establish redundancy measures, including backup servers or failover mechanisms to maintain essential operations in case of system failure.

Documented Procedures:

Document all implementation procedures, including contingency measures, in a comprehensive manual to serve as a reference for the implementation team.

Post-Implementation Support Team:

Form a dedicated post-implementation support team responsible for ongoing issue resolution, process refinement, and additional training. This team acts as a bridge between users and technical support, ensuring sustained system efficiency.

Infrastructure Deployment

IT infrastructure deployment involves defining the sequence of operations or steps, often referred to as a deployment plan, that must be carried to deliver changes into a target system environment (Medium, 2018).

Objective:

Effectively establish the required infrastructure to seamlessly deploy and support the implementation and operation of the MarkScents Inventory Management System.

Infrastructure Components

Infrastructure Components	Minimum Requirements	Recommended
Web Server	Standard web server with PHP and MySQL support	Specialized server with scalable resources to accommodate future expansion.
Database Server	MySQL database server	Dedicated database server with sufficient storage and processing capabilities in isolation.
Network Devices	Basic network switch	Supervise the switch for enhanced control and security.
Router	Standard home router	High-performance router equipped with advanced security features designed for enterprise-level use.
Client Computers	Standard desktop or laptop computers with web browser access	Upgrade computers with contemporary specifications to ensure optimal performance.

Table 9. Infrastructure Components of Mark Scents Inventory Management System

The inventory management system comprises several crucial components. The web server hosts the system's web application, enabling user access through web browsers. The database stores essential inventory data, encompassing product details, stock levels, and sales history. The network serves as the connectivity framework linking all system components. Users interact with the system via devices such as desktop computers, laptops, and mobile phones. To meet system requirements, a minimum specification includes a standard web server with PHP and MySQL support, a MySQL database server, a basic network switch, and standard desktop or laptop computers with web browser access. For optimal performance and scalability, the recommended specifications include a specialized web server with scalable resources, a dedicated database server with

ample storage and processing capabilities, a supervised network switch for enhanced control and security, and upgraded computers with contemporary specifications. These recommendations aim to ensure the efficient operation and future scalability of the inventory management system.

Owned by: rzl and sicken

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APPENDICES

APPENDIX - A

Evaluation Tool Unit Testing Test Form

Login Function	Functional	Non-Functional
Confirm access is granted when using legitimate administrator credentials.		
Confirm access is granted with legitimate staff credentials.		
User Management		
Create a new user.		
Modify user information and verify that the updated details are accurately reflected.		
Remove an existing user and confirm their deletion.		
Customers Management		
Add a new customer.		
Modify customer information and verify that the updated details are accurately reflected.		
Remove an existing customer and confirm their deletion.		
Sales Management		
Add new sales.		
Verify that the quantity sold is accurate.		
Ensure that the total amount matches the quantity sold.		
Confirm the accuracy of the staff's record.		
Categories Management		
Add a new category.		

Verify whether the added category will be displayed in the category log.		
Modify category information and ensure that the updated details are accurately reflected.		
Remove an existing category and confirm its deletion.		
Products Management		
Add a new product.		
Modify product information and ensure that the updated details are accurately reflected.		
Remove an existing product and confirm its deletion.		

Integration Testing Test Form

Users Management Integration	Functional	Non-Functional
Confirm that user credentials are integrated correctly into the system.		
Verify that access control mechanisms function properly.		
Test the integration of user roles and permissions.		
Customer Integration Testing		
Validate the seamless integration of customer information.		
Confirm that adding, modifying, or removing customers are working.		

Test the integration of customer data.		
Sales Integration Testing		
Test the synchronization of sales data with customer information.		
Confirm that sales data is appropriately reflected in relevant categories and products.		
Categories Integration Testing		
Validate the proper association of products with their respective categories.		
Products Integration Testing		
Verify that adding, modifying, or removing products integrates seamlessly across the system.		

System Testing Test Form

Test	Pass	Fail
Examine the response times of the system.		
Evaluate the clarity of the user interface.		
Assess the functionality of key system features.		
Examine the susceptibility of the system to security threats.		
Test the accuracy of input and output processes.		
Confirm the completeness of logs.		

Acceptance Testing Test Form

User Interface (UI) Testing:	Pass	Fail
Assess the comprehensibility, uniformity, and compliance with design standards of the overall user interface.		
Verify the functionality and well-designed nature of all interactive elements, including buttons, links, and forms.		
Functionality Testing:		
Evaluate every significant feature delineated in the specifications.		
Data Management:		
Verify the accuracy and integrity of input and output test data.		
User Acceptance:		
Verify the system's ease of comprehension and navigation.		
Evaluate the system's usability and user satisfaction.		

APPENDIX - B

Sample Input/Output/Reports

Admin Dashboard

Total Sale: ₱2193.00 | **Products:** 20 | **Users:** 3 | **Customers:** 9

No out-of-stock products!
All products are currently in stock. Great job!

Stock Level Bar Chart (approximate values):

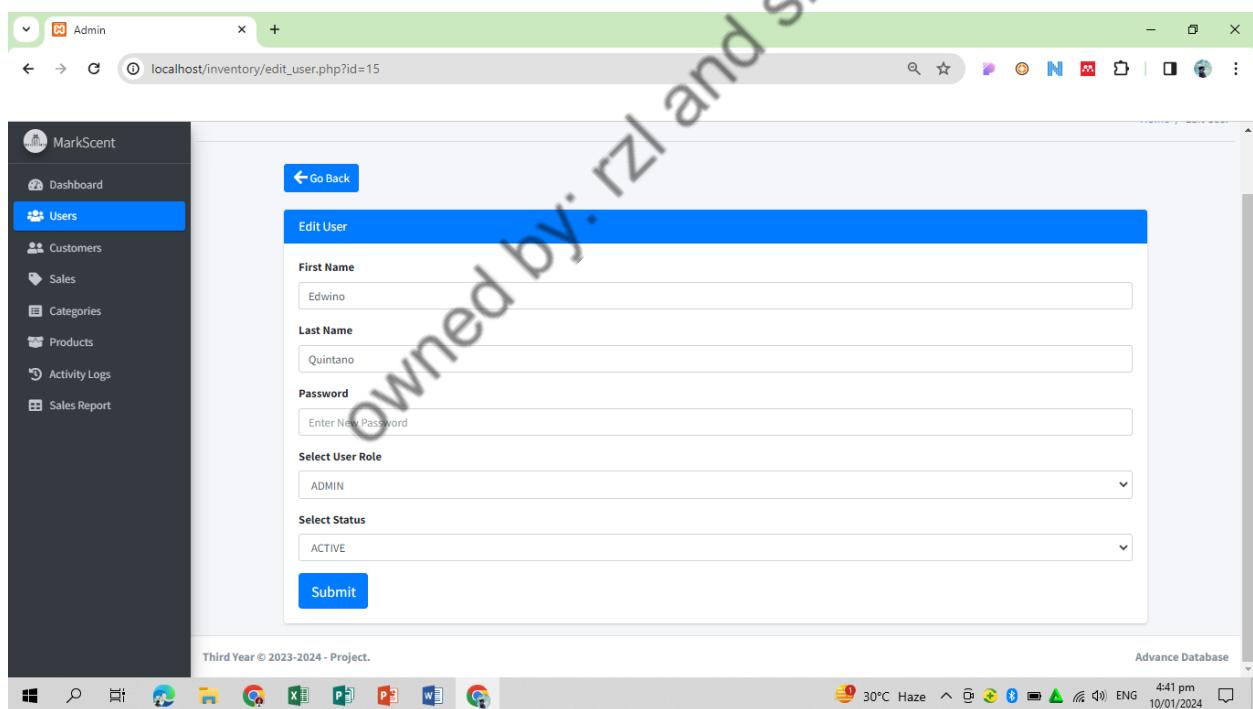
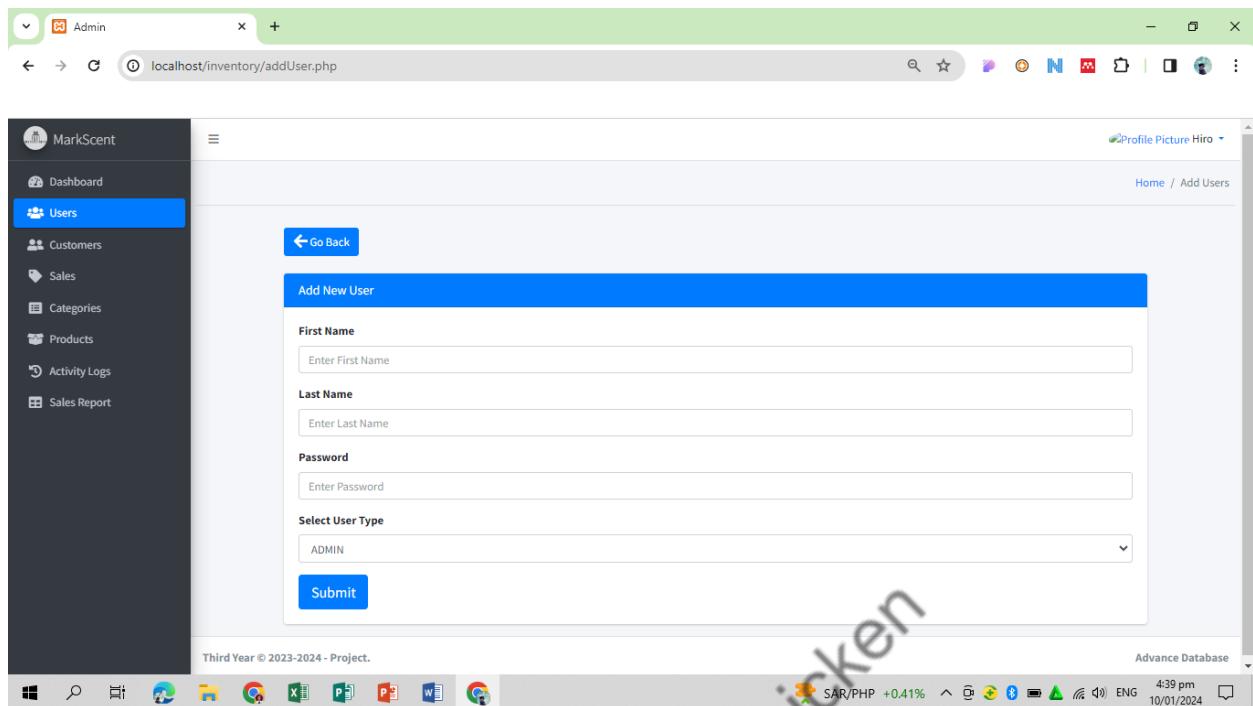
Category	Stock Level
1	100
2	100
3	100
4	100
5	100
6	100
7	300
8	500
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100

User List

ID no.	User Name	First Name	Last Name	User Role	Status	Date Created	Date Updated	Action
15	Hiro	Edwino	Quintano	Admin	Active	2023-12-16 17:54:24	2023-12-19 17:31:58	Edit Delete
16	razz	Razel Ann	Puto	Employee	Active	2023-12-19 16:03:41	2023-12-19 17:28:34	Edit Delete
17	lpara293	Lenie	Para	Employee	Active	2023-12-20 08:55:36	2023-12-20 08:55:36	Edit Delete

Showing 1 to 3 of 3 entries

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Screenshot of the 'Settings' page in the MarkScent application.

The URL in the browser is `localhost/inventory/account_settings.php?id=15`.

The left sidebar shows navigation links: Dashboard, Users, Customers, Sales, Categories, Products, Activity Logs, and Sales Report. The 'Customers' link is highlighted.

The main content area has a blue header bar labeled 'Settings'. It contains fields for User Name (Hiro), First Name (Edwino), Last Name (Quintano), and Password (Enter New Password). There is also a 'Profile Picture' input field with a 'Choose File' button and a message 'No file chosen'. A 'Submit' button is at the bottom.

At the bottom of the page, there is a footer note: 'Third Year © 2023-2024 - Project.' and a system status bar showing 'Advance Database' and various system icons.

Screenshot of the 'Customer List' page in the MarkScent application.

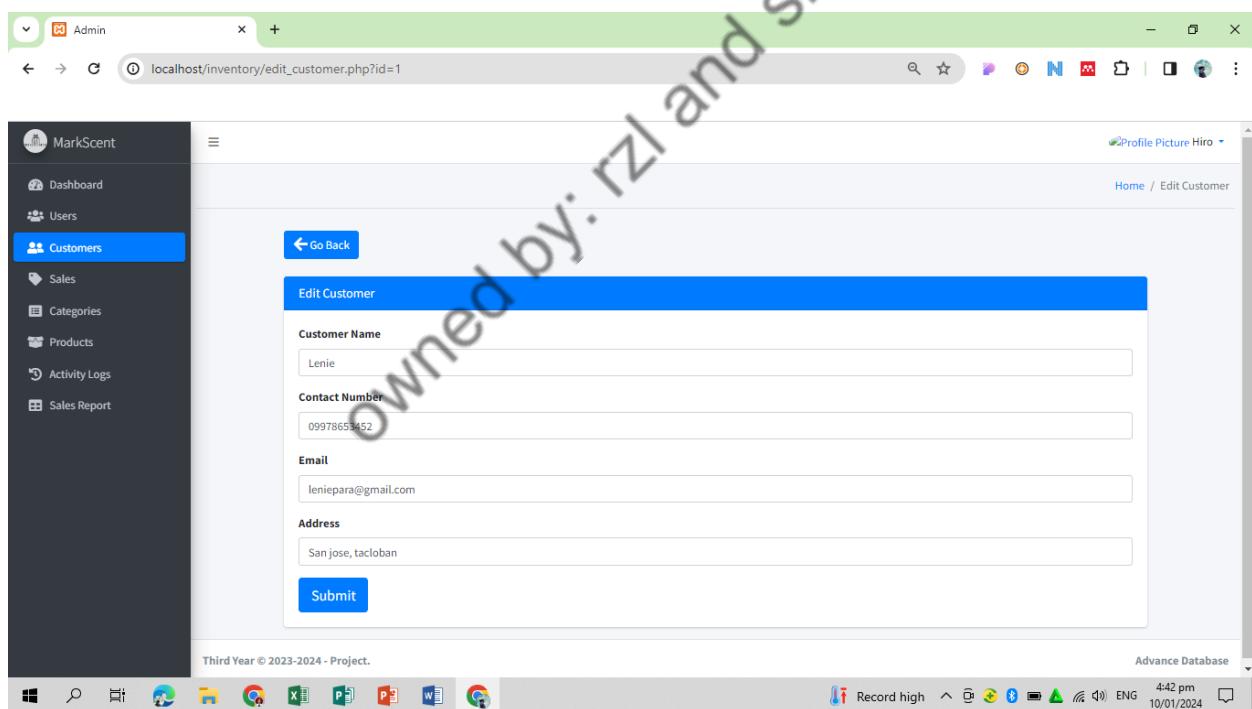
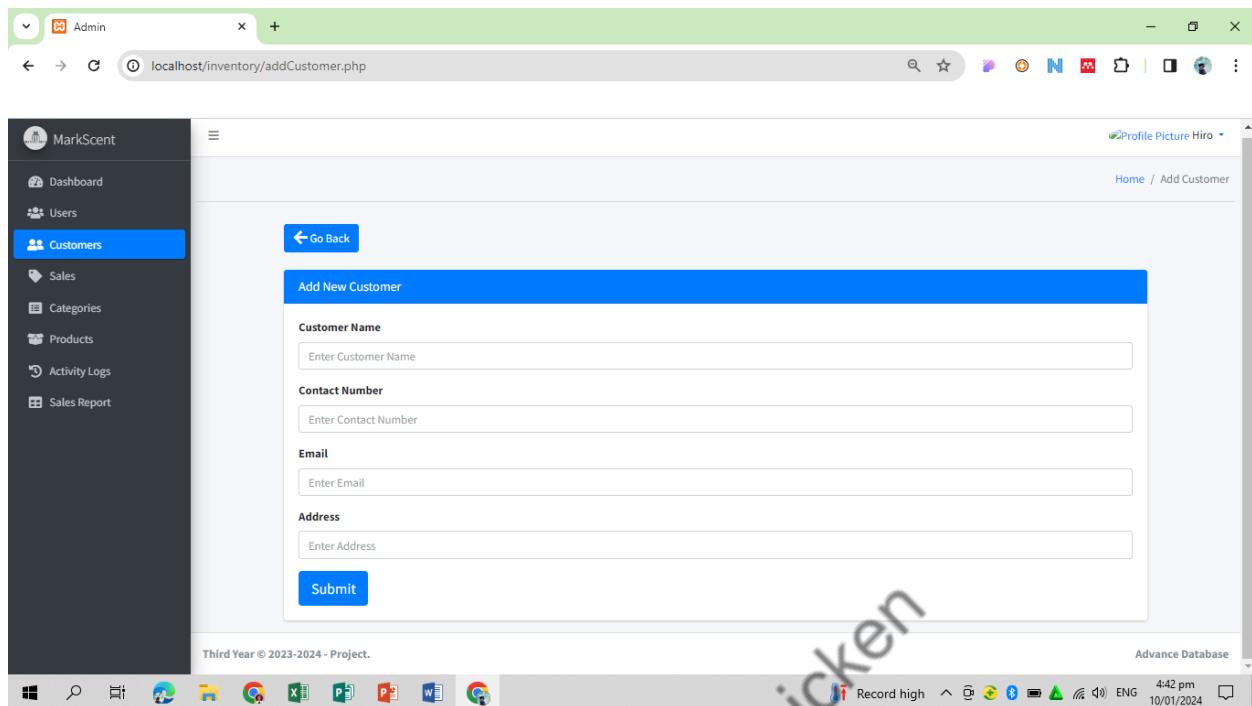
The URL in the browser is `localhost/inventory/customerList.php`.

The left sidebar shows navigation links: Dashboard, Users, **Customers**, Sales, Categories, Products, Activity Logs, and Sales Report. The 'Customers' link is highlighted.

The main content area has a blue header bar labeled 'Customer List'. It includes a search bar and a table with columns: ID no., Customer Name, Contact Number, Email, Address, Date Created, Date Updated, and Action. The table lists 7 customer entries:

ID no.	Customer Name	Contact Number	Email	Address	Date Created	Date Updated	Action
1	Lenie	09978653452	leniepara@gmail.com	San Jose, Tacloban	2023-12-19 15:51:05	2023-12-19 15:51:05	Edit Delete
2	Edwin	09978547516	quintana@gmail.com	Maribig Tanauan Leyte	2023-12-19 15:51:36	2023-12-19 15:51:36	Edit Delete
3	Razah Ann Puto	09976534251	puto@gmail.com	Sata fe	2023-12-19 15:52:27	2023-12-19 15:52:27	Edit Delete
4	Aileen Almoden	09978653651	almoden@gmail.com	Pastrana Leyte	2023-12-19 15:53:16	2023-12-19 15:53:16	Edit Delete
5	Hazel ann	09987365411	hazel@gmail.com	Tacloban	2023-12-19 15:55:14	2023-12-19 15:55:25	Edit Delete
6	Samantha lagado	09876543421	lagado@gmail.com	Dagami	2023-12-19 15:58:13	2023-12-19 15:58:13	Edit Delete
7	Mark Tolentino	09975435261	mark@gmail.com	Palo	2023-12-19 15:59:20	2023-12-19 15:59:20	Edit Delete

At the bottom of the page, there is a footer note: 'Record high' and a system status bar showing 'ENG 442 pm 10/01/2024'.



Dashboard

localhost/inventory/saleList.php

Sale List

ID no.	Product Name	Customer Name	Sale by	Quantity Sold	Total Amount	Date Created	Date Updated	Action
2	Sugared Serenity	Mark Tolentino	Hiro	1	250.00	2023-12-19 17:14:32	2023-12-20 08:32:02	Edit Delete
3	Mystic Rosewood	Samantha lagado	Hiro	1	450.00	2023-12-19 17:21:46	2023-12-19 17:21:46	Edit Delete
4	Sun-kissed Serenade	Hazel ann	razz	1	250.00	2023-12-19 17:27:27	2023-12-19 17:27:27	Edit Delete
5	Whispering Moonlight	Mark Tolentino	razz	1	199.00	2023-12-19 17:27:48	2023-12-19 17:27:48	Edit Delete
6	DapperGlow	Razel Ann Puto	Hiro	1	199.00	2023-12-19 22:28:13	2023-12-19 22:28:13	Edit Delete
8	VibrantElegance	Aileen Almoden	Hiro	1	350.00	2023-12-20 10:11:03	2023-12-20 10:11:03	Edit Delete
9	SolarSpell	Sarah Yu	Hiro	5	495.00	2024-01-10 16:35:04	2024-01-10 16:35:04	Edit Delete

Admin

localhost/inventory/addSale.php

Add Sale

Home / Add Sale

Profile Picture Hiro

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[Go Back](#)

Product	Stock Available
--Select a Product---	
Customer	Quantity <small>(number only)*</small>
--Select Customer---	Enter Quantity
Price	Total Amount
Submit	

Screenshot of the 'Edit Sale' page in the MarkScent application.

The URL is localhost/inventory/edit_sale.php?id=2.

The sidebar menu includes: Dashboard, Users, Customers, Sales (selected), Categories, Products, Activity Logs, and Sales Report.

The main form is titled 'Edit Sale' and contains the following fields:

- Product: ID: 13 Sugared Serenity, Stock Available: 199
- Customer: ID: 7 Mark Tolentino, Quantity (number only): 1
- Price: 250.00, Total Amount: 250.00

A 'Submit' button is present at the bottom of the form.

System status bar: Third Year © 2023-2024 - Project. Advance Database. Weather: 30°C Haze. Date: 10/01/2024. Time: 4:44 pm.

Screenshot of the 'CategoriesList' page in the MarkScent application.

The URL is <localhost/inventory/categoriesList.php>.

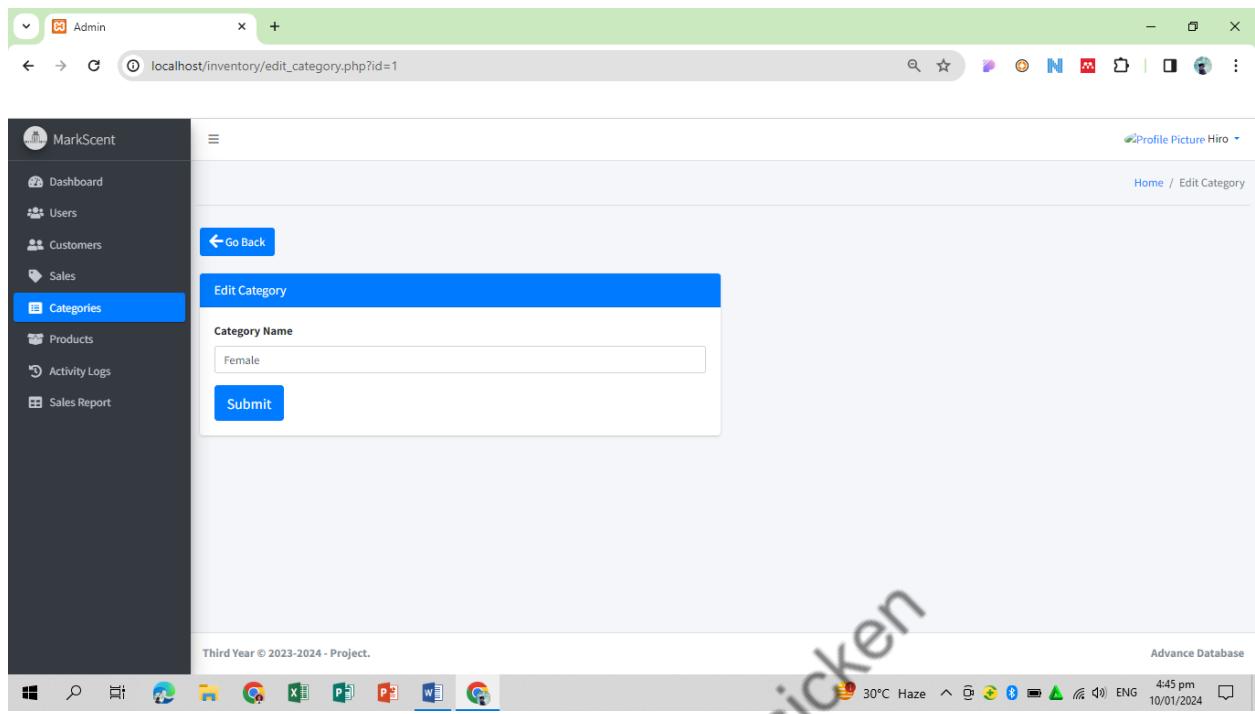
The sidebar menu includes: Dashboard, Users, Customers, Sales, Categories (selected), Products, Activity Logs, and Sales Report.

The main interface shows:

- An 'Add New Category' form with a 'Category Name' input field and a 'Submit' button.
- A table titled 'All Categories' listing two entries:

ID no.	Categories	Date Created	Date Updated	Actions
1	Female	2023-12-19 15:13:35	2023-12-19 15:13:35	Edit Delete
2	Male	2023-12-19 15:13:51	2023-12-19 15:13:51	Edit Delete

System status bar: Third Year © 2023-2024 - Project. Advance Database. Weather: 30°C Haze. Date: 10/01/2024. Time: 4:44 pm.



Admin

localhost/inventory/edit_category.php?id=1

Profile Picture Hiro

Home / Edit Category

MarkScent

- Dashboard
- Users
- Customers
- Sales
- Categories**
- Products
- Activity Logs
- Sales Report

Edit Category

Category Name

Female

Submit

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Advance Database

Sunset coming 4:46 pm 10/01/2024

This screenshot shows the 'Edit Category' page of the MarkScent application. The left sidebar is dark with white icons and text, showing links for Dashboard, Users, Customers, Sales, Categories (which is selected and highlighted in blue), Products, Activity Logs, and Sales Report. The main content area has a light background. It features a 'Category Name' input field containing 'Female', a 'Submit' button at the bottom, and a 'Go Back' button above it. At the top right, there's a profile picture placeholder for 'Hiro'. The status bar at the bottom indicates 'Third Year © 2023-2024 - Project.' and 'Advance Database'. The system tray shows the date and time as 'Sunset coming 4:46 pm 10/01/2024'.

Admin

localhost/inventory/productList.php

Add Product

Product List

Search

MarkScent

- Dashboard
- Users
- Customers
- Sales
- Categories
- Products**
- Activity Logs
- Sales Report

ID no.	Product Name	Description	Category	Stock Quantity	Unit Price	Date Created	Date Updated	Action
1	DapperGlow	Refined, Timeless, Masculine, Alluring, Sophisticated	Male	99	199.00	2023-12-19 15:42:05	2023-12-19 22:28:13	Edit Delete
2	UrbanWhisk	Modern, Energizing, Confident, Urbane, Magnetic	Male	100	99.00	2023-12-19 15:42:28	2023-12-19 15:42:28	Edit Delete
3	GentleBreeze	Calm, Elegant, Subtle, Fresh, Approachable	Male	100	100.00	2023-12-19 15:42:52	2023-12-19 15:42:52	Edit Delete
4	MysticEmbrace	Enigmatic, Mysterious, Sensual, Invigorating, Unique	Male	200	199.00	2023-12-19 15:43:17	2023-12-19 15:43:17	Edit Delete
5	NobleAura	Regal, Commanding, Classic, Refined, Distinctive	Male	100	299.00	2023-12-19 15:43:40	2023-12-19 15:43:40	Edit Delete
6	AztecSerenade	Fresh, Crisp, Blue, Invigorating, Serene	Male	100	99.00	2023-12-19 15:43:40	2023-12-19 15:43:40	Edit Delete

Sunset coming 4:46 pm 10/01/2024

This screenshot shows the 'Product List' page of the MarkScent application. The left sidebar is identical to the previous one. The main content area displays a table titled 'Product List' with a blue header. The table has columns for ID no., Product Name, Description, Category, Stock Quantity, Unit Price, Date Created, Date Updated, and Action (with 'Edit' and 'Delete' buttons). There are six rows of product data. The status bar at the bottom indicates 'Sunset coming 4:46 pm 10/01/2024'.

Screenshot of the "Add Product" page in the MarkScent application.

The URL in the browser is `localhost/inventory/addProduct.php`.

The sidebar menu includes:

- Dashboard
- Users
- Customers
- Sales
- Categories
- Products** (selected)
- Activity Logs
- Sales Report

The main form fields are:

- Product Name**: Enter Product Name
- Description**: Enter Description
- Category**: --Select Product---
- Stock Quantity (number only)***: Enter Stock
- Unit Price (number only)***: Enter Unit Price

System status bar at the bottom right shows: 30°C Haze, ENG, 4:47 pm, 10/01/2024.

Screenshot of the "Edit Product" page in the MarkScent application.

The URL in the browser is `localhost/inventory/edit_product.php?id=1`.

The sidebar menu is identical to the previous screenshot.

The main form fields are:

- Product Name**: DapperGlow
- Description**: Refined, Timeless, Masculine, Alluring, Sophisticated
- Category**: Male
- Stock Quantity (number only)***: 99
- Unit Price (number only)***: 199.00

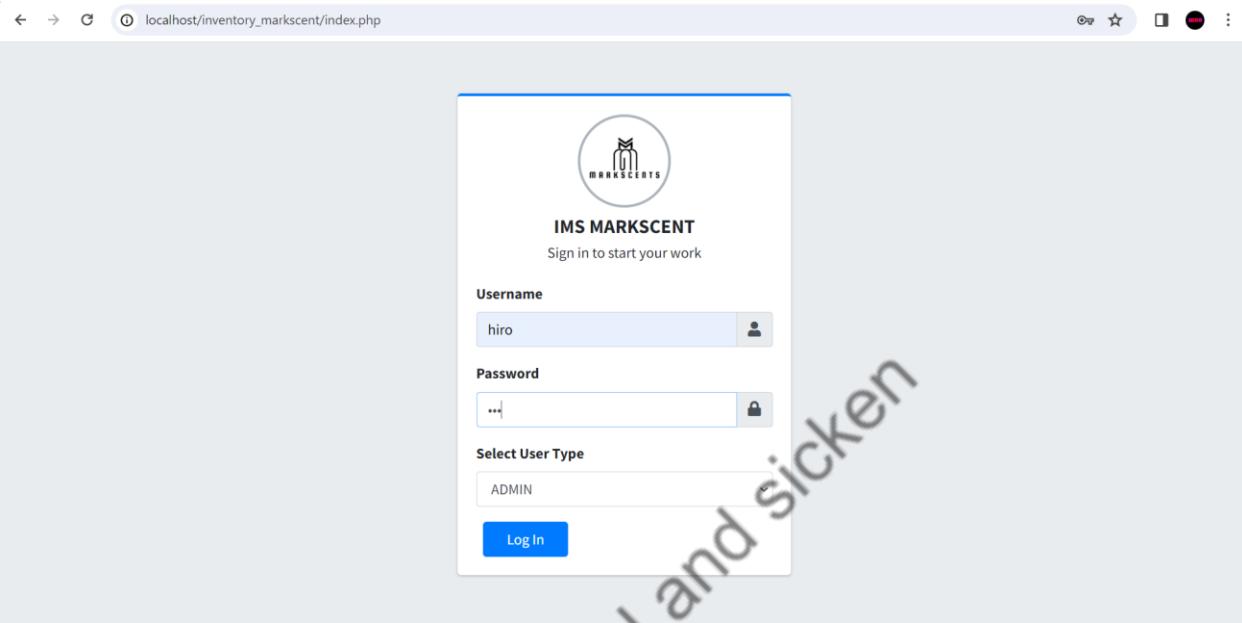
A blue "Submit" button is visible at the bottom of the form.

System status bar at the bottom right shows: 30°C Haze, ENG, 4:47 pm, 10/01/2024.

The screenshot shows a web browser window with a green header bar. The title bar says "Admin" and the address bar shows "localhost/inventory/act_Admin_logs.php". The main content area has a dark sidebar on the left with icons for Dashboard, Users, Customers, Sales, Categories, Products, Activity Logs (which is highlighted in blue), and Sales Report. The main panel has a blue header "Activity Logs" with a search bar. Below is a table with columns: Trail ID, Username, User Role, Action, and Date. The table lists 11 entries made by a user named Hiro, all as Admin, on December 19, 2023, between 15:13:35 and 15:22:52. Each entry adds a new category or product to the list.

Trail ID	Username	User Role	Action	Date
1	Hiro	Admin	Added Female as Category.	2023-12-19 15:13:35
2	Hiro	Admin	Added Male as Category.	2023-12-19 15:13:51
3	Hiro	Admin	Added DapperGlow to Product list.	2023-12-19 15:18:40
4	Hiro	Admin	Added UrbanWhisk to Product list.	2023-12-19 15:19:08
5	Hiro	Admin	Added GentleBreeze to Product list.	2023-12-19 15:19:37
6	Hiro	Admin	Added MysticEmbrace to Product list.	2023-12-19 15:20:08
7	Hiro	Admin	Added NobleAura to Product list.	2023-12-19 15:20:28
8	Hiro	Admin	Added AzureSerenade to Product list.	2023-12-19 15:20:48
9	Hiro	Admin	Added VibrantElegance to Product list.	2023-12-19 15:22:09
10	Hiro	Admin	Added RuggedCharm to Product list.	2023-12-19 15:22:32
11	Hiro	Admin	Added VelvetWhisper to Product list.	2023-12-19 15:22:52

The screenshot shows a web-based inventory management system. On the left, a dark sidebar menu lists navigation options: Dashboard, Users, Customers, Sales, Categories, Products, Activity Logs, and Sales Report, with the last one being the active tab. The main content area has a light gray background. At the top, there's a date range selector showing '2023-12-20' and '2024-01-10' with a 'Generate Report' button. To the right, a large table displays the 'Sale Report From 2023-12-20 To 2024-01-10'. The table has columns for Date, Product Name, Customer Name, Sale by, Unit Price, Quantity, and Total. Two rows of data are shown: one for 'VibrantElegance' sold to 'Aileen Almoden' by 'Hiro' for \$350.00, and another for 'SolarSpell' sold to 'Sarah Yu' by 'Hiro' for \$99.00. A 'Grand Total: P845.00' summary is at the bottom. On the far right, there are 'Print Report' and 'Advance Database' buttons. The browser address bar shows 'localhost/inventory/sales_report.php'. The system interface includes a header with a profile picture for 'Hiro' and standard browser controls.



Owned by: rzl and sicken

APPENDIX – C

USER'S GUIDE

1. Accessing the Login Page:

Open your web browser and navigate to the MarkScents system. The login page will appear as the initial screen.

2. Inputting Login Credentials:

Enter your login credentials into the provided fields, ensuring accuracy to prevent authentication issues.

3. Admin Login:

If identified as an admin, you will be automatically redirected to the admin dashboard, where you can access and manage administrative functions and settings.

4. Staff Login:

If identified as staff, your staff profile will be displayed, and you will be directed to the staff dashboard, offering task-specific functionalities.

5. Lack of Privileges:

If your login credentials lack admin or staff privileges, you will remain on the login page. If you believe this is an error, please contact the system administrator.

6. Troubleshooting:

If you encounter login issues, double-check the accuracy of your credentials. If problems persist, consider reaching out to the system administrator for assistance.

7. Security Measures:

Ensure the confidentiality of your login credentials to prevent unauthorized access. For enhanced security, always log out when your session is complete.

8. Admin Dashboard Functions:

Familiarize yourself with and make use of admin-specific features for effective system management.

9. Staff Dashboard Functions:

Access and execute tasks pertinent to your staff role. Leverage features designed to enhance workflow efficiency and collaboration.

10. Logout Process:

To conclude your session, locate the logout option within the dashboard. Confirm the logout to securely exit the system.

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