

STOCK INVENTORY
MANAGEMENT SYSTEM (RMSys)

FARRA ALIA BINTI ROSLI

Bachelor of Computer Science (Software
Engineering) with Honours

UNIVERSITI MALAYSIA PAHANG

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(Supervisor's Signature)

Full Name : Ts. Dr. Abdul Sahli bin Fakharudin

Position : Lecturer

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(Student's Signature)

Full Name : FARRA ALIA BINTI ROSLI

ID Number : 001110010280

Date : 11th July 2023

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FARRA ALIA BINTI ROSLI

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ABSTRAK

Projek ini adalah berkenaan dengan sistem pengurusan inventori yang juga bermaksud sebagai alat perisian yang dapat membantu perniagaan menjejak dan mengurus tahap inventori, pesanan, jualan, dan penghantaran. Sistem ini membolehkan pengesanan tahap inventori yang cekap, menetapkan pesanan semula, dan memproses pesanan pembelian dengan lebih cepat. Hal ini dapat membantu perniagaan tersebut untuk memastikan mempunyai stok produk yang betul dan cukup pada masa yang betul. Ia juga dapat mengurangkan lebihan inventori dan kos bawaan yang berkaitan. Sistem ini tersedia untuk beberapa kategori pengguna termasuklah pemilik perniagaan, pengurus cawangan dan juga kerani. Ini adalah untuk membantu mereka memberikan pandangan yang lebih komprehensif tentang operasi perniagaan. Secara keseluruhannya, sistem pengurusan inventori boleh membantu meningkatkan kecekapan dan keuntungan untuk perniagaan.

ABSTRACT

This project is about an inventory management system which defined as a software tool that helps businesses track and manage their inventory levels, orders, sales, and deliveries. The system allows for efficient tracking of inventory levels, setting re-order points, and manage flow of the stock purchases. This helps the businesses to ensure they have the right products with the right quantity at the right time, while also reducing excess inventory and associated carrying costs. The system are available with several category of users such as owner, branch manager, and also clerk user. This is to helps them to provide a more comprehensive view of the business operation. Overall, an inventory management system can help improve efficiency and profitability for a business.

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LIST OF ABBREVIATIONS

RMSys	RMS system
ERD	Entity Relationship Diagram
GUI	Graphical User Interface
PHP	Hypertext Preprocessor
ID	Identification
mySQL	Structured Query Language

CHAPTER 1: INTRODUCTION

1.1 Background of Study

Due to the current global economic crisis, many people are affected by the job losses and declining business income. Because of that circumstances, those who are affected has comes with their alternatives ways to generate income and sustain their livelihoods. One of the leading solutions for them is by starting a new business with a high demand products. Based on the conducted research, one of the top high demand is the food and beverages business sector. However, venturing into this industry needs to careful planning and execution to stand out in the competitive market. Even though the food and beverage industry may sound attractive, it's important for business owners to do careful market research and financial planning. To ensure long-term sustainability and profitability, it is essential to fully understand the target market, evaluate competitors, and estimate operating costs, including those for ingredients, equipment, and permits.

It goes without saying that an effective stock inventory management is crucial for businesses across all sectors, particularly in the food and beverage industry. They risk suffering losses on a regular basis if they can't create and implement good management of the stock of their cooking and sales materials (Lynda Moultry Belcher, 2019). It is essential for them to establish and implement effective strategies to manage their cooking and sales materials efficiently. Therefore, the business owners can find a solution by embracing current technology, specifically by implementing a stock inventory management system (Indeed Editorial Team, 2021). This can help streamline their business operations and ensure efficient management of their inventory. When it comes to stock inventory management, it involves various crucial aspects that business owners need to consider. These include tracking the quantity and availability of ingredients, raw materials, packaging supplies, and finished products. An effective stock inventory management process is necessary for running a profitable food business. The sellers can try to apply it by using the system that is already developed to help them in management. Most of the system will provide the same functions including ordering, receiving, storing,

and distributing food products (*Food Industry Inventory Management Guide for Manufacturers* — Katana, n.d.).

For the proposed system for this project which is the “RMSys System” will be focusing on the stock quantity management. This is because the system are specifically delivered for the RmsRay Company which has several branches of the business. The general purpose of this system is to manage the stock that will be distributed to all available branches. In essence, implementing a stock inventory management system provides RmsRay Company with an effective platform to track and manage their raw materials needed in the kitchen for producing their final products. By implementing those solution, the company not only ensures better stock management but also has the potential to gain more profit for the business.

1.2 Problem Statement

Oftentimes, there are significant possibilities that a company may experience problems, including losses to their business if they are unable to generate and manage their inventory well. Some of them may not have sufficient funds to purchase the required stock. Due to that problem, some ingredients or materials that are in high demand and used more frequently than others could not be sufficient for use in everyday sales. And when the supply of materials is insufficient, the company or seller may only make a small number of its products, leaving some of its regular customers unhappy if they were unable to purchase the goods.

Furthermore, there are also some materials or ingredients that will go to waste because they are over purchased due to improper stock calculations and not being utilised because of low demand. Other than that, as mentioned before, there might have insufficient stock if did not able to manage it properly. If the seller still needs to seek for the material someday, they must swiftly locate another material that is similar somewhere close by. The material that was purchased might not be of the same quality as that which was typically used for the sale. The final products' quality might not be as good as usual as an outcome of this. Of course, all of this will have a negative effect on sales since customers' perceptions of the seller will shift negatively as a result of the inconsistent quality of the products produced.

1.3 Aim & Objective

The aim is to develop an online system that can help the RmsRay company to manage their stock of raw materials and ingredient for the sales product preparation. In this project, there will be 3 types of user which is branch manager, clerk, and owner. The Clerk will be able to manage the user registration, manage product and manage branches product limit. The Branch Manager user are responsible to update their weekly sales of the branch and upload their evidence of the sales. They are also able to request the selected products on the system. Lastly, the Owner will be able to manage the status of the uploaded evidence from the Branch Manager. The objective is as below;

1. To design the RMSys system.
2. To develop the RMSys system.
3. To test the functionality of the RMSys system.

1.4 Scope

- Only RmsRay company has the access to use the RMSys system. The system will be focusing on this company to satisfy the clients' needs in the system.
- The system can only be used to manage the stock of raw materials and ingredients that being used for the preparation of the end products of the RmsRay companies selling.
- Clerk user can login to the system and manage the other user registration by add, update, and delete the selected user account. Clerk also responsible to manage the product (create, read, update, delete), and manage the branches request limit.
- Branch Manager user will be able to upload their weekly sales with evidence and request for the product stock quantity.
- Owner are responsible to approve or reject the uploaded sales evidence uploaded by the Branch Manager.

1.5 Significance of Project

The purpose of this project is to replace the client's present manual stock inventory management system with one that is systematic. Since this system will have numerous features to keep the stocks under control, all management can be done in an easy way. They will be able to increase their sales when they practice good stock inventory management because it may prevent any issues with the management of commercial items (Ginting, 2022).

1.6 Thesis of Organization

The 3 main chapters of this report are the Introduction, Literature Review, and Methodology. The general concept of the suggested project will be discussed in Chapter 1's Introduction. It includes a background analysis, problem statement, objective, project scope, and project significance. In Chapter 2, which is titled "Literature Review," the current systems that serve the same role as the project are fundamentally compared. The two essential components are Work Relevancy and Work Analysis. Last but not least, Chapter 3, or Methodology. This chapter can be regarded as the most important because it is here that the best development strategy will be decided after taking into account a number of factors. Project Management Framework, Project Requirement, Data Design, Testing Plan, etc. are all included in this chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter to assist any sellers who want to acquire a better management of their stock inventory, there are currently numerous inventory management systems that are already available and developed on the website that are offering the very similar functionalities. When compared to other websites that are available on the internet or public, most websites will each have their own advantages and disadvantages in term of the quality, design, functionality, and other aspects.

2.2 Existing System

Referring to the research that has been done through the internet surfing, there are numerous existing website that sharing the same purposes with RMSys including foodmarkethub.com website, sortly.com website, and xero.com website. All of these website are already achieve their aim and goals of the website system which is to assist sellers in order to get a better and proper stock inventory management of their business sales.

Food Market Hub System

Food Market Hub is a system for managing inventories and procurement for the food and beverage industry. Back-end activities like ordering, inventory management, and an effective inventory and cost management solution are optimized and automated by this platform. One of the aim of this system is to help the seller to avoid any of their ingredients and food often go to waste because of their bad stock inventory management. This website system will shows the exact total stocks to order and produce based on the sales history (*Procurement & Inventory Management System for Restaurants | Food Market Hub*, n.d.).

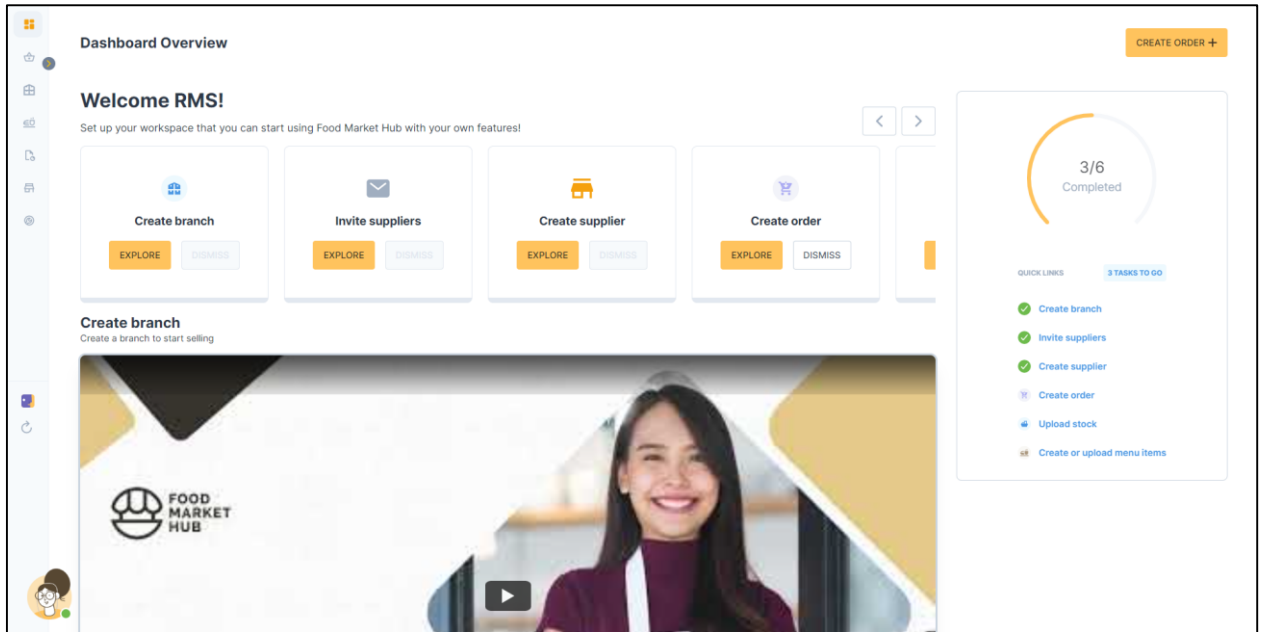


Figure 2.1 Food Market Hub Dashboard

Products

+ UPLOAD PRODUCT **IMPORT / EXPORT**

Search 2 products

Product code	Branch	Product alias name	Master product	Description	Tags	Actions
123	-	ABRF BLACK PEPPER CHICKEN CHOP / 黑椒鸡扒	ABRF BLACK PEPPER CHICKEN CHOP / 黑椒鸡扒	-	-	ACTIONS
1234	-	Rice Flour / Tepung Beras (500g)	Rice Flour / Tepung Beras (500g)	-	-	ACTIONS

You have reached the last data

Figure 2.2 Food Market Hub Products Page.

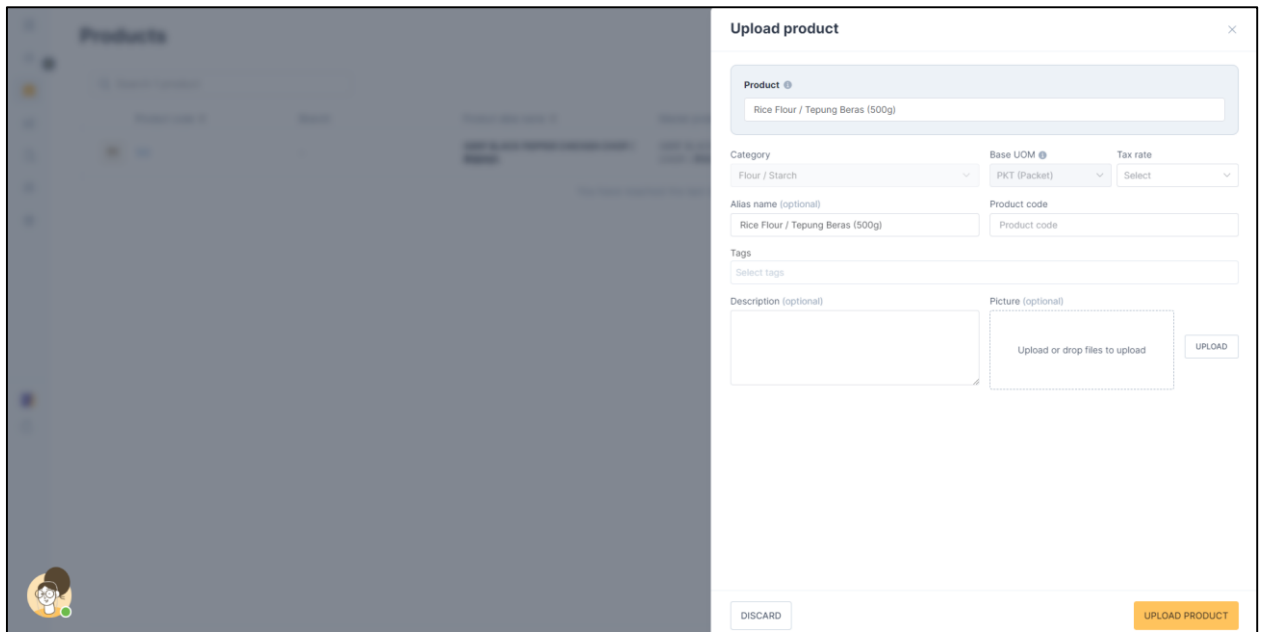


Figure 2.3 Food Market Hub Upload Product Page.

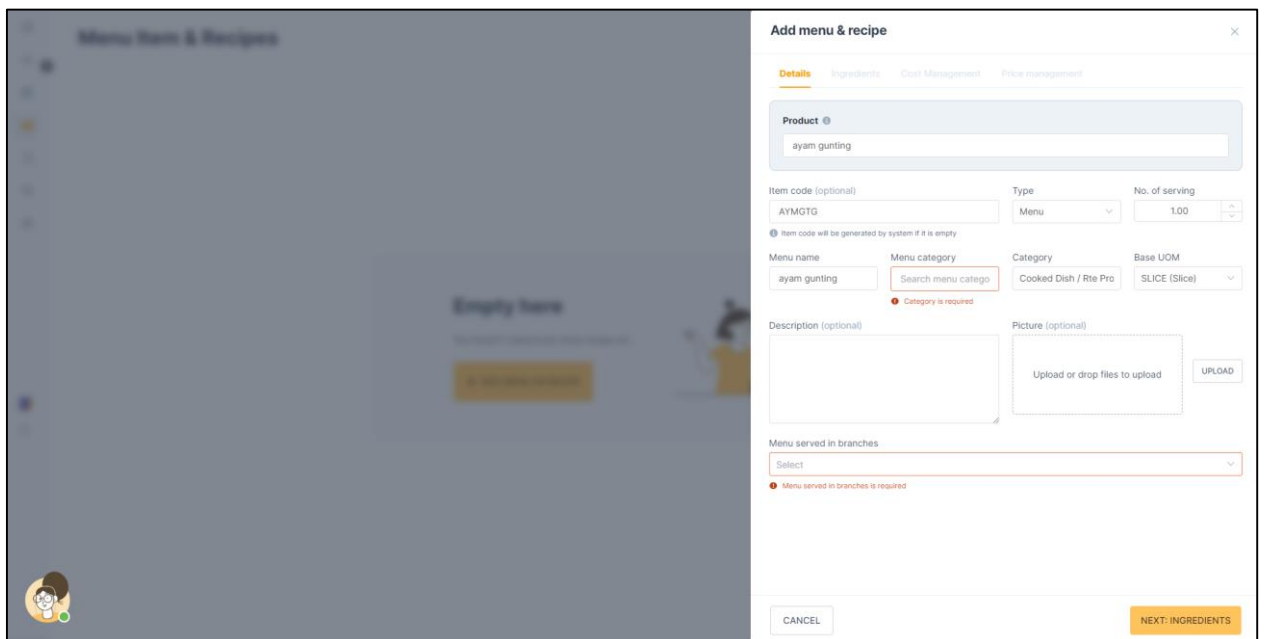


Figure 2.4 Food Market Hub Add Menu Page.

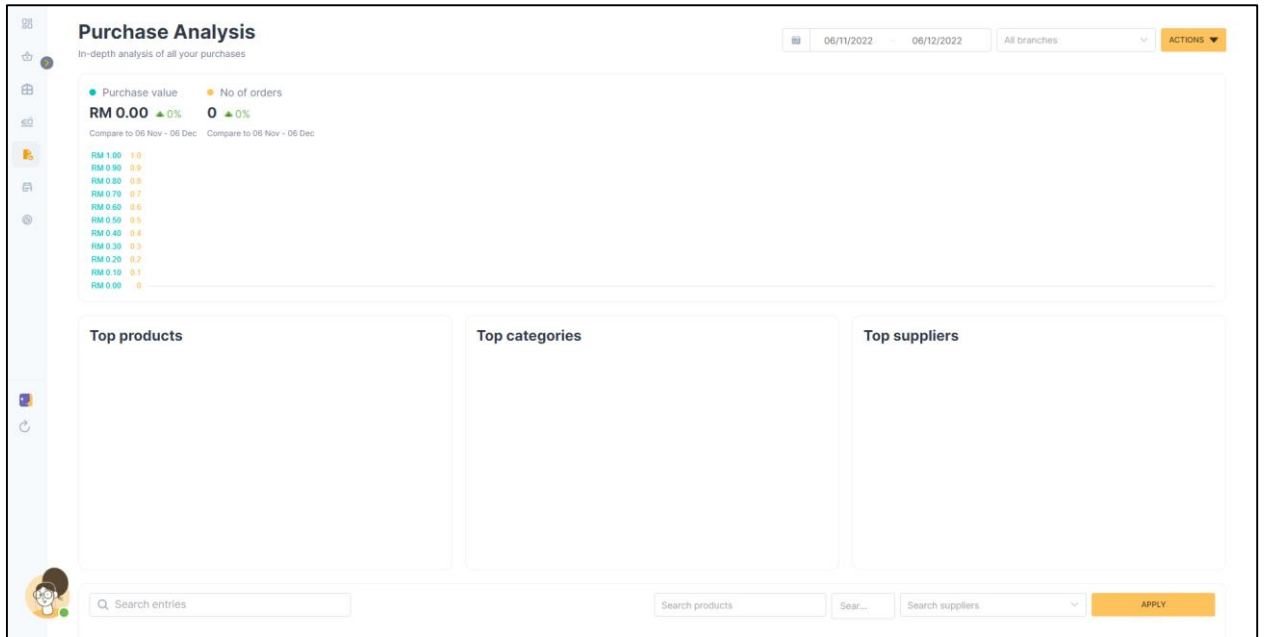


Figure 2.5 Food Market Hub Purchase Analysis Page.

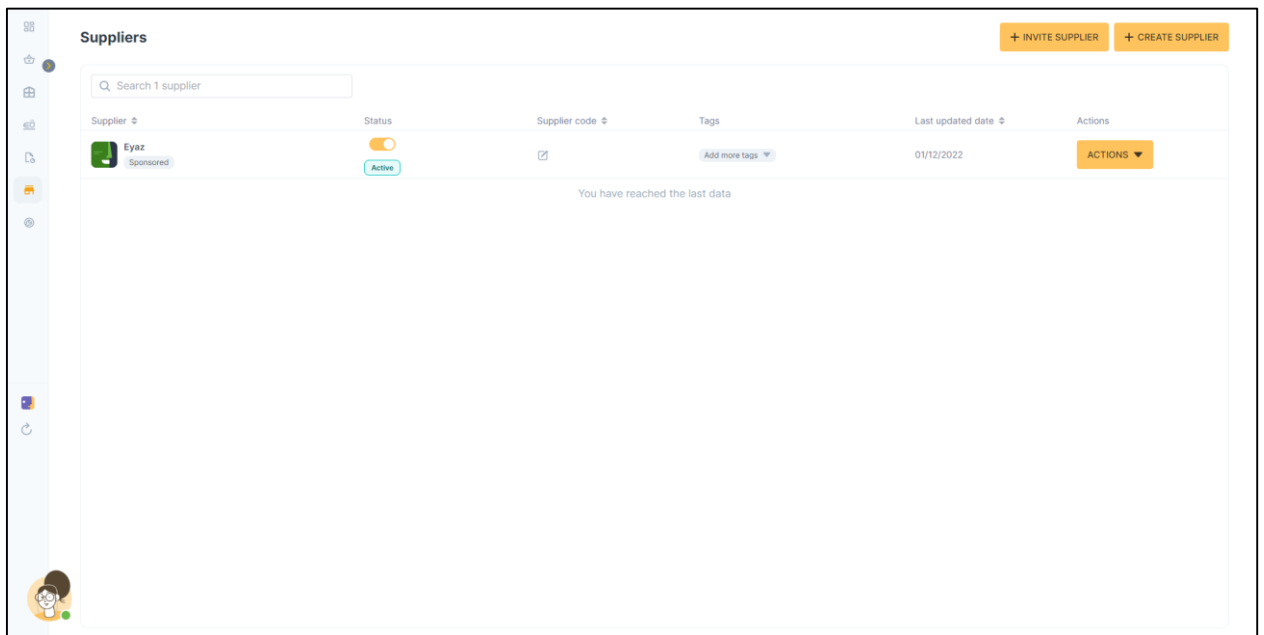


Figure 2.6 Food Market Hub Supplier Page.

This Food Market Hub website system can be categorized as a good inventory management system since it provides many advantages of the website system, including;

- The website's design is straightforward but attractive. The system features a clear activity flow, which qualifies the website as user-friendly because users can immediately know how to use it when first time using it.
- This system allow the users especially for the restaurant users to search their products that has been uploaded in the system to be inserted to their business account. If the entered product are not yet available in the system, they can upload their own product manually by insert the product's details or they also can just import the product by upload the available file in their devices.
- Provides the chat section that will connect the users directly to the customer services. The users can communicate with them if there is any problem or question that they want to ask about their account in the system.

Although this website has numerous benefits, it also has several downsides that may be improved to make it even better. A few of the disadvantages are as follows:

- It cannot be disputed that this website includes useful features for cost and price management calculations that must be completed by information from the business's menu and recipe sections. However, several users, particularly newcomers, were unable to estimate their costs. The system did not provide them with any other options, such as a clear user manual to perform the calculation.

Sortly System

Another selected existing system to be compared is the Sortly website system. Sortly are also an inventory and asset tracking and management system that will allow the users to visually tracks the selected item and its details about quantity, price, condition, remark notes, etc. There are also providing several functionality including Catalog- to add own products to the inventory with its details, Manage – update inventory by categorizing it by folders, Report – generate simple report of current inventory activity that can be export to the users, etc. All of these functionality would make the system to be a good stock inventory management system (*What Is Sortly? – Sortly Support, n.d.*).

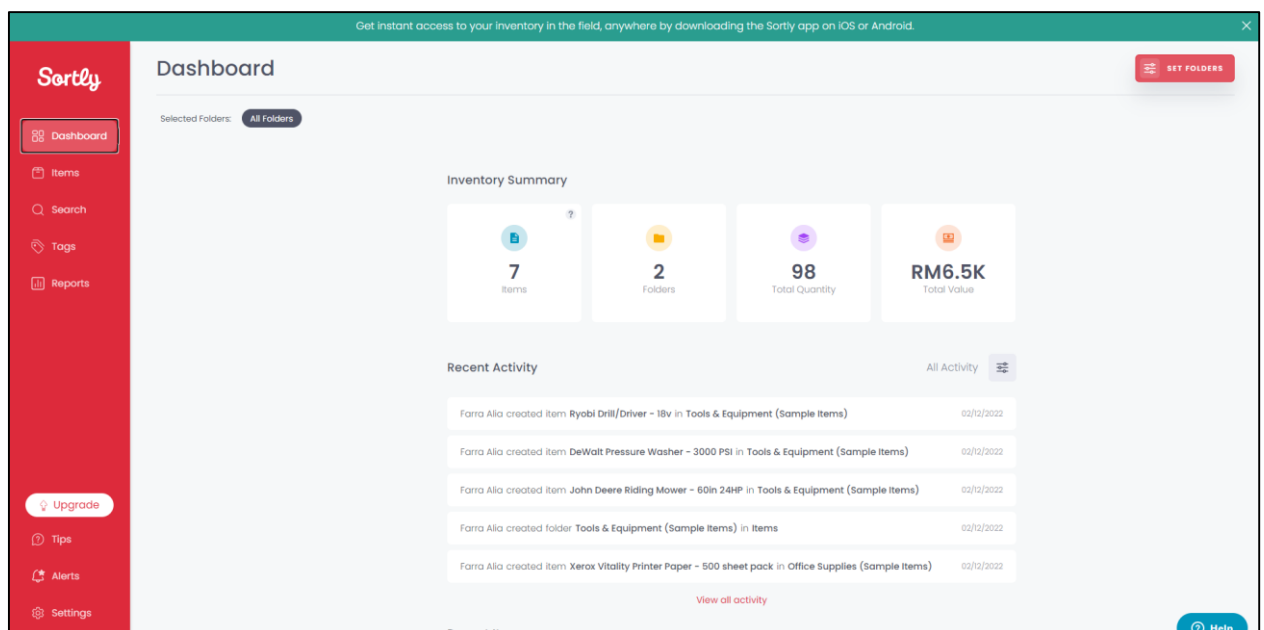


Figure 2.7 Sortly Dashboard Page.

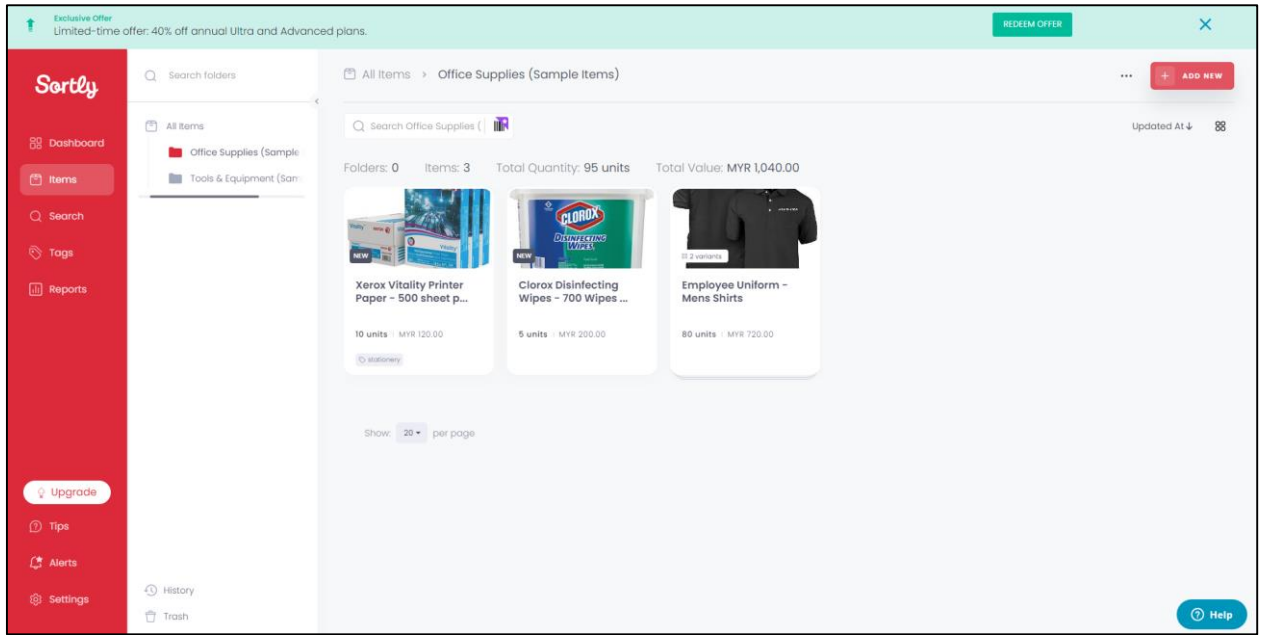


Figure 2.8 Sortly Item Page

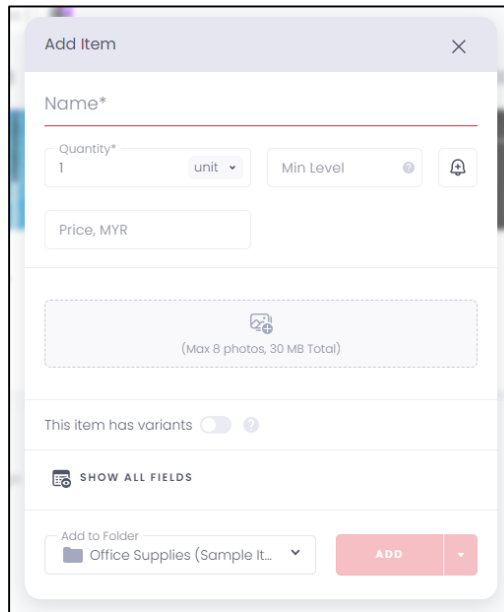


Figure 2.9 Sortly Add Item Page.

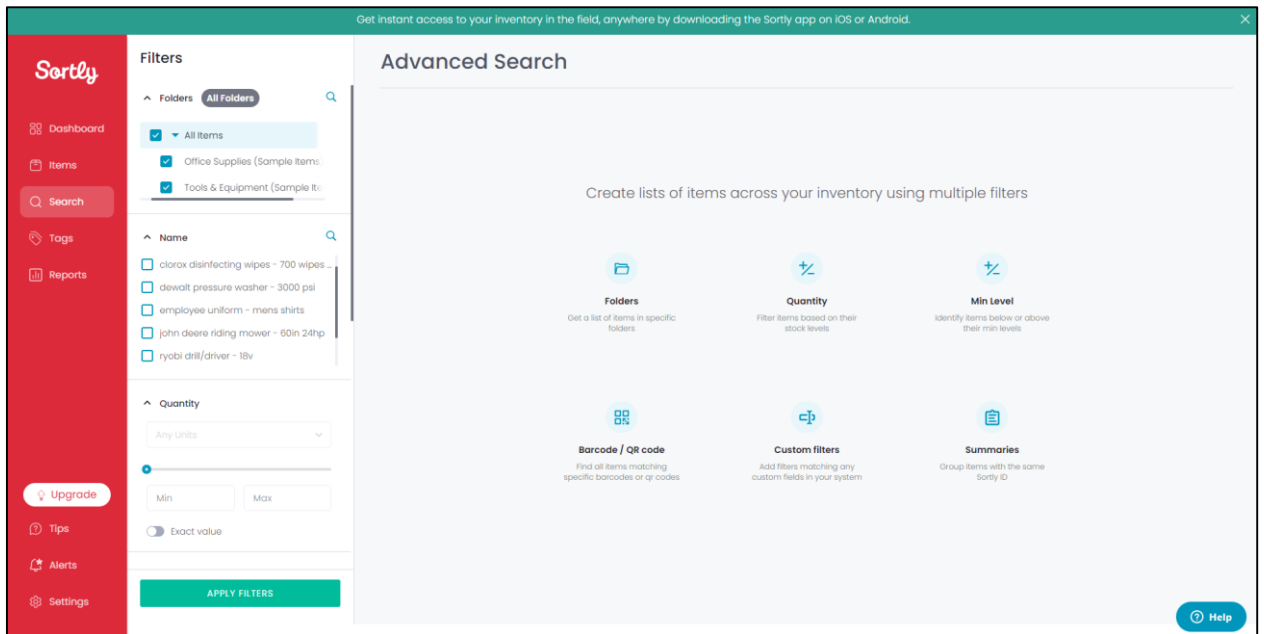


Figure 2.10 Sortly Search Page.

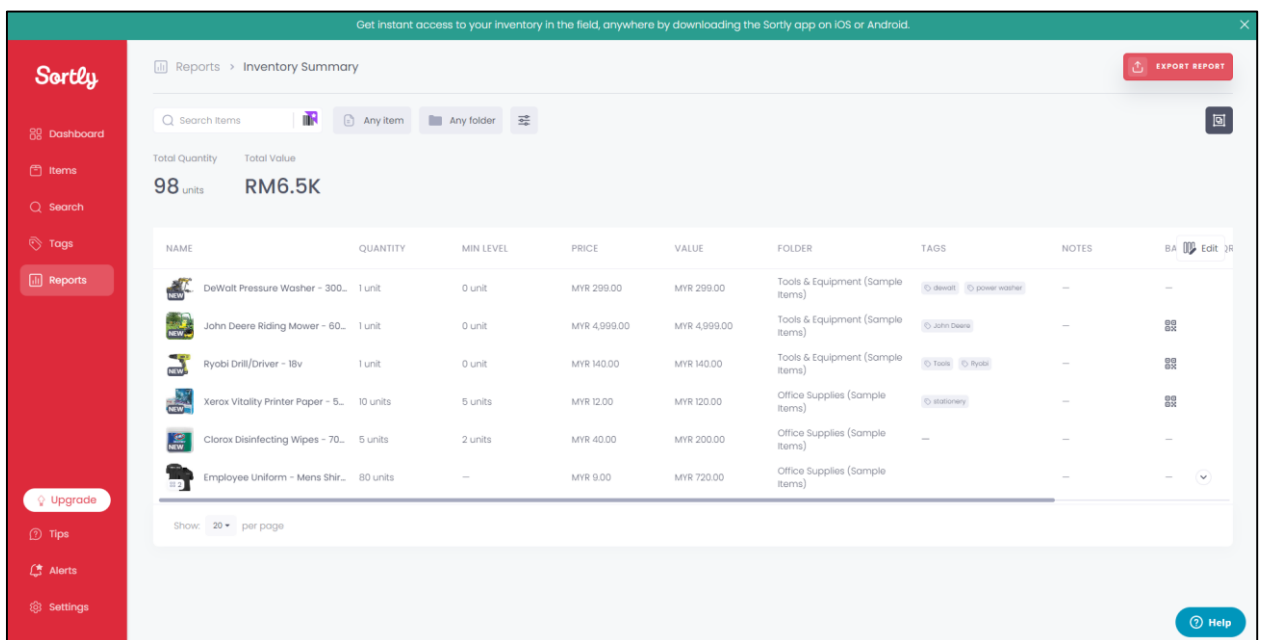


Figure 2.11 Sortly Reports Page.

Different to the previous existing website, the Sortly system had their own benefits in term of the website flow, quality, design, etc. One of the advantages of this website system are as shown before;

- In term of design, this website could be better in term of the usage of image. As an example, Sortly system are emphasizing the usage of images especially for the inventory product. Each products need to have their own image to make it easier for users to see and differentiate each product in the system.
- Sortly are also implementing a user-friendly website design since the user did not have to struggle in order to understand the flow of the system to complete their activities.
- One of the unique features of this website system are there will have a barcode and QR code that will automatically implemented to each products. This code can be search at the Search page which will make it easier for the users to search their required item.

Biztory System

The Biztory website system is a platform that provides many management features including for the sales, purchases, cash flow, accounting, and products/services or also known as inventory system. The company claimed the system as the accounting solution system for the start-up in Malaysia. To be compared with the proposed system which is the RMSys system which prioritizing the stock inventory management, there will only focusing on the inventory management of the Biztory system that will be located at the Products/Services features. There also provides the report features where there will be an automatic generated report based on the selected filters (*About Biztory*, n.d.).

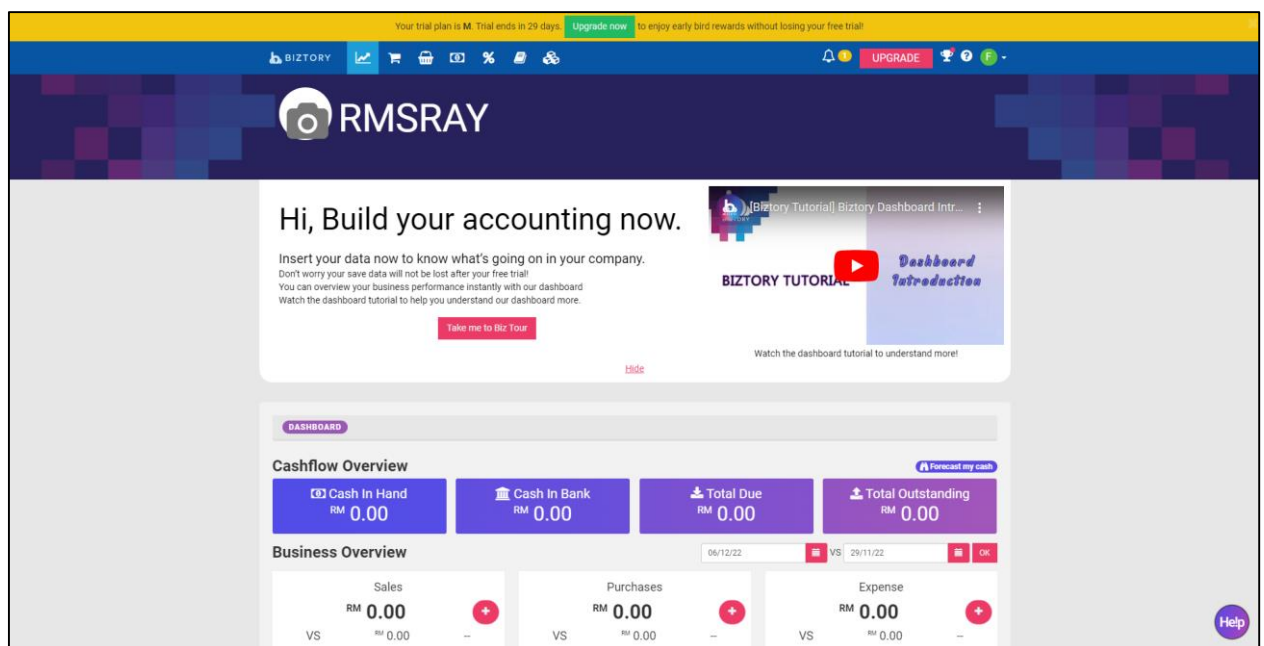


Figure 2.12 Biztory Dashboard Page.

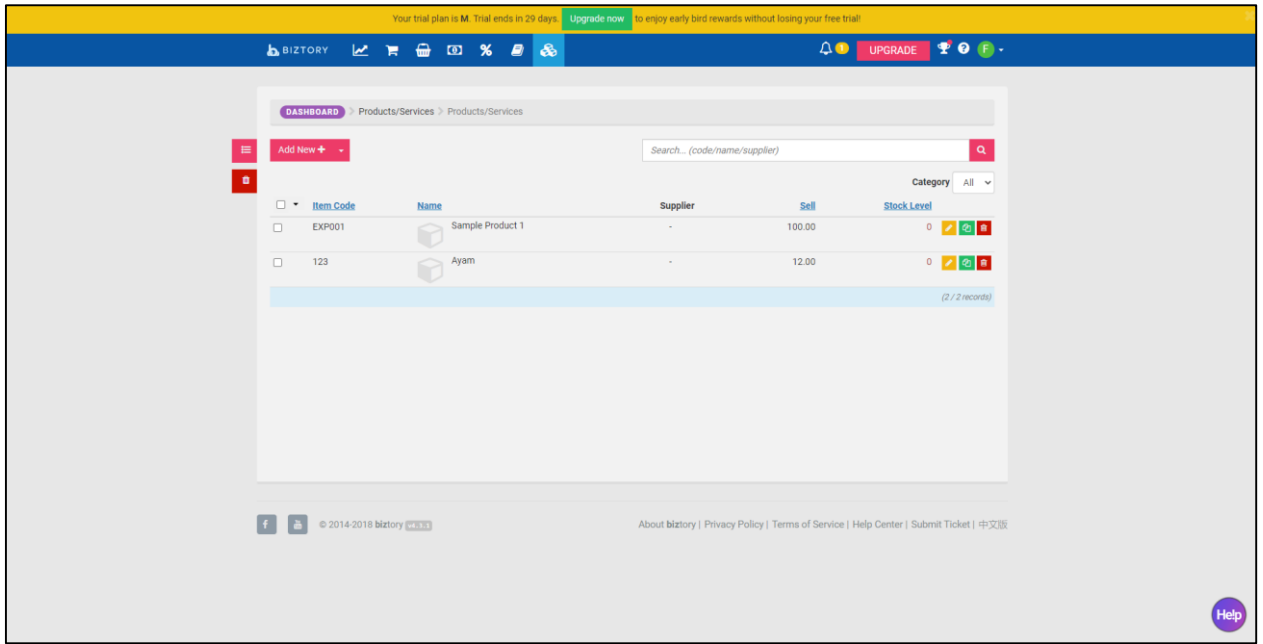


Figure 2.13 Biztory Products/Services Page.

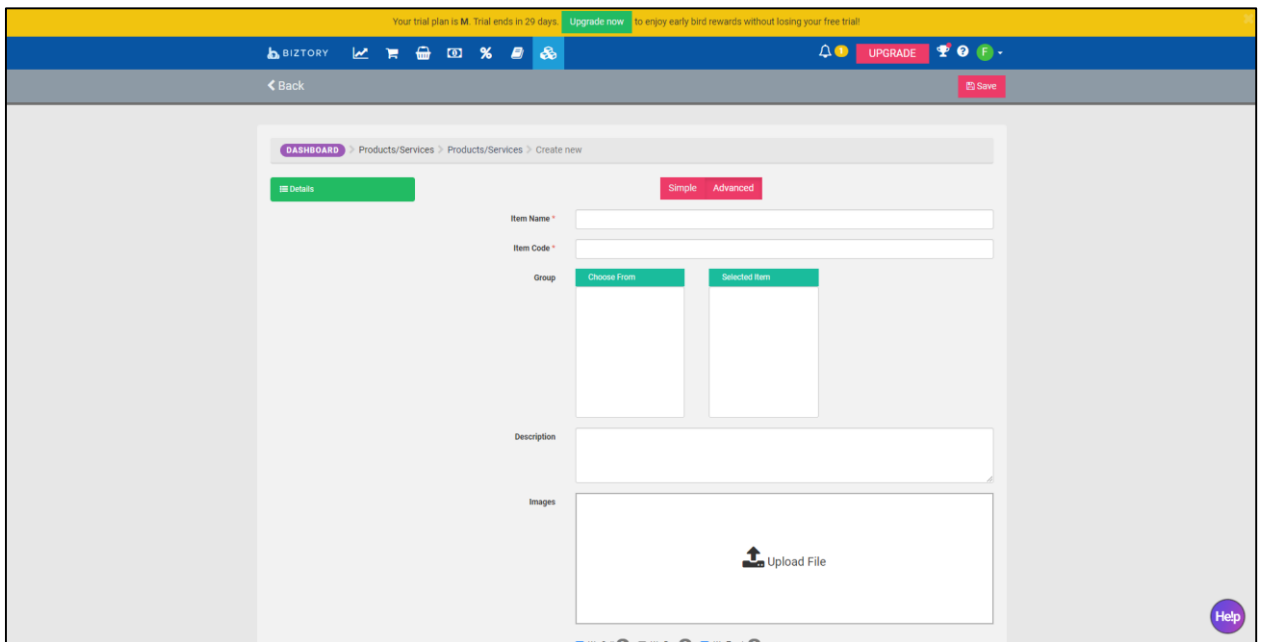


Figure 2.14 Add Product Page.

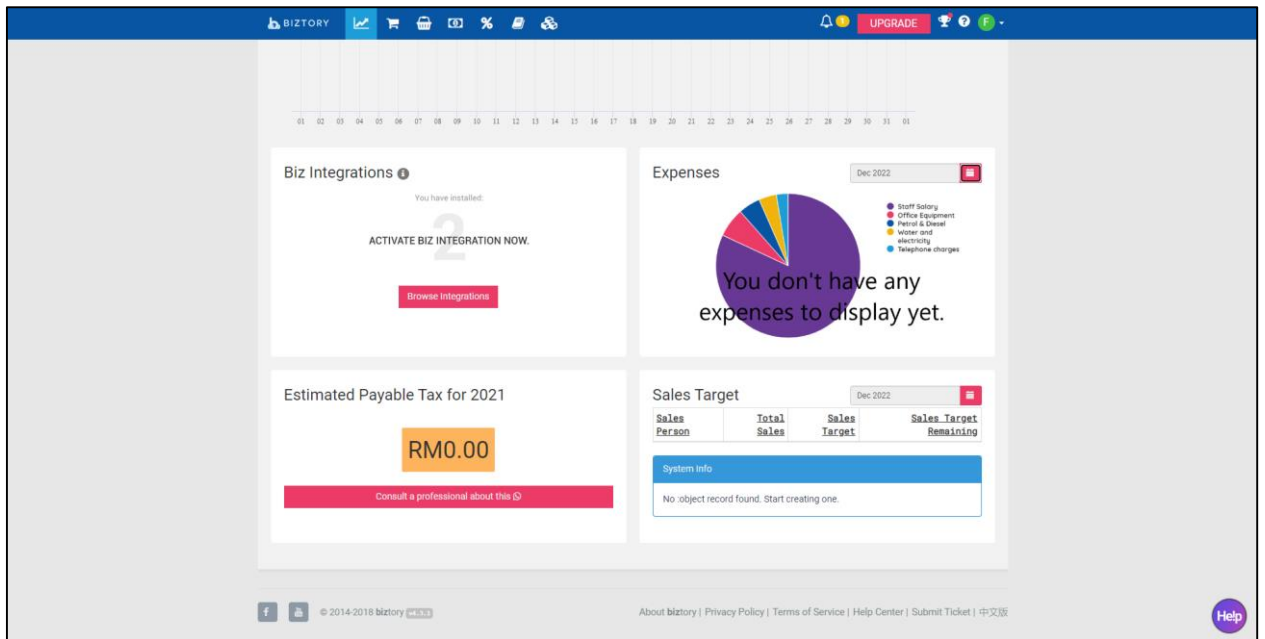


Figure 2.15 Biztory Chart Dashboard.

Same as another existing website which is Food Market Hub and Sortly websites system. This Biztory system are also providing some advantages that makes it to be a good website system in term of design, functionality, security, etc. Some of the advantages of Biztory are as shown below;

- Develop the system by using a user-friendly design which will makes users to know immediately on how to use the website system.
- Not similar to other system, the Biztory provides a functionality of sock level for each of the registered product for the company.

Although there are many benefits of the Biztory system, this website also has their own disadvantages that would make the system to be less-perfect to be compared with others. One of the disadvantages that has been notice are;

- For the website design, they using too many combination of colors which will makes the design seems clumsy and crowded.
- It also takes time to load each page in the website.

2.3 Analysis/Comparison of Existing System

Table 2.1 Comparison of Existing System

	Food Market Hub foodmarkethub.com	Sortly sortly.com	Xero xero.com	Proposed System (RMSys)
Content Languages	English	English	English	English
Programming Language	JavaScript Libraries (jQuery 3.5.1)	PHP MySQL (database) JavaScript	TypeScript JavaScript Libraries (jQuery)	HTML CSS PHP Javascript
Advantages	<ul style="list-style-type: none"> - Provides a user-friendly design of website. - Provides a live-chat section for users. - Allow users to create their own product manually or by import documents. 	<ul style="list-style-type: none"> - Emphasizing the usage of images in the website. - Provides a user-friendly design of website. - Generate the QRcode and barcode to each products. 	<ul style="list-style-type: none"> - Provides a user-friendly design of website. - Provides stock level details for each products. 	<ul style="list-style-type: none"> -Using appropriate and simple GUI that can fit with the website type. -User can quickly understand how to use the website.
Disadvantages	<ul style="list-style-type: none"> - Did not provides a simple user guideline for the users to calculate their cost management since it is required on the menu's form section. 	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - Using too many colors for the website design (make it looks crowded) - Takes a little bit time to load each page in the website system. 	<ul style="list-style-type: none"> Only available and accessible for RMS company only.

Relevance of comparison with project title

Refer to all of the comparison among those three existing website application, it can give a big impact to the proposed project development which is the RMSys stock inventory system.

2.4 Summary

In a nutshell, the purpose of the system that will be develop is to ensure the RMS company to get a better management of their stock inventory process of their food business. Basically, this system can be better than other existing system in term of user's satisfaction because of the analysis and comparison that has been made to collecting all the needed requirement of being a better website system.

CHAPTER 3 : METHODOLOGY

3.1 Introduction

This chapter is about further explanation of development and designing work of “RMSys”, RMS Inventory Management System. This chapter contains System Development Life Cycle (SDLC) Model, system requirement, user requirement, database design, interface design, Gantt chart and conclusion. In addition, there will be Use Case Diagram, flowchart of the system, Entity Relationship Diagram and Data Dictionary.

3.2 Project Management Framework/Methodology

SDLC is a process that produces software with the highest quality and lowest cost in the shortest time. SDLC includes a detailed plan for how to develop, alter, maintain and replace a software system. The life cycle defines a methodology for improving the quality of software and the overall development process.

Rapid Application Development (RAD) SDLC are chosen for this project because the key benefit of a RAD approach is fast project turnaround. RAD’s focus on minimizing the planning stage and maximizing prototype development. This results in greater efficiency, faster development, and effective communication (*SDLC - RAD Model*, n.d.).

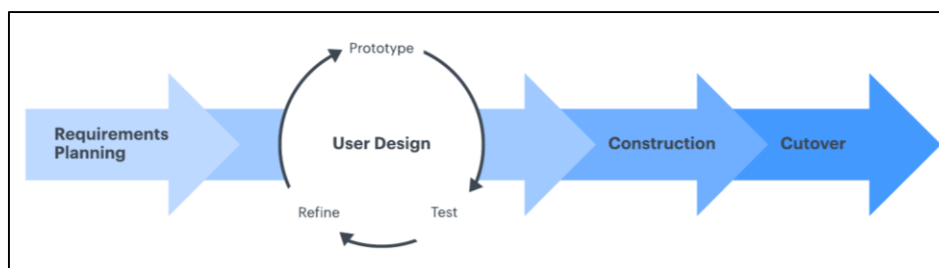


Figure 3.1 Rapid Application Development image.

Phase 1 (Requirements Planning)

The Requirements Planning phase of the project was initiated to identify all the key stakeholders involved. Various requirement planning methods, such as interviews, surveys, and data analytics, were employed to gather comprehensive information. In this particular project, a meeting method was chosen, involving a staff member from RmsRay Company, to gather specific requirements for the proposed system. During the meeting, the current challenges faced by the company were carefully noted and given due consideration. The aim was to understand these challenges and find ways to address them effectively.

By evaluating the identified problems, the project's expectations were set, aligning with the project's objectives to develop a website system that would provide enhanced stock inventory management capabilities for users. By critically evaluating the project's objectives and taking into account the identified issues faced by RmsRay Company, the project team aims to create a system that will empower users to better manage their business's stock inventory. The systematic evaluation of requirements and the establishment of clear goals will guide the project's development, ensuring that it meets the specific needs and expectations of the company.

Phase 2 (User Design)

Once the project is scoped out, it's time to jump right into development. Refers to the collected functional and non-functional requirements, also the estimate duration has for this project with the person involved, the RMSys system are being designed by based on the Software Development Life Cycle (SDLC) which is the Rapid Application Development (RAD). During this phase, some of the system design has been made by the developer such as the flowchart of the system, Entity Relationship Diagram (ERD), Context Diagram and Use Case Diagram. All of this system design are being developed by using the selected tools which is Draw.io.

After being consider with the stakeholders, it will be proceed with the system interface design. In this process, it will be work closely with the stakeholders which is the RmsRay Company. Some prototypes are being made by using the Figma tools and

are send to the stakeholders for their approval on the design. These prototypes are then shown to the clients who decide what they like and what they don't. This is intended to satisfy project results with no mistakes. The final product is only created during the finalization stage where the client and developer can both agree on the final design.

Phase 3 (Construction)

During Phase 3 of the project, the focus shifts towards transforming the prototypes created in the design phase into a fully functional working model. This phase involves several smaller steps, including preparation for rapid construction, program and application development, coding, and system testing. To facilitate the coding process, Visual Studio Code tools, along with the Laravel framework, are selected for the development work. The RMSys system is being developed using PHP, Javascript, HTML5, and CSS to handle the system's design and functionality. Additionally, MySQL is employed as the database for the system.

Throughout the development process, the team draws upon the knowledge gained from previous projects and engages in self-learning online sessions to address any potential mistakes or doubts that may arise during system development. The RmsRay Company ensures that all components of the system work seamlessly together and that the end result aligns with the client's expectations and objectives. If necessary, the company can propose alterations, changes, or new ideas to resolve issues as they arise. This iterative process takes into account any feedback provided by the client, ensuring that the system meets their specific requirements and preferences.

Phase 4 (Cutover)

The last phase will be carried out when the product is launched. It means all the requirements has been generated includes data conversion, testing, and changes to the new system, as well as user training. All final changes are made while the coders and clients continue to look for bugs in the system. After all the design and development of the RMSys system has been complete, User Acceptance Test (UAT) will be create where

the user evaluates the system before being exported to the client. It is to make sure it can handle required tasks in real-world scenarios, according to the specifications.

3.3 Project Requirement

System Requirement

This section will explain about all the requirements that will be used in developing this web management system. There are only two types of requirements that involved in this system which is software and hardware.

Table 3.1 Software Requirement

Software	Purpose
Adobe XD	Adobe XD is used to create prototype of the website interface.
Visual Studio Code	The coding for the website will be written by using VS Code.
Draw.io	Draw.io is used to create Flowchart, Use Case Diagram, and Entity Relationship Diagram.
Github	Used to manage all of the system code development among all of the developers in this team.
XAMPP	Used as a local host or server to test the developed system before releasing the system to the main server.
Microsoft Office	Gantt chart will be creating by using Microsoft Excel and report of the project by using Microsoft Word.
Canva	Canva is used to create the presentation slide.

Table 3.2 Hardware Requirement

Hardware	Specification	Purpose
Laptop	HP, 4GB RAM, Intel Core i5	Used to develop the project and report.
Monitor	HP 22inch screen	Used to extend the screen view while in the developing phases of this web application.
Mouse	Logitech, wireless	Used to ease the movements on the screen.
Printer	Canon, wired connection	Printer used for printing all the project report and questionnaire.

User Requirement

A user requirement is needed since it describes what user does with the system, such as what activities that users must be able to perform. Below is a list of modules that are used for this project. User requirement are also can be known as the functional requirement. For the proposed project which is the RMSys system, the functional requirement are as below;

Table 3.3 Functional Requirement.

Functional	Description
Login Module	- The system must allow users to log in to the system by entering their email and password.
Manage Registration Module	- The system must allow the Clerk user to manage the registration of other users account.
Manage Product Module	- The system must allow Clerk user to manage the product by view, add, update, and delete the selected products.

Manage Sales Module	<ul style="list-style-type: none"> - The system must allow Branch Manager users to update their weekly sales with the evidence. - The system must allow the Owner user to verify the evidence of the sales.
Manage Stock Module	<ul style="list-style-type: none"> - The system must allow the Clerk user to manage the request stock limit for each branch. - The system must allow the Branch Manager user to request selected product according to the limit set.

Other than functional requirement, the non-functional requirements are also significant for all web application to specify the quality of all attributes of the system. For the RMSys system, its non-functional requirements as below;

Table 3.4 Non-Functional Requirement.

Non-Functional	Description
Performance and Scability	To give a better performance of this website when experiencing a higher workloads (Solutions@altexsoft.com, 2019).
Security	To protect user's data and information against any attacks from outsider (Solutions@altexsoft.com, 2019).
Usability	To let all users use the website system without having any trouble to understand the flow to complete their activities in the system (Solutions@altexsoft.com, 2019).
Reliability	To maintain the website when experiencing any critical failures.

Constraint and Limitation

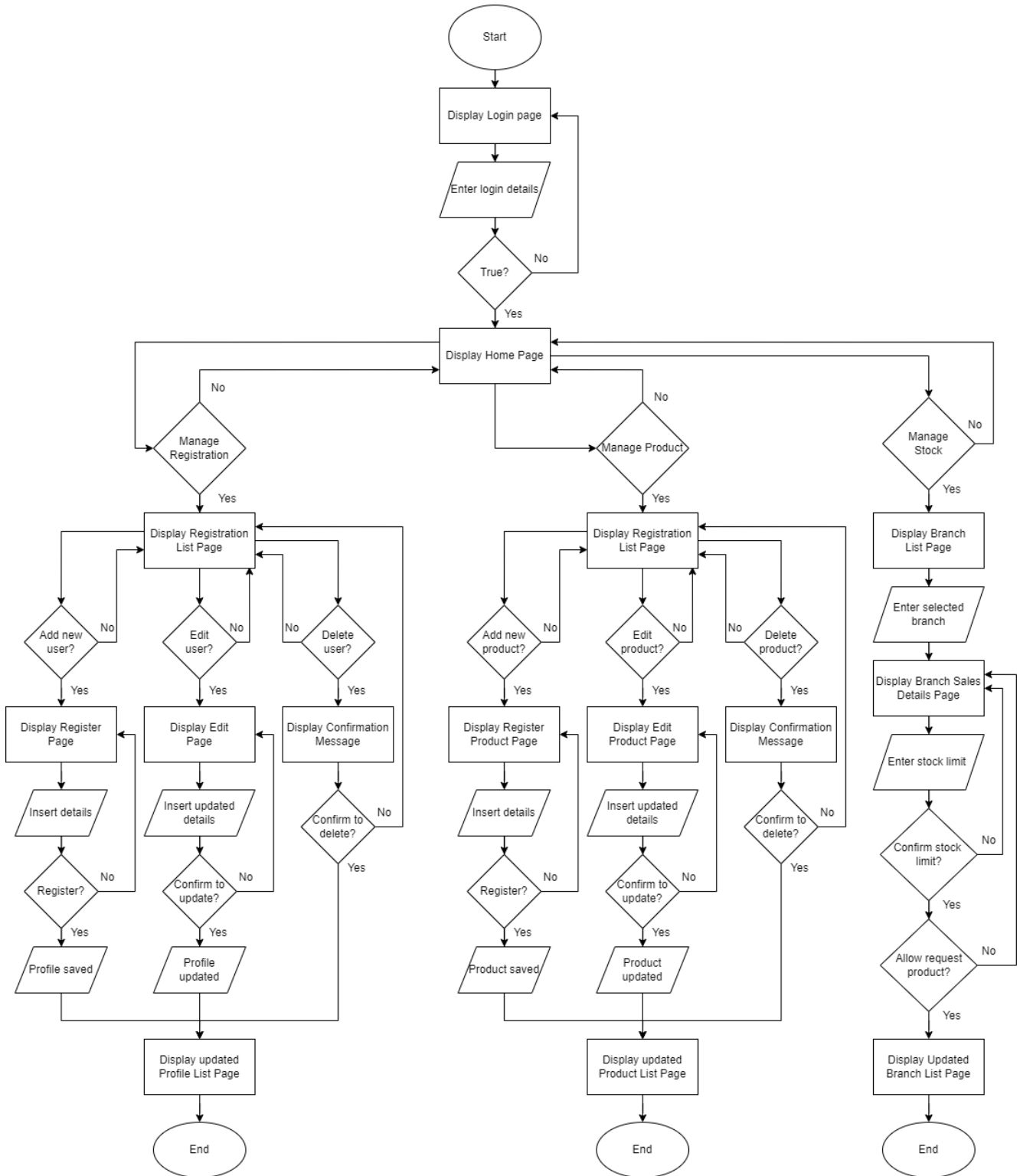
According to research that has been done through the internet surfing (Solutions@altexsoft.com, 2019), there will have to category of constraint which is Client constraint and also Project constraint. The constraint itself can also be defined as limitation which is something that limits and controls anything we do. To relate with this project, constraint and limitation are something that has been set as a limit within the website development and design. One of the limitation and constraint of this website are;

- The RMSys website system will only supports up to 20 million users at one time to access the system. Any more than that will make the system prone to lagging and slow response.
- The RMSys system did not support the offline usage, and only can be accessed if the internet connection are available.
- The RMSys will require permission from the user to keep all the user's personal data that has been entered and saved into the website system.

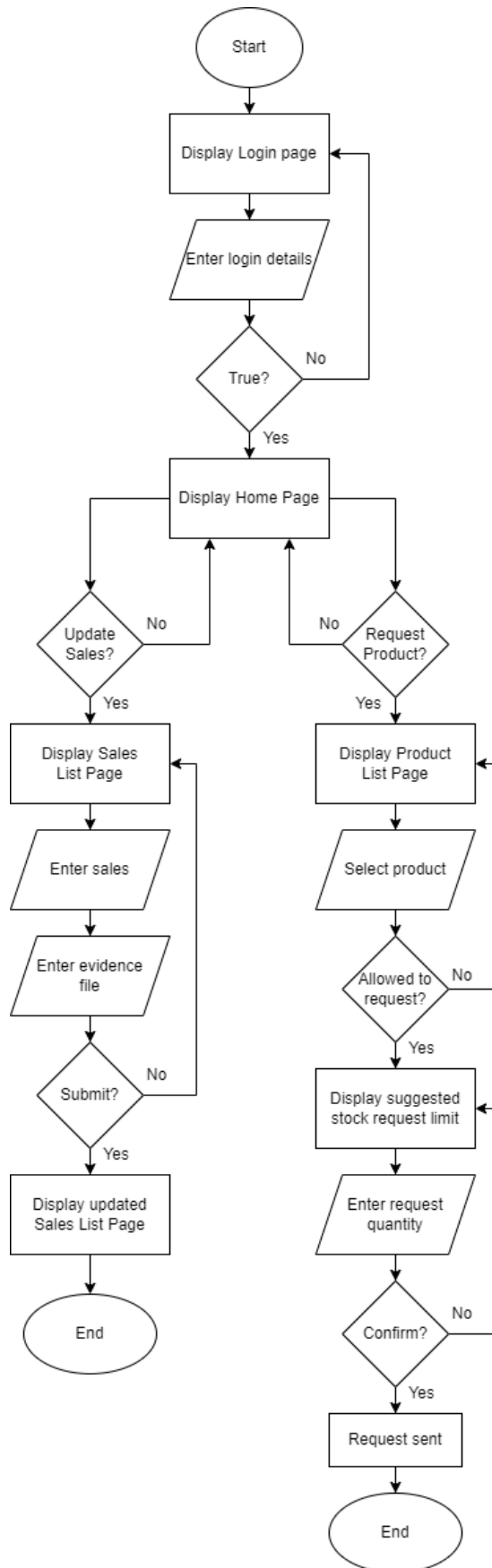
3.4 Proposed Design

Flowchart

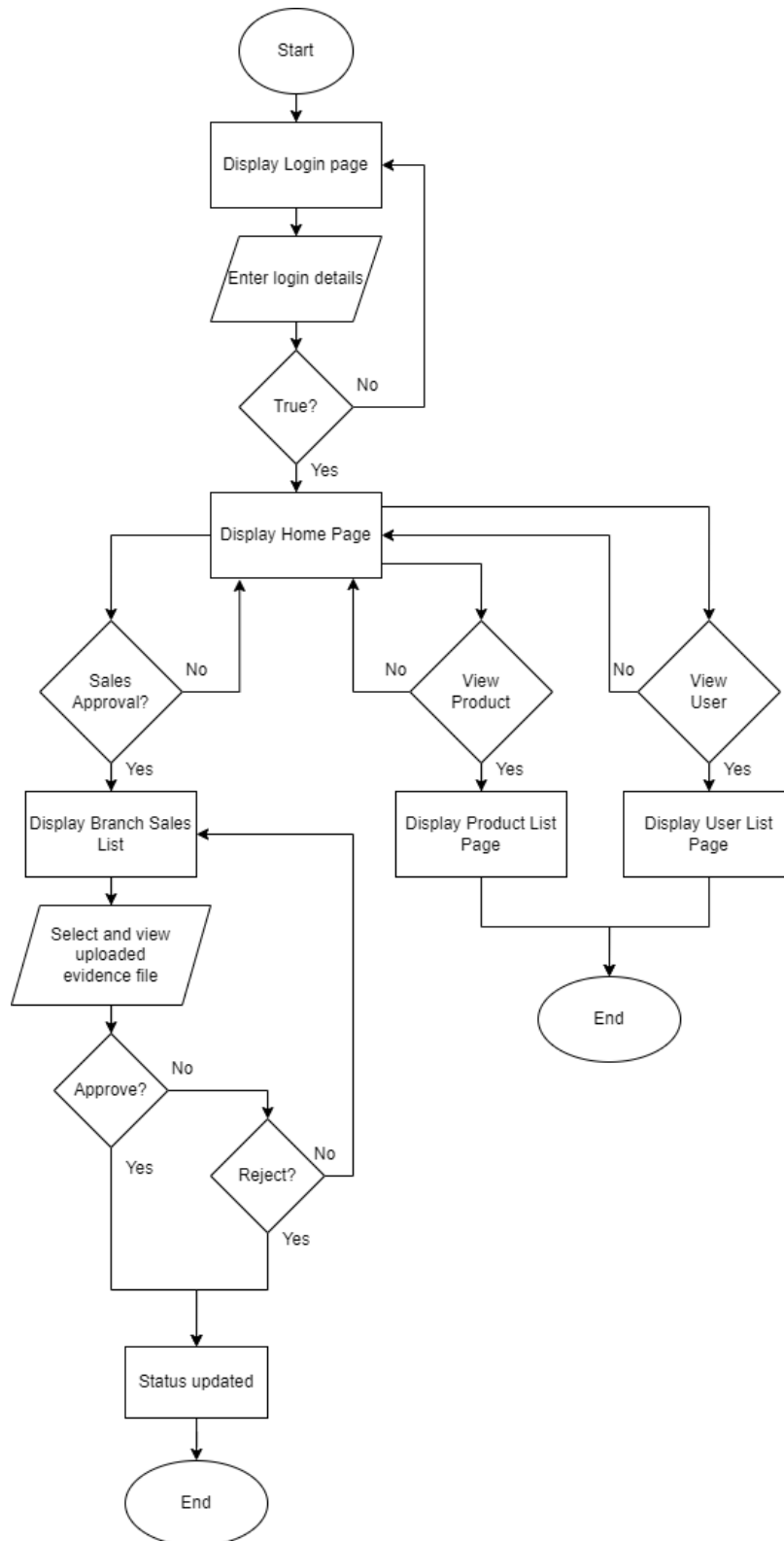
3.4.1.1 Clerk User's Flowchart



3.4.1.2 Branch Manager User's Flowchart



3.4.1.3 Owner User's Flowchart



Context Diagram

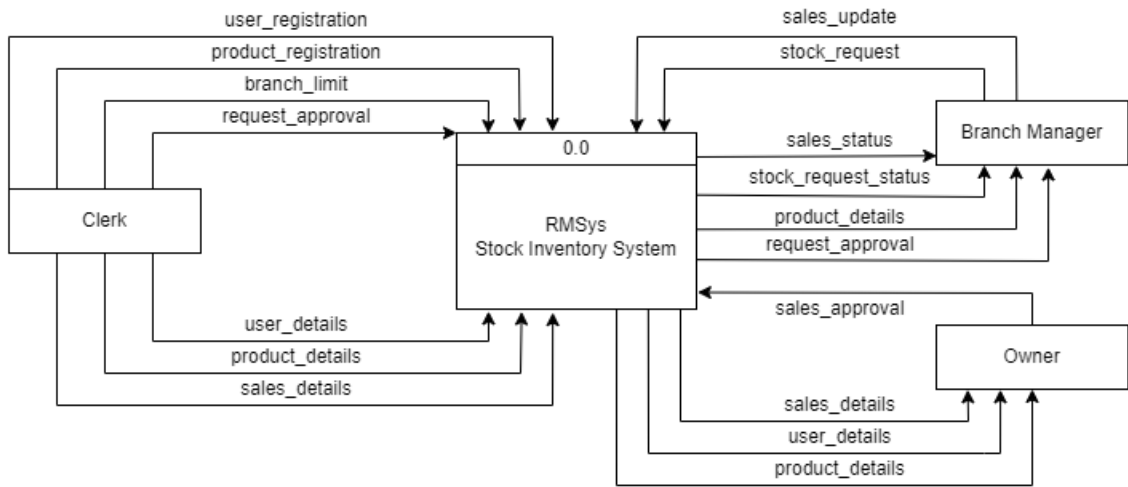


Figure 3.2 Context Diagram

Use Case

3.4.1.4 Use Case Diagram & Description

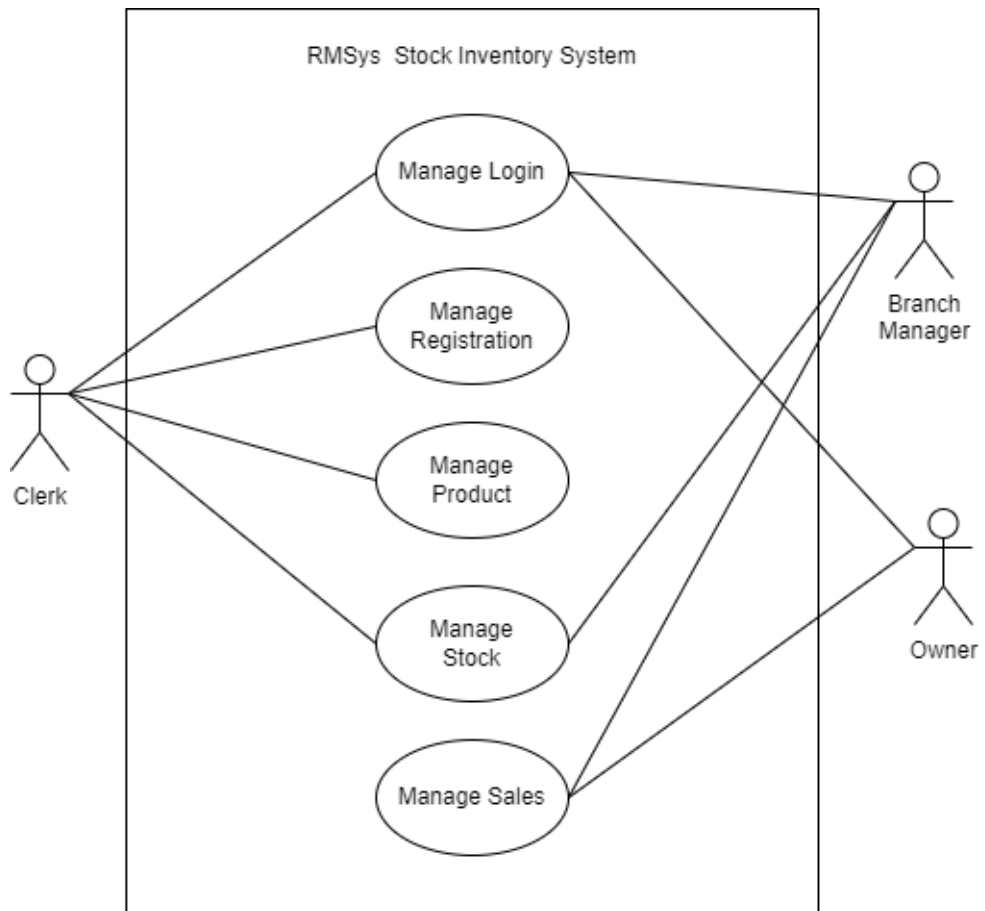


Figure 3.3 Use Case Diagram

3.4.1.5 Manage Registration

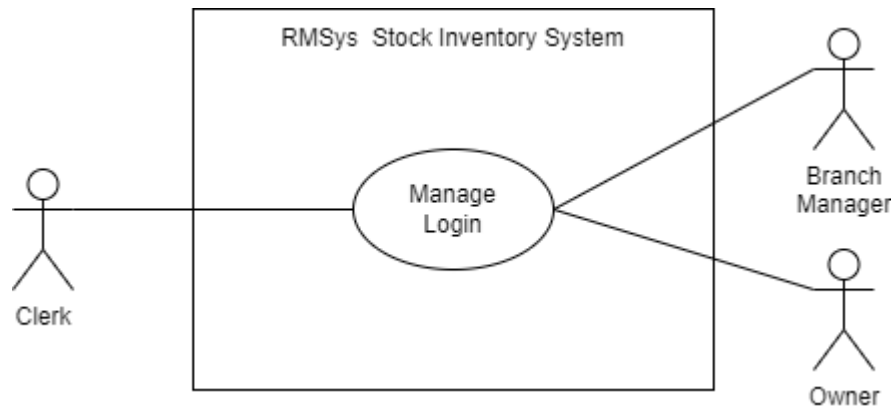


Figure 3.4 Use Case Diagram - Manage Login

Table 3.5 Use Case Description - Manage Login

Use Case Name	Manage Login
Brief Description	The use case is used by Clerk, Branch Manager, and Owner user to login into the system.
Actor	Clerk, Branch Manager, Owner
Pre-Conditions	The Owner must has already registered to the system.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the owner user are already at the login page. 2. User can enter their login details in the login form. 3. The use case end.
Alternative Flow	Not Applicable
Exception Flow	<p>[E1: Invalid login details]</p> <p>Condition: The owner user entered invalid login details which are not saved in the database.</p>

	Dedescription: The RMSys system will show an error message to inform that the entered details are invalid.
Post-Conditions	The login are success.
Rules	[R1: Valid details format] The entered input details must have been registered in the system.
Constraints	Not Applicable.

3.4.1.6 Manage Registration

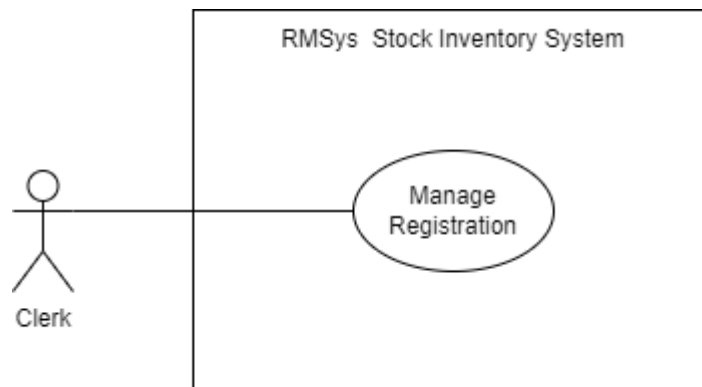


Figure 3.5 Use Case Diagram - Manage Registration

Table 3.6 Use Case Description - Manage Product

Use Case Name	Manage Registration
Brief Description	The use case is used by Clerk user to manage the registration of Branch Manager and Owner user profile.
Actor	Clerk
Pre-Conditions	The Clerk users must be logged in into the RMSys system.

Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the owner user are already at the home page. 2. User can choose to: <ul style="list-style-type: none"> [A1: Register new user] [A2: View user details] [A3: Update selected user] [A4: Delete selected user] 3. The use case end.
Alternative Flow	<p>[A1: Register new user]</p> <ol style="list-style-type: none"> 1. The user click on the “Add New User” button. 2. The system shows the form and user need to fill the form with the user details. <ul style="list-style-type: none"> [E1: Invalid details format] 3. User click the “Save” button to register the account into the system. <p>[A2: View user details]</p> <ol style="list-style-type: none"> 1. User click on the “View” icon button on the selected user from the register user list. 2. The system shows the User Details Page of the selected user. <p>[A3: Update selected user]</p>

	<ol style="list-style-type: none"> 3. User click on the “Edit” icon button on the selected user from the register user list. 4. The system shows the update user form with the saved details. User need to enter the updated details in the form. [E1: Invalid details format] 5. User click the “Update” to continue. 6. The data will be saved and system will show the updated User List Page. <p>[A4: Delete selected user]</p> <ol style="list-style-type: none"> 1. User click on the “Delete” icon button on the selected user from the register user list. 2. The system shows the confirmation message and user can click the “Yes” button. 3. The system shows the validation message and shows the updated User List Page.
Exception Flow	<p>[E1: Invalid details format]</p> <p>Condition: The clerk user entered invalid format user details.</p> <p>Description: The RMSys system will show an error message to inform that the entered details are invalid.</p>
Post-Conditions	The user details are successfully saved in the system.
Rules	<p>[R1: Valid details format]</p> <p>The entered input details must be in a valid format.</p>
Constraints	Not Applicable

3.4.1.7 Manage Product

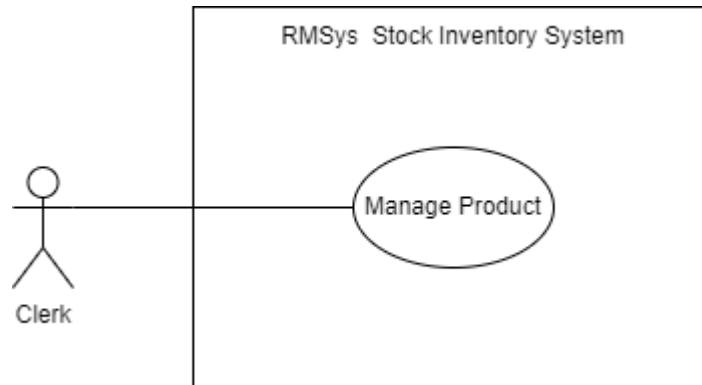


Figure 3.6 Use Case Diagram - Manage Product

Table 3.7 Use Case Description - Manage Product

Use Case Name	Manage Product
Brief Description	This use case is used by Clerk to manage the product details in the RMSys system.
Actor	<ul style="list-style-type: none"> • Clerk
Pre-Conditions	The users must be logged in into the RMSys system.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the owner user are already at the home page. 2. User can choose to: <ul style="list-style-type: none"> [A1: Register new product] [A2: View product details] [A3: Update selected product] [A4: Delete selected product]

	<ol style="list-style-type: none"> 1. The use case end.
Alternative Flow	<p>[A1: Register new product]</p> <ol style="list-style-type: none"> 1. The user click on the “Add New Product” button. 2. The system shows the form and user need to fill the form with the product details. 3. User click the “Save” button to register the account into the system. <p>[A2: View product details]</p> <ol style="list-style-type: none"> 1. User click on the “View” icon button on the selected user from the register product list. 2. The system shows the Product Details Page of the selected user. <p>[A3: Update selected product]</p> <ol style="list-style-type: none"> 1. User click on the “Edit” icon button on the selected user from the register product list. 2. The system shows the update product form with the saved details. User need to enter the updated details in the form. 3. User click the “Update” to continue. 4. The data will be saved and system will show the updated Product List Page. <p>[A4: Delete selected product]</p> <ol style="list-style-type: none"> 1. User click on the “Delete” icon button on the selected user from the register product list.

	<ol style="list-style-type: none"> 2. The system shows the confirmation message and user can click the “Yes” button. 3. The system shows the validation message and shows the updated Product List Page.
Exception Flow	Not Applicable
Post-Conditions	The updated product data are successfully saved in the system.
Rules	Not Applicable
Constraints	Not Applicable

3.4.1.8 Manage Stock

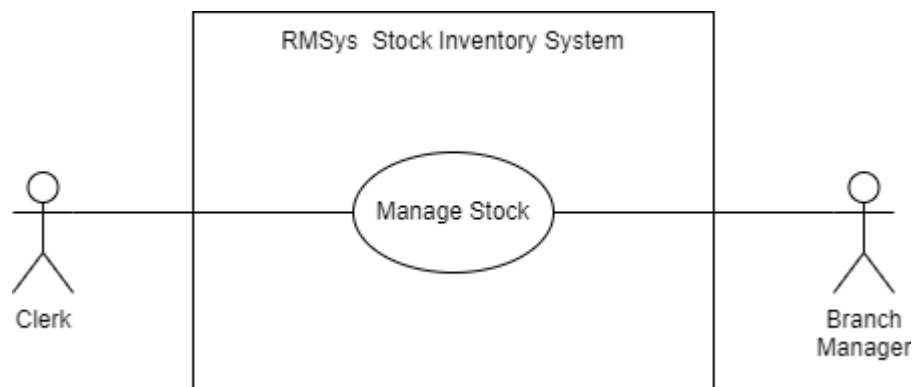


Figure 2. 1 Use Case Diagram - Manage Stock

Table 3.8 Use Case Description - Manage Stock

Use Case Name	Manage Stock
Brief Description	This use case are used by Clerk and Branch Manager. The Clerk user are able to manage stock limit for the selected branch. Branch Manager user are able to request stock limit of the selected product.
Actor	Clerk and Branch Manager

Pre-Conditions	The users must successfully logged in into the system.
Basic Flow	<p>Clerk</p> <ol style="list-style-type: none"> 1. The use case begins when the clerk user are already at the home page of the system. 2. The user click on the “Branch Limit” button on the navigation bar. 3. The system shows the Branch Sales Detail Page and user view the uploaded sales from the Branch Manager. 4. User enter the stock limit based on the sales. Then, the system shows the confirmation to allow the selected branch to request the product stock. 5. The use case end. <p>Branch Manager</p> <ol style="list-style-type: none"> 1. The use case begins when the branch manager user are already at the home page. 2. The user click on the “Request Product” button on the navigation bar. 3. The system shows the Product List Page and click on the selected product. 4. User can enter the required stock quantity and click on the “Submit” button. The system will proceed if the user is allowed to. Otherwise,

	[A1: Not allowed to request] 5. The use case end.
Alternative Flow	[A1: Not allowed to request] 1. The system will shows the text message to inform the user that they are not allowed to request because the Clerk are not allows them yet. 2. The system will shows back to the product page.
Exception Flow	Not Applicable
Post-Conditions	The stock limit are successfully saved.
Rules	Not Applicable
Constraints	Not Applicable

3.4.3.6.Manage Sales

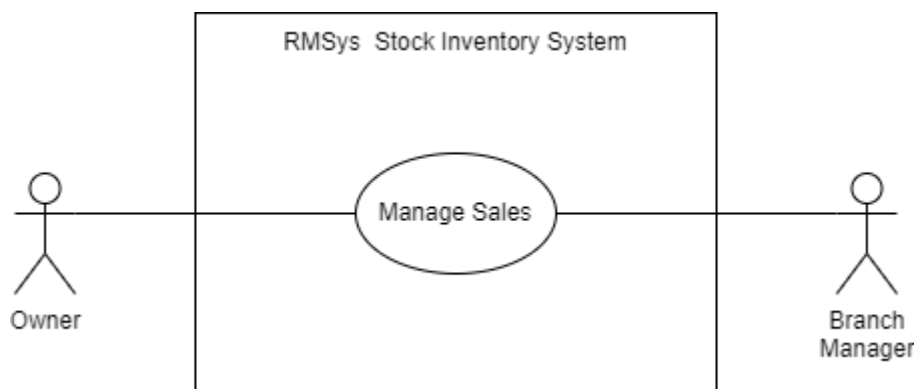


Table 3.9 Use Case Description - Manage Sales

Use Case Name	Manage Sales
Brief Description	This use case are used by Owner and Branch Manager. The Owner are responsible to verify the uploaded sales by the

	Branch Manager. The Branch Manager user are able to update their weekly sales into the system.
Actor	Owner and Branch Manager
Pre-Conditions	The users must successfully logged in into the system.
Basic Flow	<p>Owner</p> <ol style="list-style-type: none"> 1. The use case begins when the owner user are already at the home page of the system. 2. The user click on the “Manage Sales” button on the navigation bar and the system will shows the Branch Sales List Page. 3. The can choose and select the sales from the list and the system will shows the Sales Details Page. 4. The system will display the sales details and uploaded evidence file. 5. User can choose to click “Approve” or “Reject” for the sales details. The data are being saved. 6. The use case end. <p>Branch Manager</p> <ol style="list-style-type: none"> 1. The use case begins when the Branch Manager user are already at the home page. 2. The user click on the “Sales” button on the navigation bar. The system will shows their Sales List Page. 3. User can choose: [A1: View Previous Sales]

	<p>[A2: Add New Sales]</p> <p>6. The use case end.</p>
Alternative Flow	<p>[A1: View Previous Sales]</p> <ol style="list-style-type: none"> 1. User can choose and enter on the selected previous sales. 2. The system will shows the record details of the selected sales. <p>[A2: Add New Sales]</p> <ol style="list-style-type: none"> 1. User can click on the “Add New Sales” button on the top of the screen and the system will shows the Add Sales Page. 2. User need to enter all the details of sales into the form including the sales evidence file. 3. User can click the “Save” button to continue.
Exception Flow	Not Applicable
Post-Conditions	The sales are successfully saved.
Rules	Not Applicable
Constraints	Not Applicable

3.5 Data Design

Entity Relationship Diagram

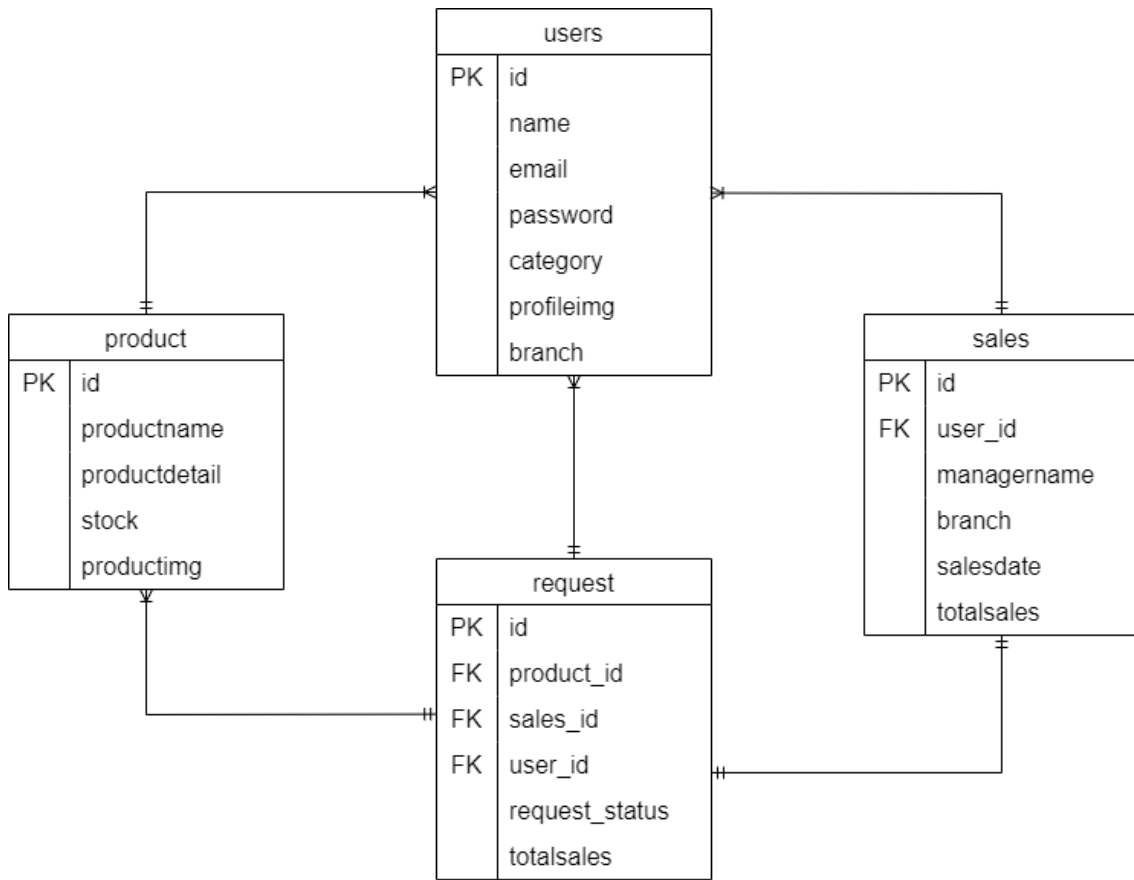


Figure 3.7 Entity Relationship Diagram (ERD)

Data Dictionary

3.5.1.1 Data Dictionary for users

Table 3.10 : Data Dictionary for users

Field Name	Description	Data Type	Constraint
id	User id	INT	PK
name	User name	VARCHAR (255)	NULL
email	User email	VARCHAR (255)	NULL
password	User password	VARCHAR (255)	NULL
category	User category	VARCHAR (255)	NULL
profileimg	User image	VARCHAR (255)	NULL
branch	User branch	VARCHAR (255)	NULL

3.5.1.2 Data Dictionary for product

Table 3.11 Data Dictionary for product

Field Name	Description	Data Type	Constraint
id	Product id	INT	PK
productname	Product name	VARCHAR (255)	NULL
productdetail	Product detail	VARCHAR (255)	NULL
stock	Product stock	INT (11)	NULL
productimg	Product image	VARCHAR (255)	NULL

3.5.1.3 Data Dictionary for request

Field Name	Description	Data Type	Constraint
id	Request id	INT	PK
product_id	Product id	INT	FK
sales_id	Sales id	INT	FK
user_id	User id	INT	FK
request_status	Product request	VARCHAR (255)	NULL

3.5.1.4 Data Dictionary for sales

Table 3.12 Data Dictionary for sales

Field Name	Description	Data Type	Constraint
id	Sales id	INT	PK
user_id	User id	INT	FK
managename	Manager name	VARCHAR (255)	NULL
branch	Manager branch	VARCHAR (255)	NULL
salesdate	Sales date	DATE	NULL
totalsales	Total sales	INT	NULL
date	Current date	DATE	NULL

3.6 Proof of Initial Concept

Prototype for Owner user

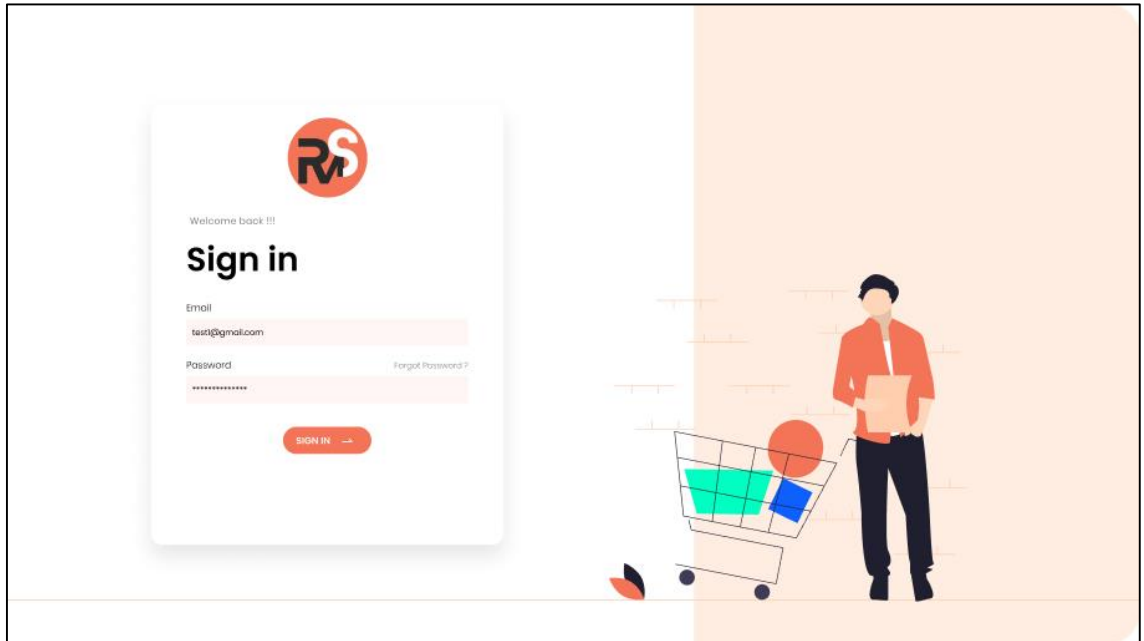


Figure 3.8 Login Page

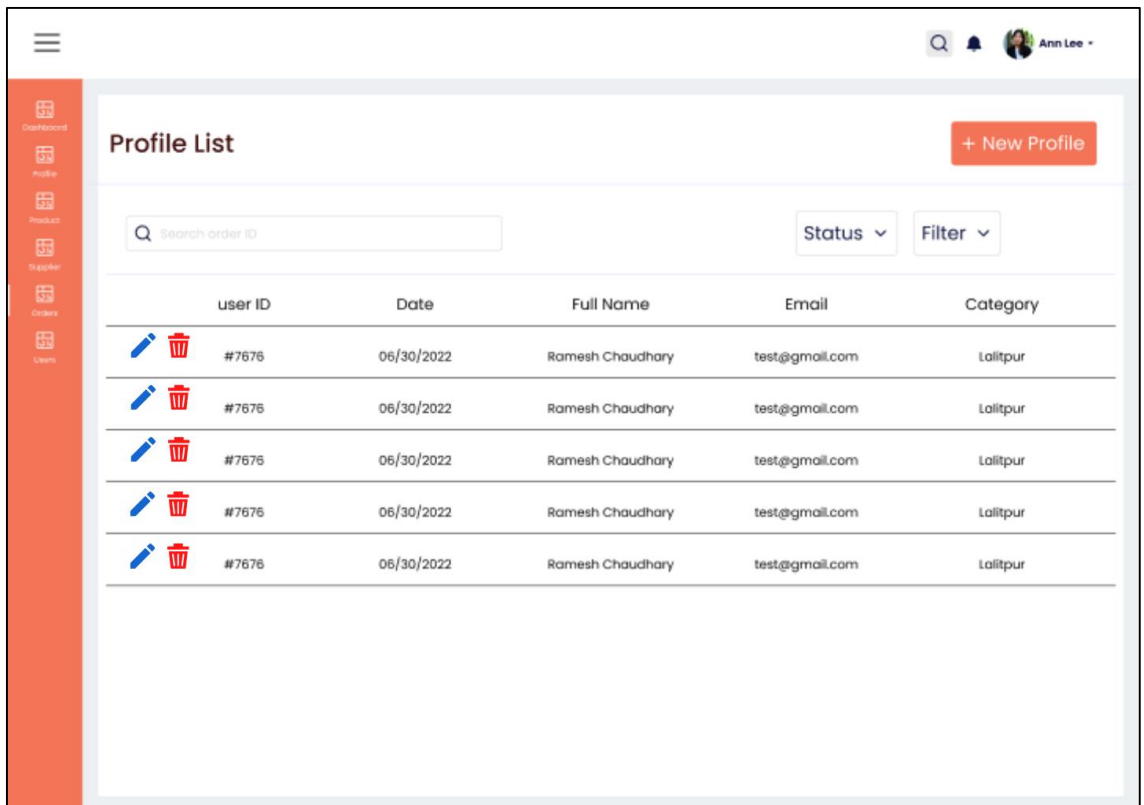


Figure 3.9 Profile List - Owner

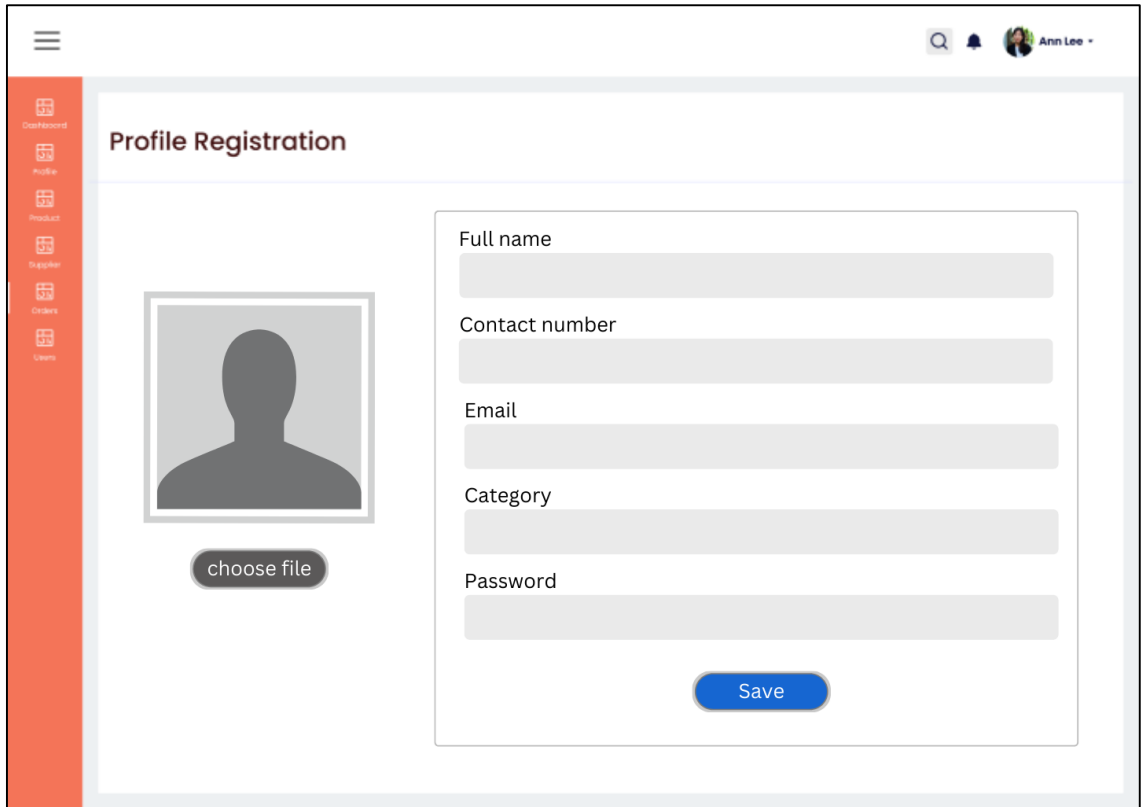


Figure 3.10 Profile Registration - Owner

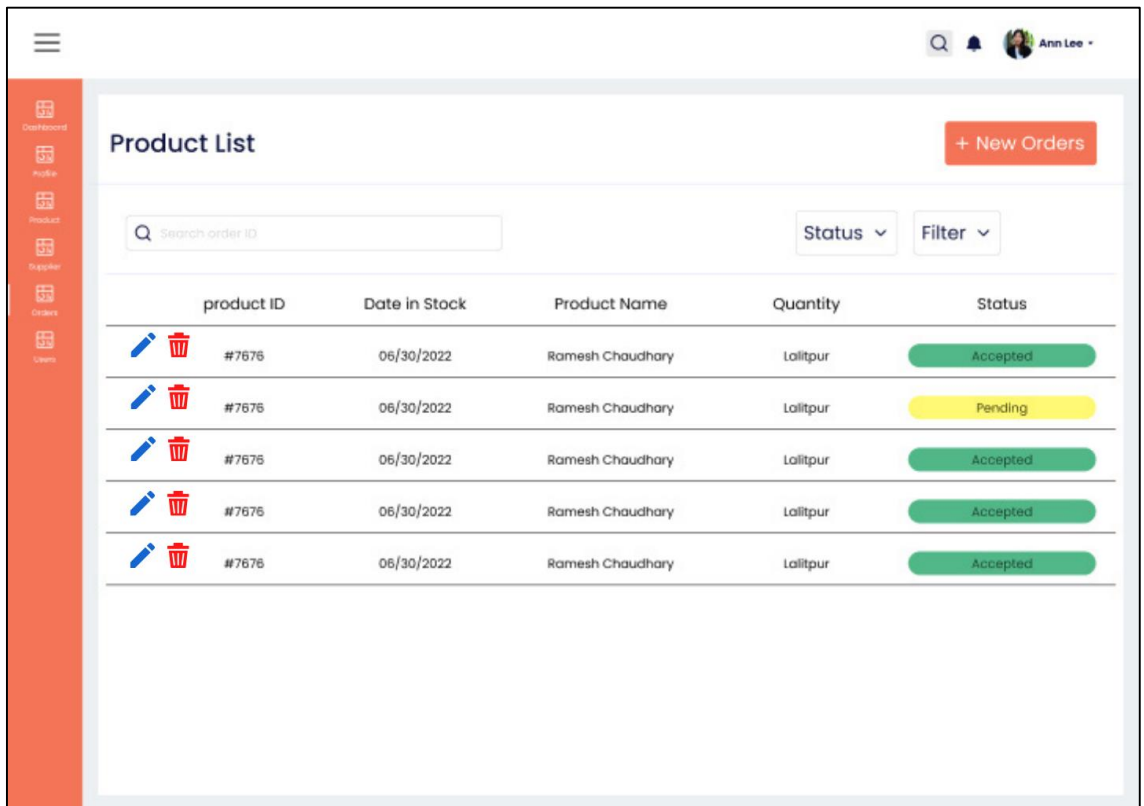


Figure 3.11 Product List - Owner

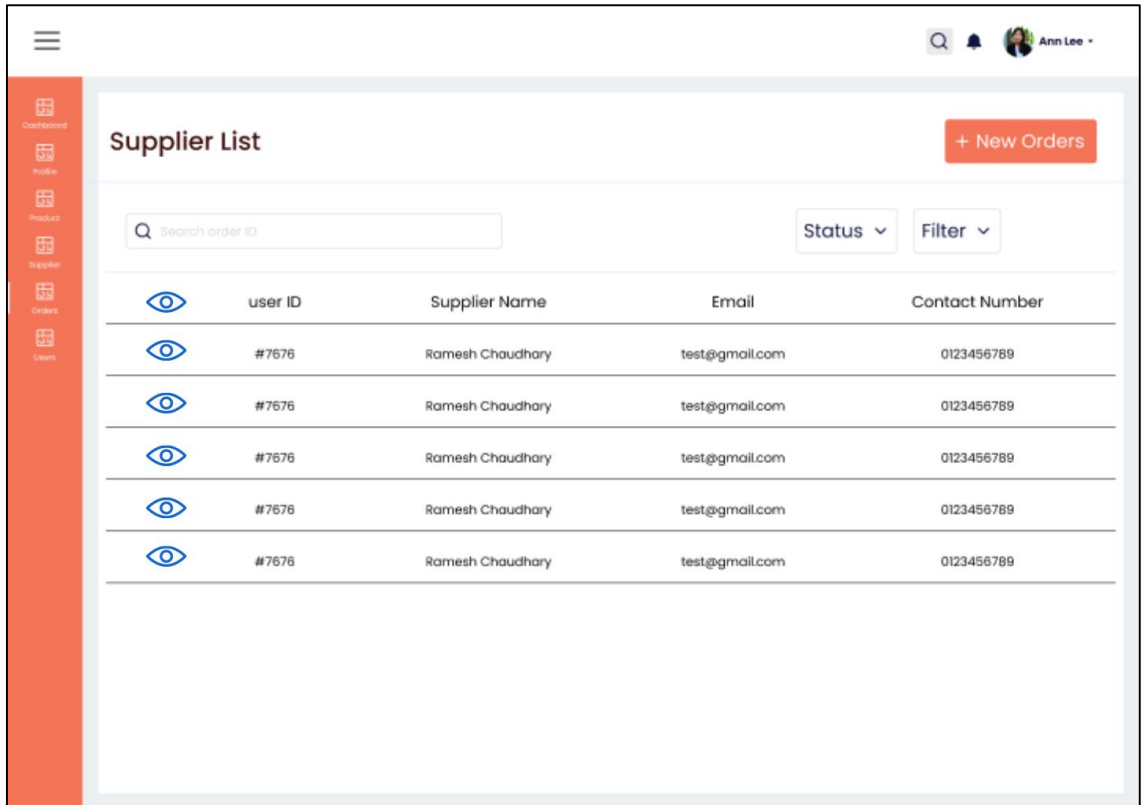


Figure 3.12 Supplier List - Owner

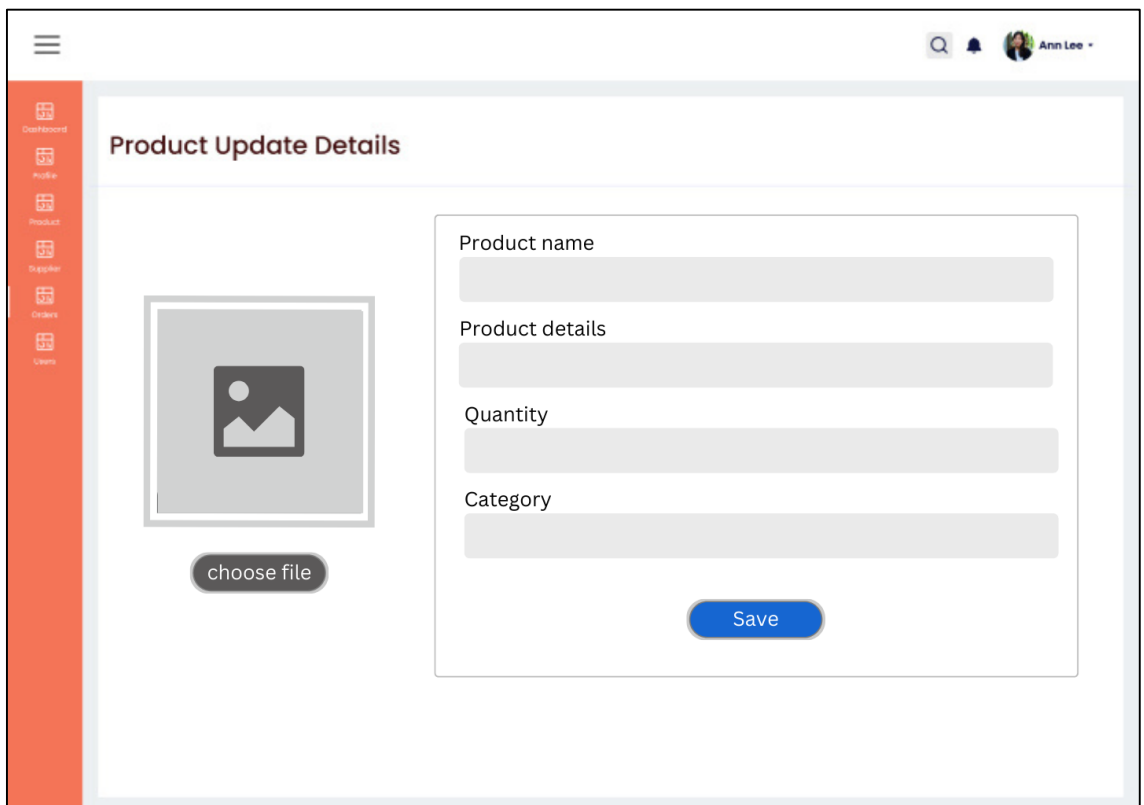


Figure 3.13 Product Update Details - Owner

Prototype for Branch Manager user

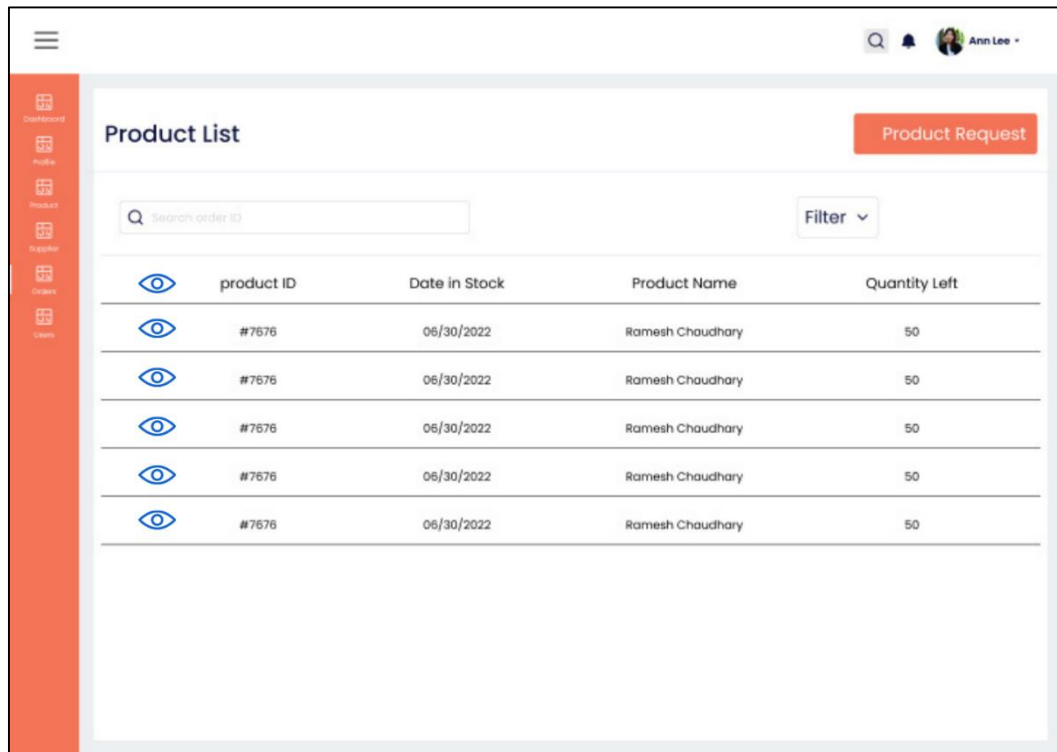


Figure 3.14 Product List - Branch Manager

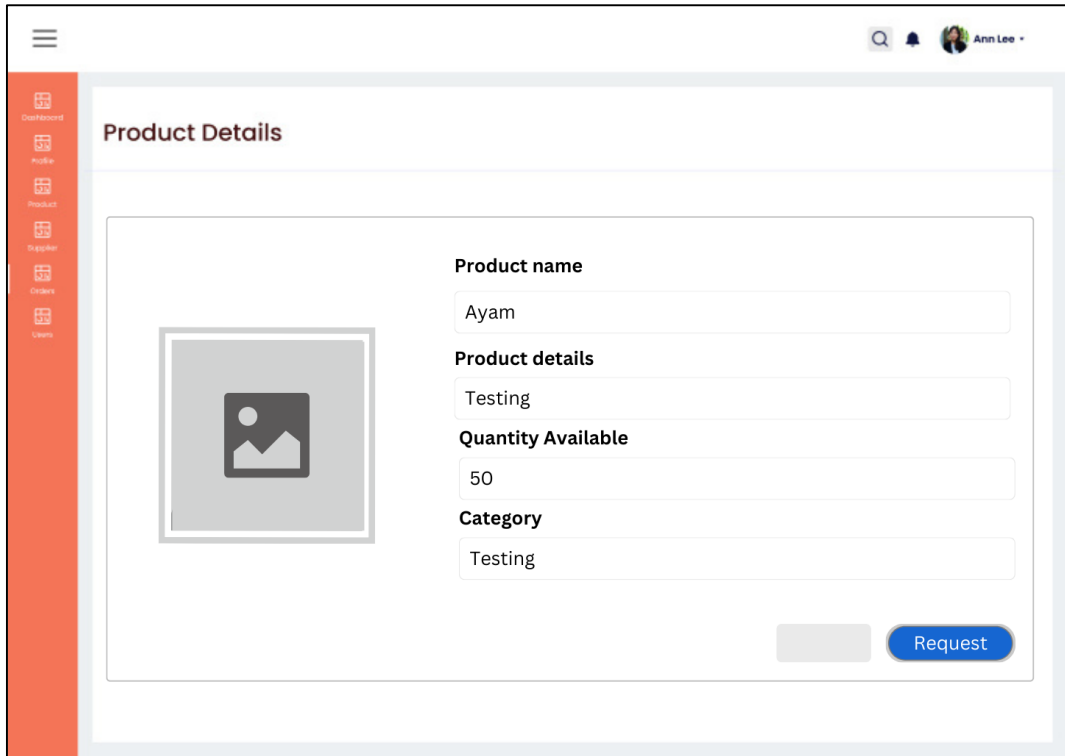


Figure 3.15 Product Details - Branch Manager

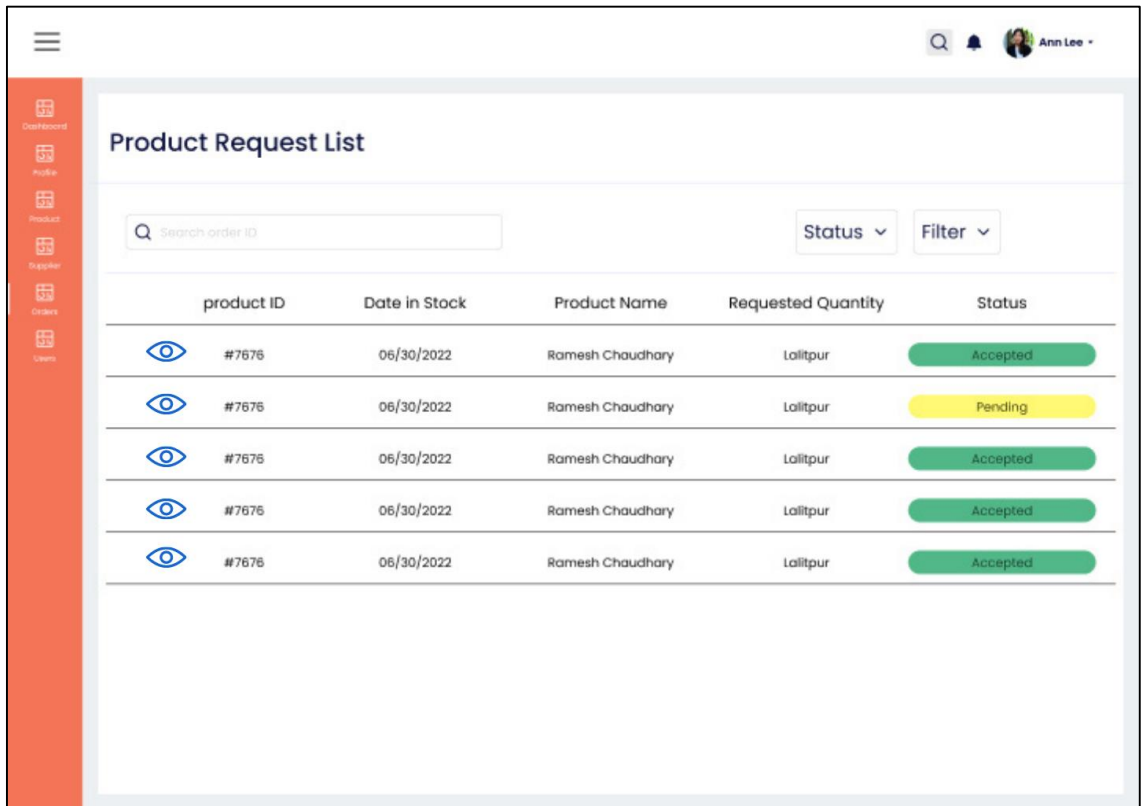


Figure 3.16 Product Request List - Branch Manager

Prototype for Clerk user

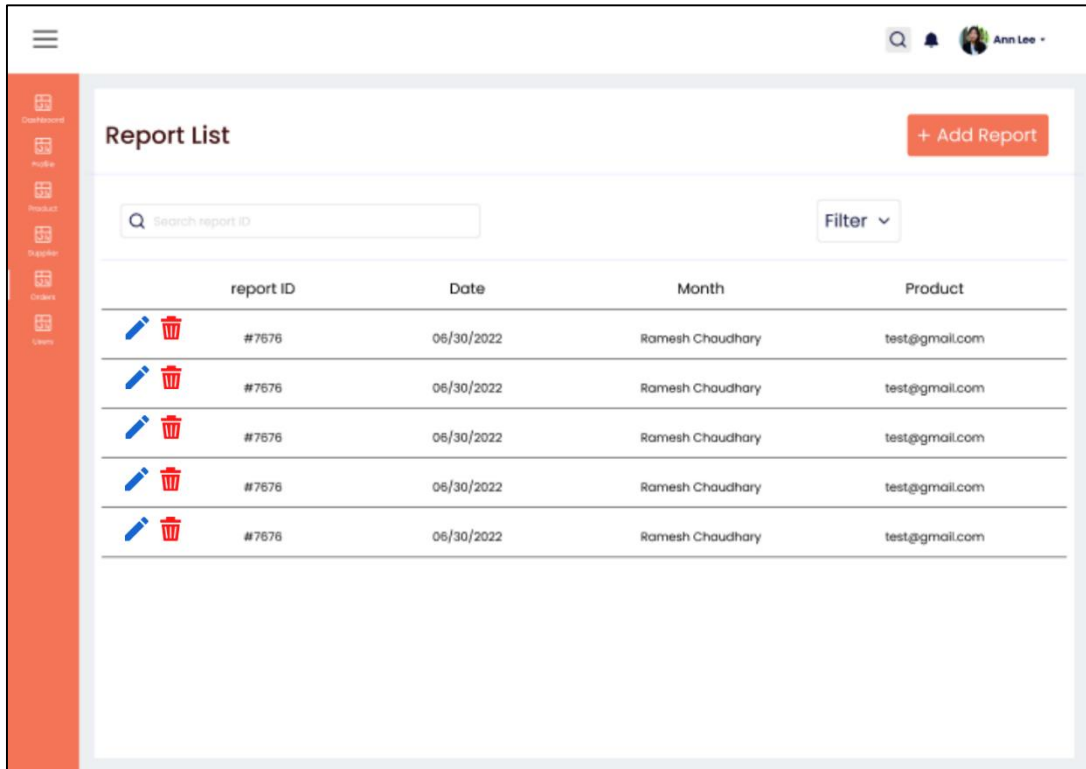


Figure 3.17 Report List - Clerk

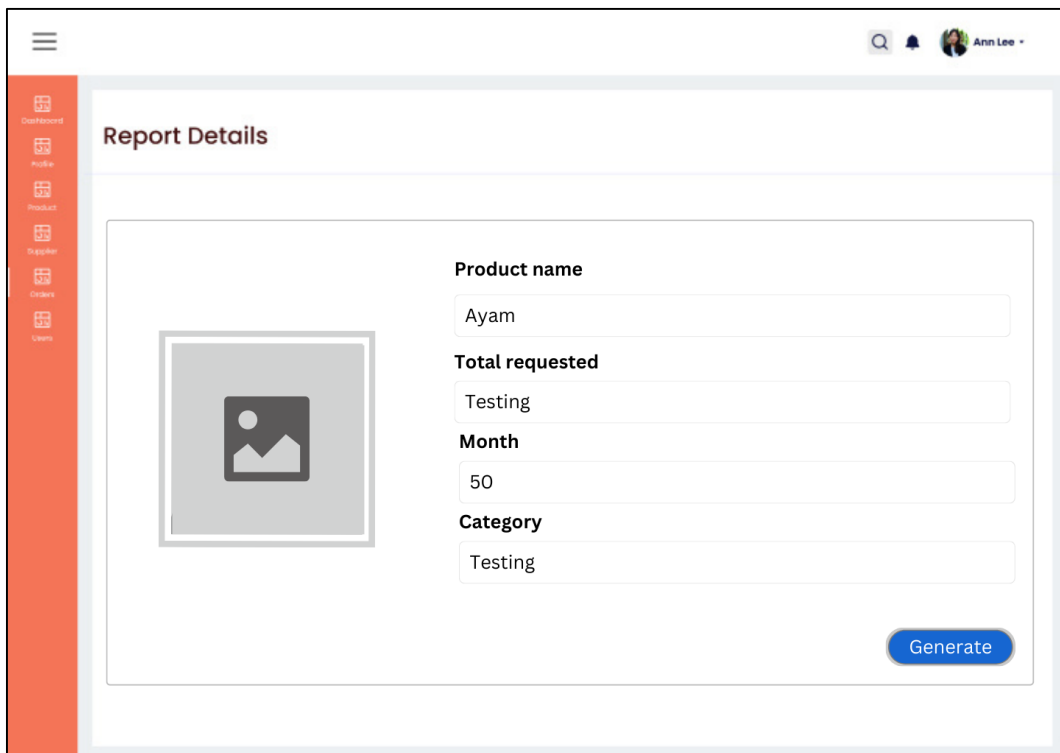


Figure 3.18 Report Details - Clerk

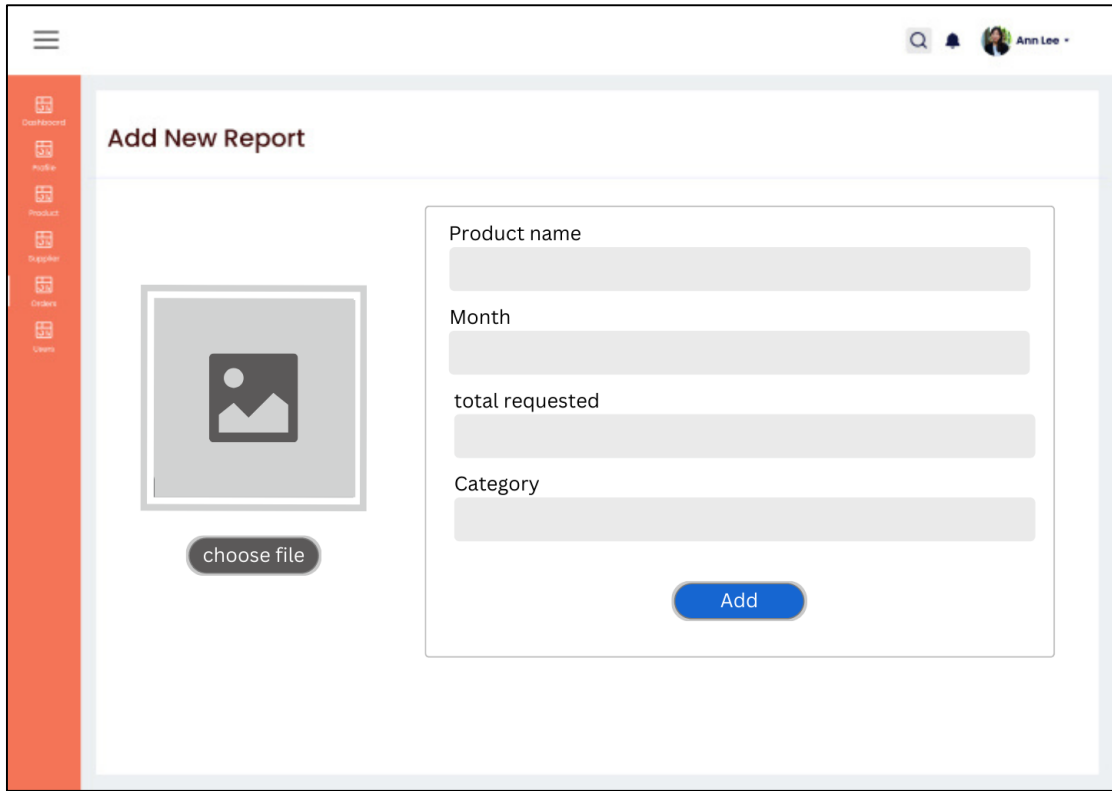


Figure 3.19 Add Report - Clerk

3.7 Testing/Validation Plan

For the Testing Plan, the RMSys system development are using the User Acceptance Test (UAT) method which define as a form where the users will evaluate the system before being exported to the marketplace. Below is an example of project UAT form.

Table 3.13 User Acceptance Test (UAT)

No.	Module	Activities	Status	Comments
1	Login	Button Login are works	Yes [] No []	
		User can fill in the login details in the Login page.	Yes [] No []	
2	Manage Registration	Button for “Register New Account” works. (Owner user)	Yes [] No []	
		Able to fill in all the required details of account registration. (Owner user)	Yes [] No []	
		Update button for selected profile account works. (Owner user)	Yes [] No []	
		Delete button for selected profile account works. (Owner user)	Yes [] No []	
3	Manage Products	Button for “Add New Product” works. (Owner user)	Yes [] No []	

		Able to fill in all the required details of the product registration. (Owner user)	Yes [] No []	
		Update button for selected product details works. (Owner user)	Yes [] No []	
		Delete button for selected product details works. (Owner user)	Yes [] No []	
		Button for “Request Products” works. (Branch Manager user)	Yes [] No []	
		Able to fill in all the required details of the product request. (Branch Manager user)	Yes [] No []	
		Submit button are works for request the products. (Branch Manager user)	Yes [] No []	
4	Manage Supplier	Button for “Add New Supplier” works. (Owner user)	Yes [] No []	

		Able to fill in all the required details of the supplier registration. (Owner user)	Yes [] No []	
		Update button for selected supplier details works. (Owner user)	Yes [] No []	
		Delete button for selected supplier details works. (Owner user)	Yes [] No []	
		The “View Supplier List” are works. (Branch Manager user)	Yes [] No []	
5	Manage Report	Button for “Add New Report” works. (Clerk user)	Yes [] No []	
		Button for “Submit” works. (Clerk user)	Yes [] No []	
		The “View Report Record” are works. (Owner user)	Yes [] No []	

3.8 Gantt chart

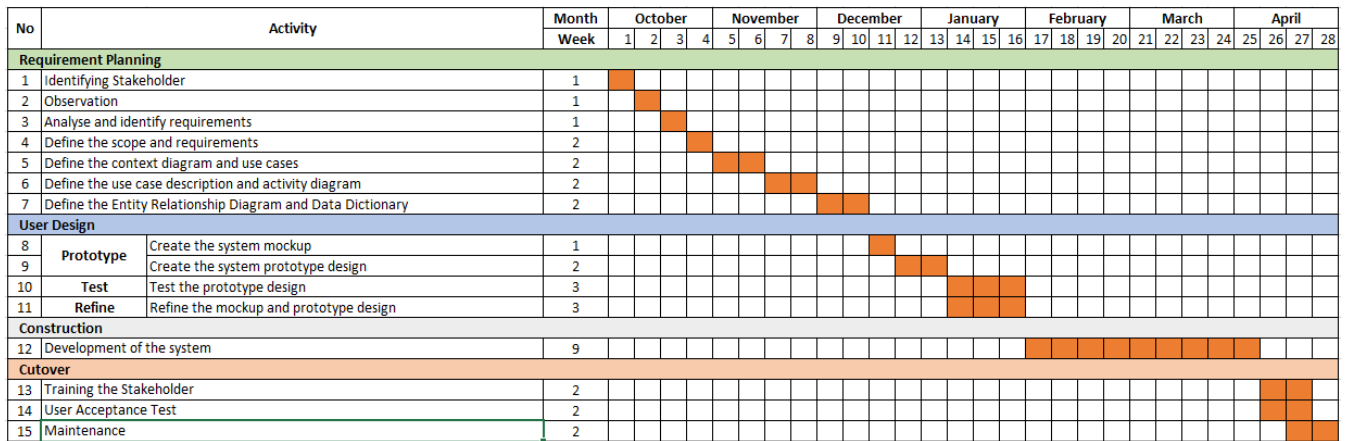


Figure 3.20: Gantt Chart

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Introduction

For chapter 4, it will clarify the implementation process and method to develop the RMSys project system which include coding phases, any related settings and installation of system to the server since the system are depends to the server because there are using database to save some data from the users. The database used in this system are MySQL and the installed software used to develop the coding of the project is Visual Studio Code. Other than that, this system used HTML, CSS and JAVASCRIPT as the front end language and PHP as the scripting language run by Xampp software. This phase is the main and important phase since it will develop the Graphical User Interface (GUI) along with the function of the system. The system development are using the Laravel framework since it has been declared as Rapid Application Development (RAD) that allows the developers to create web application quickly and efficiently.

4.2 System Design and Implementation

For this section, there will be covers the system interfaces (UI) and the system features including the coding used in its development. As stated before, the RMSys website system are being built by using the PHP Laravel framework which are using the Xampp as the local database and Heroku as the server. Figure below shows the example of database of user profile that has been developed in the RMSys system.

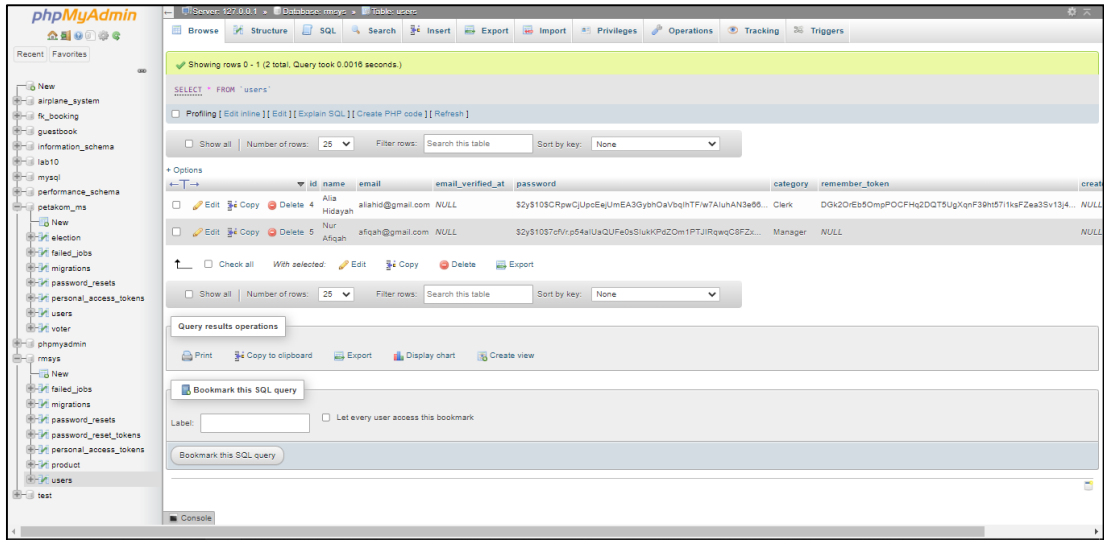


Figure 4. 1: phpMyAdmin interface

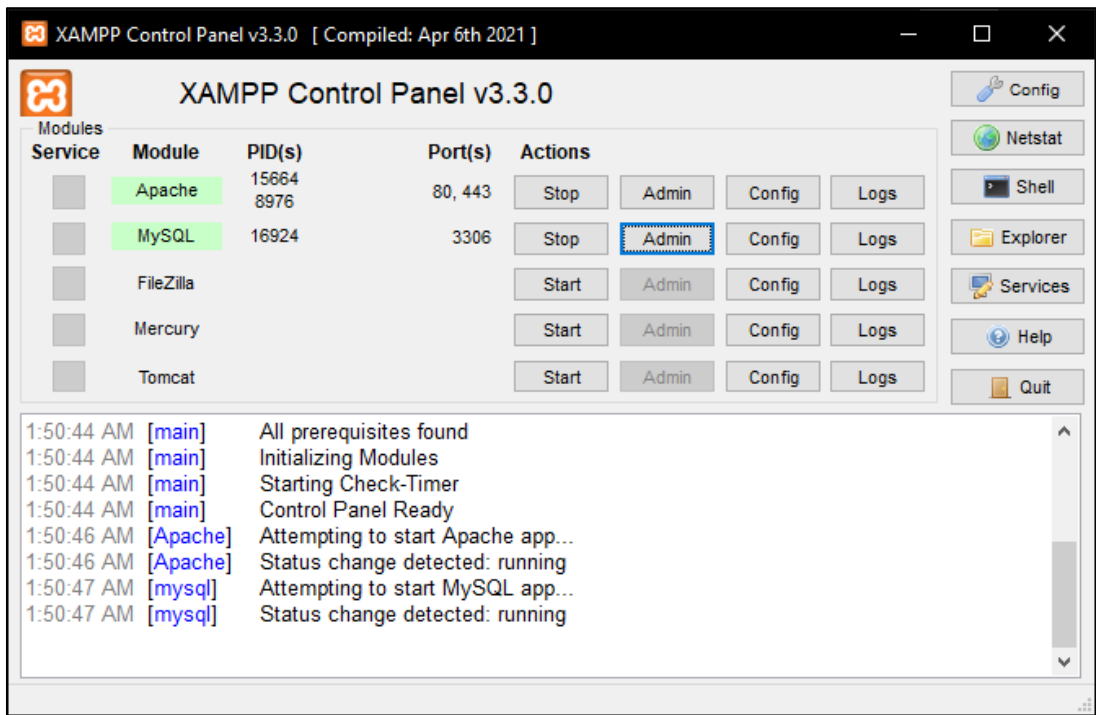


Figure 4. 2: XAMPP Control Panel Interface

4.3 System Interface

The interfaces for each module of the RMSys system will be displayed in this section. A number of the system's modules are created to carry out particular tasks for managing user profile and products for the RmsRay's business. Users can interact with the system and carry out certain tasks using the interface that is unique to each module. These user interfaces are created to be simple and straightforward so that users may easily traverse the system. Users may better understand how the RMSys system works and how it might assist them in managing their product stocks by seeing examples of the interfaces. Below are the total module that has been set for this system by each users which is Clerk, Branch Manager, and Owner users.

- a. Clerk
 - Manager user registration
 - Manage product and set each branch stock request limit
- b. Branch Manager
 - Add weekly sales for each branch
 - Display total sales with status
 - Request registered product
- c. Owner
 - Update status of total sales by Branch Manager
 - View product request list
 - View user registration list

Below is some of the interfaces (progress) that has been developed for the RMSys system according to the stated module. However, the user interface design might change and upgraded to be better design.

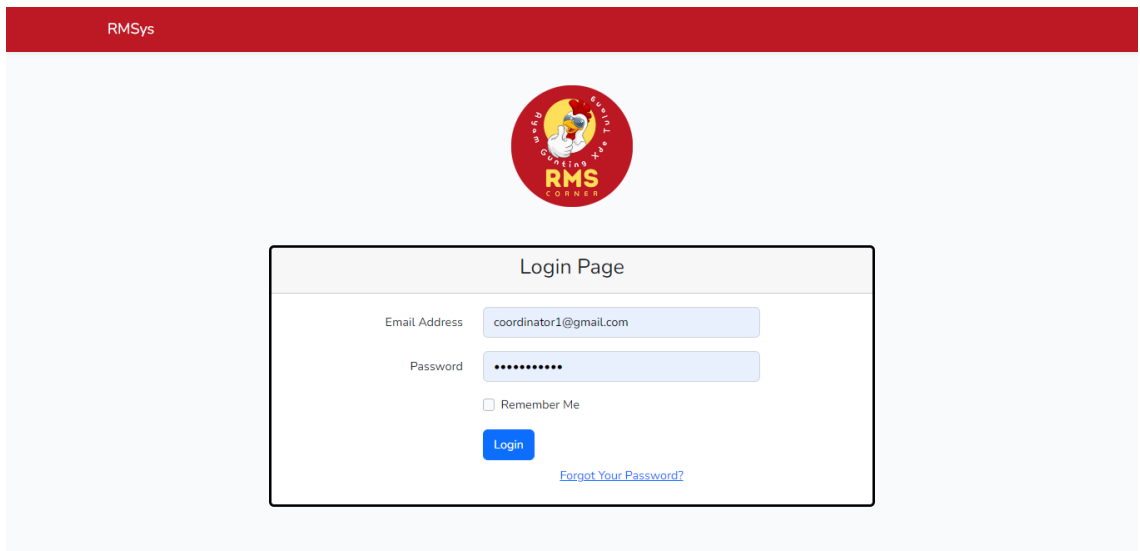


Figure 4. 3: Login Page

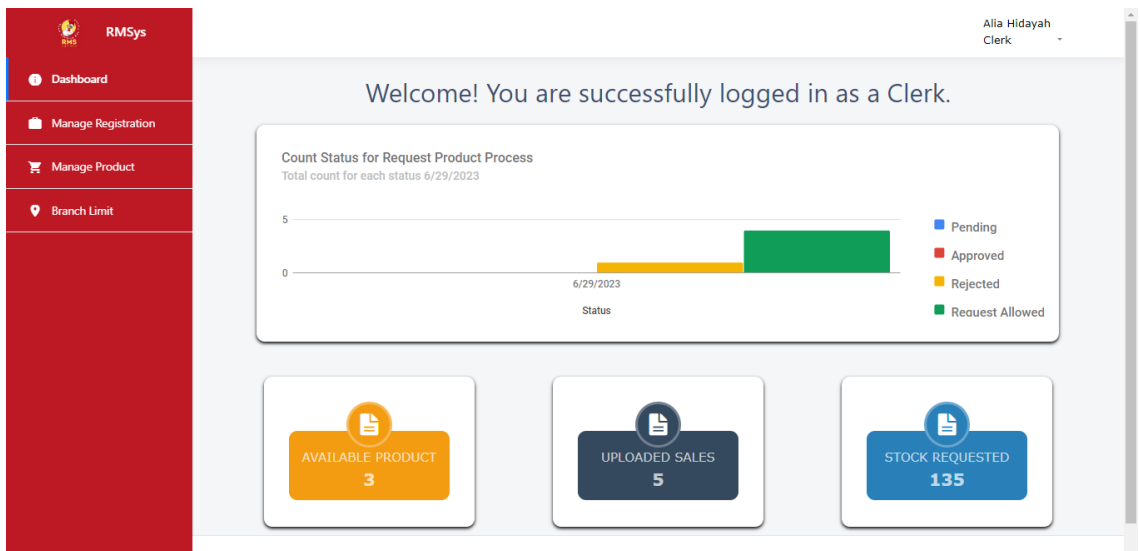


Figure 4. 4: Dashboard for Clerk

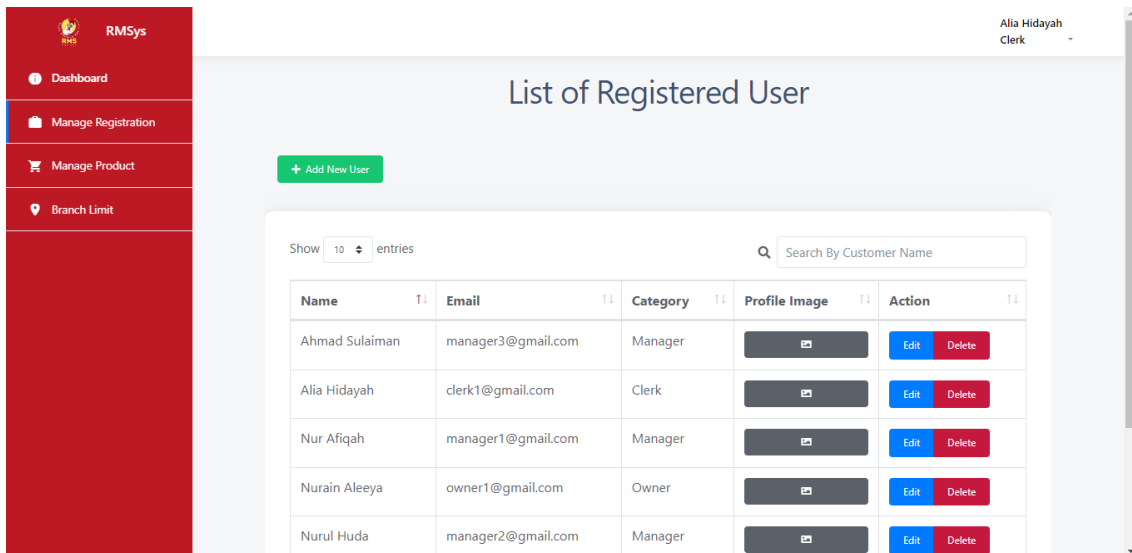


Figure 4. 5: List of Registered User (Clerk)

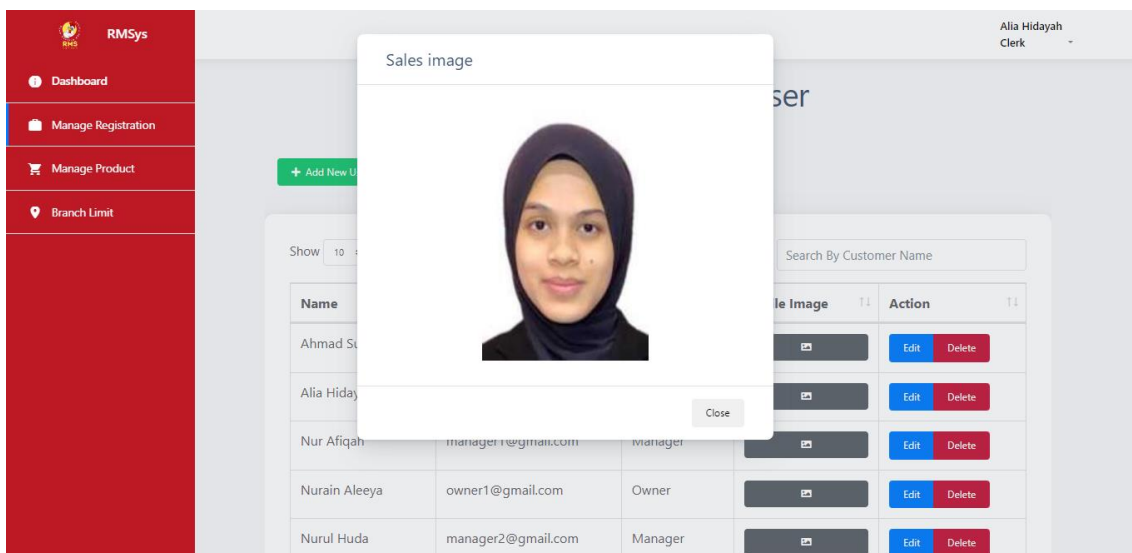


Figure 4. 6: Interface of Pop-up View Profile Image

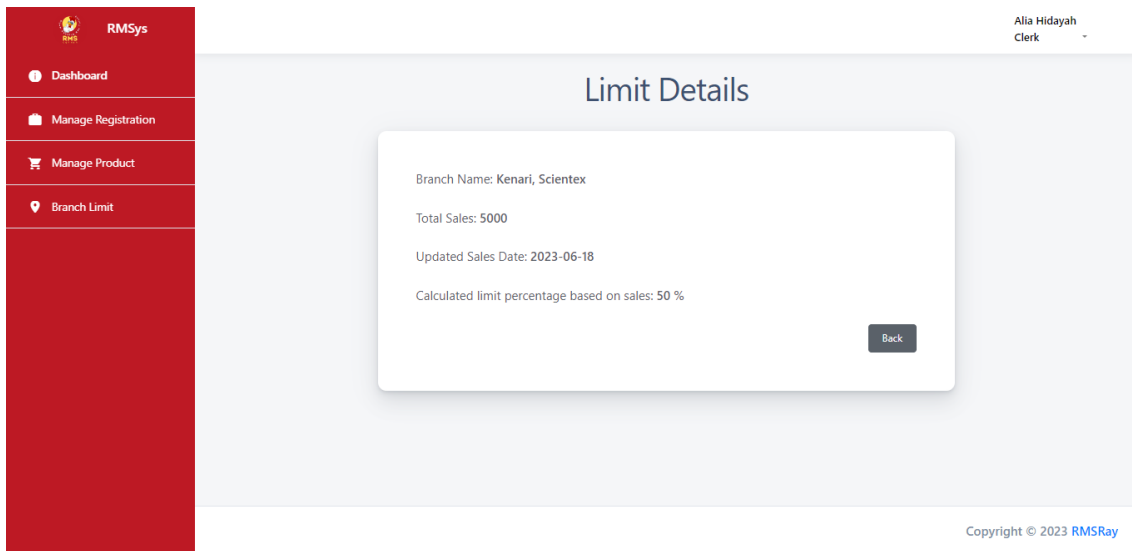


Figure 4. 7: Limit Details page

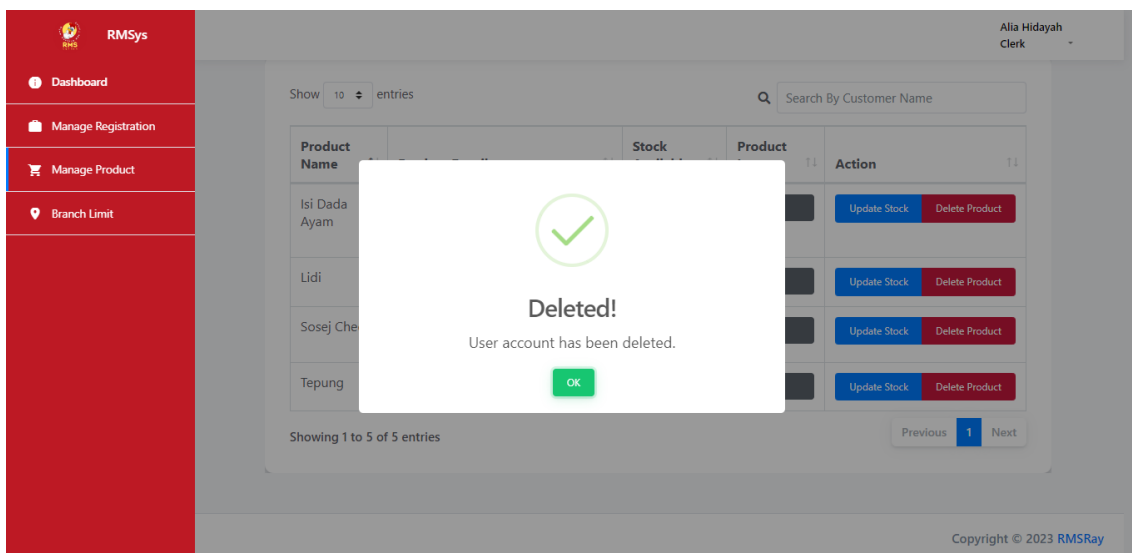


Figure 4. 8: Delete successful interface

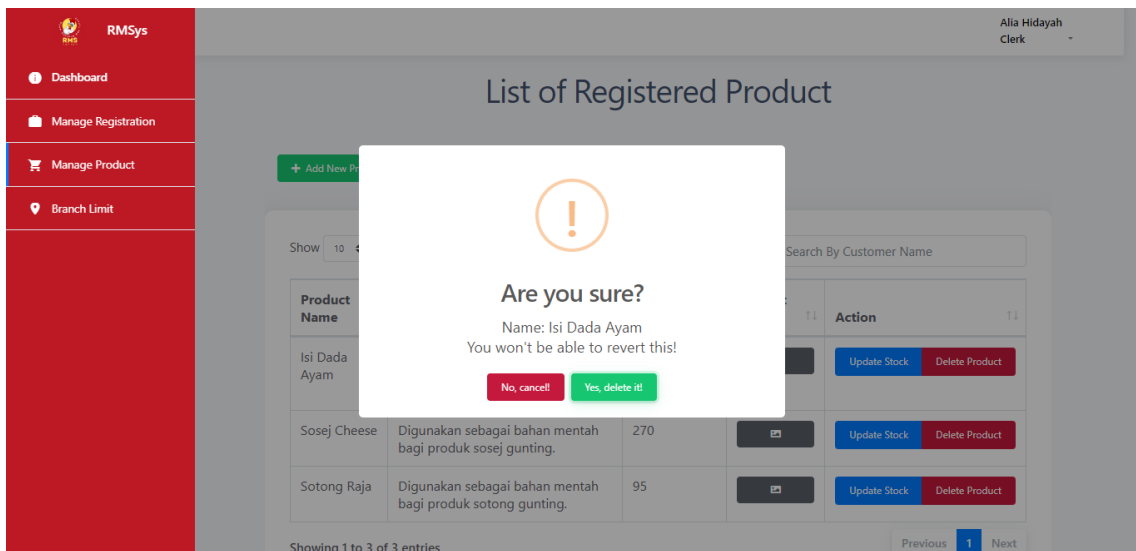


Figure 4. 9: Confirmation message to delete

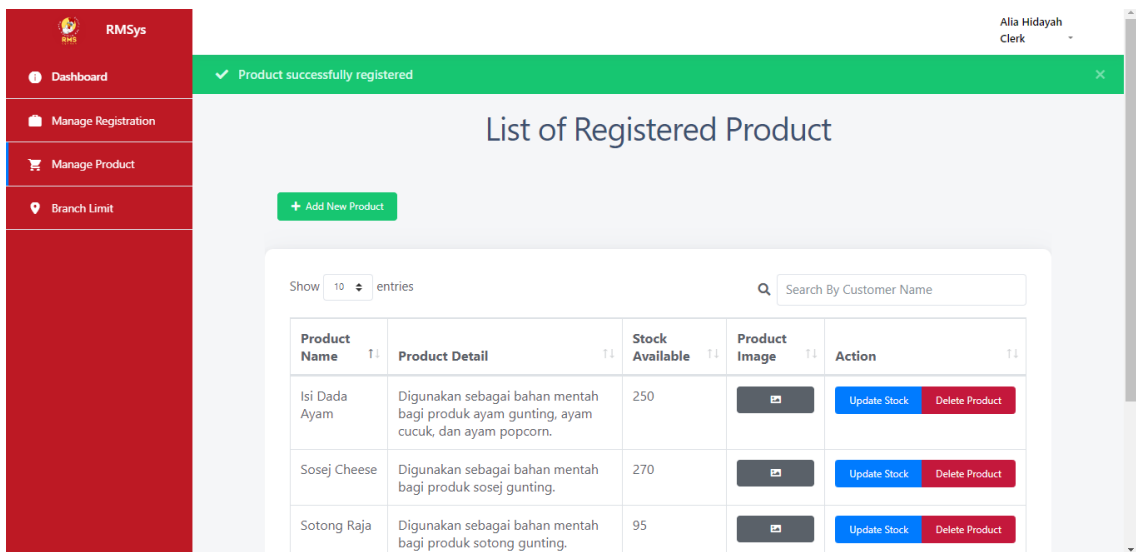


Figure 4. 10: List of Registered Product successful added product

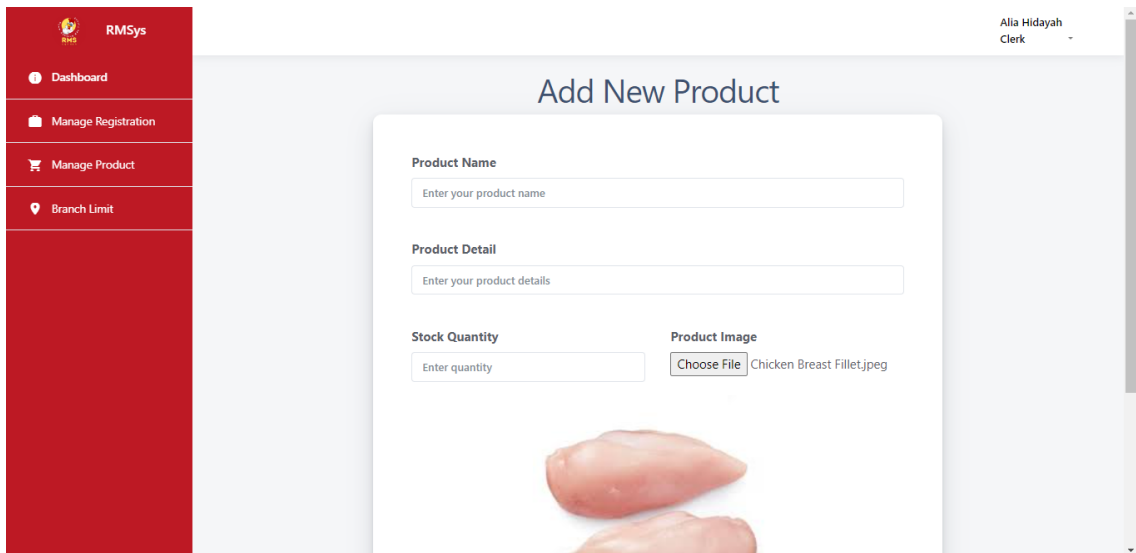


Figure 4. 11: Add New Product Page

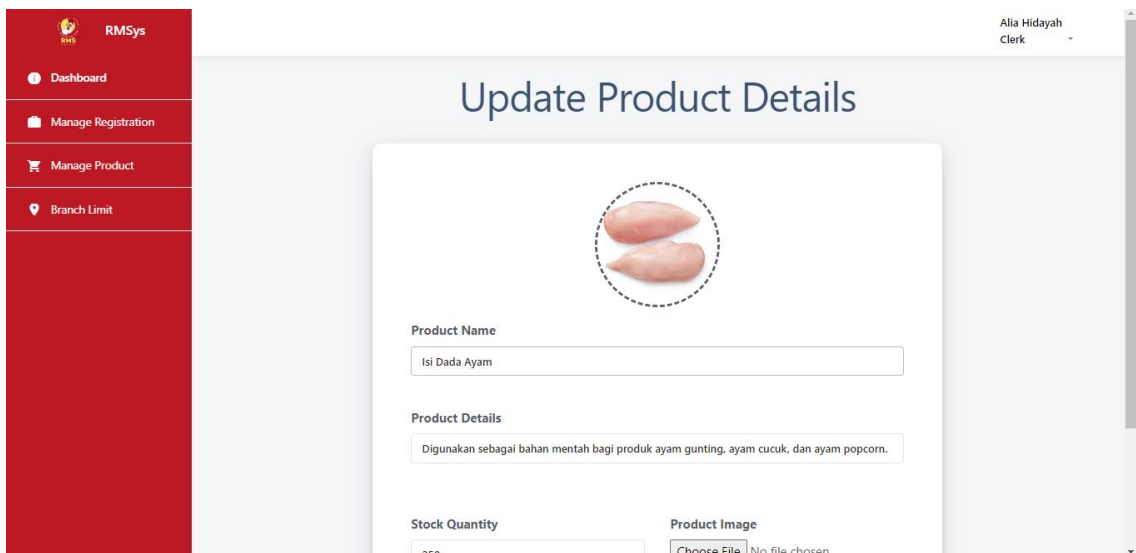


Figure 4. 12: Update Product Details Page

RMSys Nurain Aleeya
Owner

Sales Approval

Show 10 entries

Branch	Sales Date	Total Sales	Status	
Kelisa, Kota Masai	2023-06-17	3500	Rejected	View
Kenari, Scientex	2023-06-18	5000	Request Allowed	View
Pelanduk, Scientex	2023-06-19	4010	Request Allowed	View
Pelanduk, Scientex	2023-06-18	3020	Request Allowed	View
Sejora, Air Biru	2023-06-21	500	Request Allowed	View

Showing 1 to 5 of 5 entries Previous 1 Next

Figure 4. 13: Sales Approval (Owner)

RMSys Nur Afiqah
Manager

List of Product

Show 10 entries

Product Name	Product Detail	Stock Available	Action
Sosej Cheese	Digunakan sebagai bahan mentah bagi produk sosej gunting.	270	View Details
Isi Dada Ayam	Digunakan sebagai bahan mentah bagi produk ayam gunting, ayam cucuk, dan ayam popcorn.	250	View Details
test	tets	200	View Details
Sotong Raja	Digunakan sebagai bahan mentah bagi produk sotong gunting.	95	View Details

Showing 1 to 4 of 4 entries Previous 1 Next

Figure 4. 14: List of Request Product (Manager)

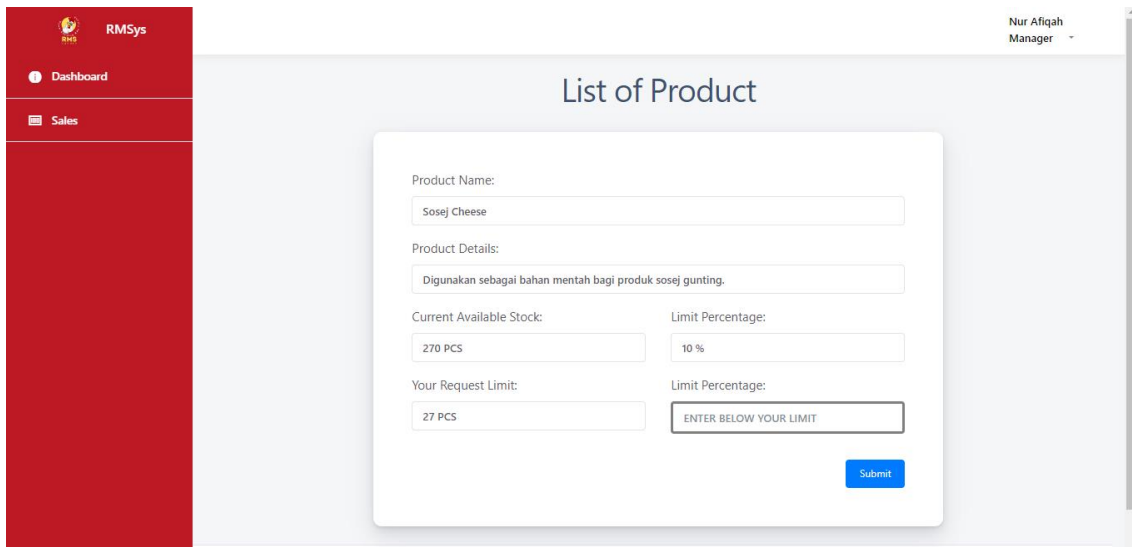


Figure 4. 15: Request Product (Manager)

4.4 Code Module

In this section, it will show selected page and its coding. There also have some explanation on how the users can use it. This system is using front-end language as HTML, CSS and JAVASCRIPT. Also, for the database, it using PHP Laravel framework as the scripting language. All the language are developed by using Visual Studio Code.

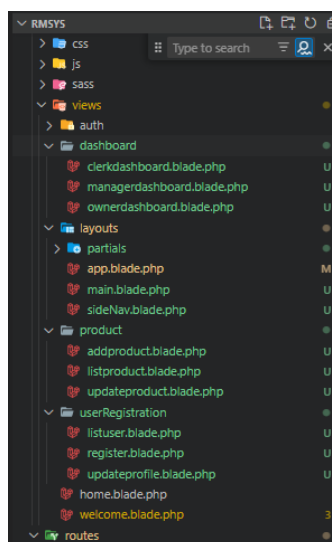


Figure 4. 16: Environment in Visual Studio Code (blade.php)

Figure above shows some of the interface file for the RMSys system that are being save as a blade.php file.

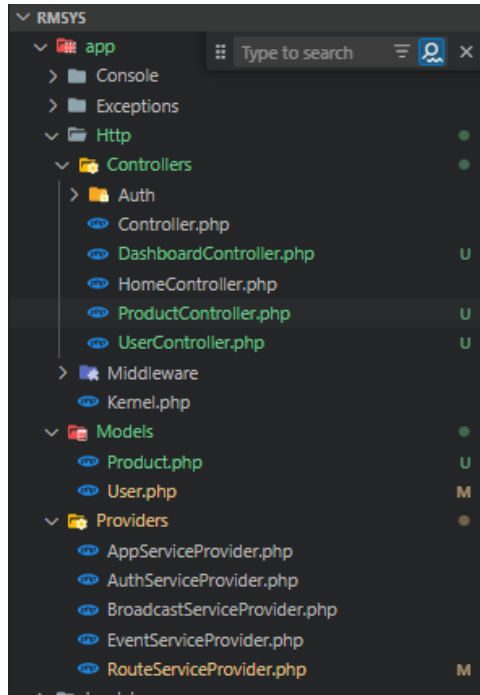


Figure 4. 17: Environment Visual Studio Code (Controller)

Figure above shows some of the controllers and models for this system. Since the development are developed by using Laravel, all the controllers and models are being created by using command in the terminal.

```

18 </a>
19 </nav>
20 </div>
21
22 <div class="nav-wrapper">
23 <ul class="nav flex-column">
24 <li class="nav-item">
25 <a class="nav-link {{ request()->routeIs('dashboard') ? 'active' : '' }}" href="{{ route('dashboard') }}"
26 <i class="material-icons">info</i>
27 <span>Dashboard</span>
28 </a>
29 </li>
30
31 <!-- GROUP SEP START-->
32 @if( auth()->user()->category== "Clerk")
33 <li class="nav-item">
34 <a class="nav-link {{ request()->routeIs('listuser') ? 'active' : '' }}" href="{{ route('listuser') }}"
35 <i class="material-icons">work</i>
36 <span>Manage Registration</span>
37 </a>
38 </li>
39 <li class="nav-item">
40 <a class="nav-link {{ request()->routeIs('listproduct') ? 'active' : '' }}" href="{{ route('listproduct') }}"
41 <i class="material-icons">work</i>
42 <span>Manage Product</span>
43 </a>
44 </li>
45 <li class="nav-item">
46 <a class="nav-link {{ request()->routeIs('register') ? 'active' : '' }}" href="{{ route('register') }}"
47 <i class="material-icons">work</i>
48 <span>Branch Limit</span>
49 </a>
50 </li>

```

Figure 4. 18: Code for differentiate side nav

Figure above shows the codes for side bar navigation that has been separated according to user type which is Client, Branch Manager, and Owner.

```

resources > views > userRegistration > listuser.blade.php > section.p-5 > div.container > div.overflow-auto > div.table-responsive > div.card > div.card-body > table#dataTable.table
10 <div class="table-responsive">
11 <div class="col-lg-2 col-md-2 col-sm-2" style="float: left, >
12 <a class="btn btn-success" style="float: right; width:100%;> role="button" href="{{ route('register') }}">
13 <i class="fas fa-plus"></i>&nbsp;Add New User</a><br>
14 </div><br><br>
15 <div class="card">
16 <div class="card-body">
17 <table class="table table-bordered" id="dataTable" cellspacing="0">
18 <thead>
19 <tr>
20 <th>Name</th>
21 <th>Email</th>
22 <th>Category</th>
23 <th>IC Number</th>
24 <th>Action</th>
25 </tr>
26 </thead>
27 <tbody>
28 @foreach($userRecord as $data)
29
30 <tr id="row{{ $data->id }}">
31
32 <td>{{ $data->name }}</td>
33 <td>{{ $data->email }}</td>
34 <td>{{ $data->category }}</td>
35 <td>{{ $data->category }}</td>
36 <td>
37 <div class="btn-group" style="float: center;">
38 <a href="{{ route('updateprofile', $data->id) }}" class="btn btn-primary">Edit</a>
39 <button class="btn btn-danger" type="button" onclick="deleteItem(this)" data-id="{{
40 $data->id }}" data-name="{{ $data->name }}">Delete</button>
41 </div>
42 </td>

```

Figure 4. 19: Code for User List Page

This figure shows some of the codes for list of user page that can be accessed by the Clerk user. Clerk are responsible to add new profile, update and delete if needed.

```

resources > views > product > addproduct.blade.php > div.container > div.row.justify-content-center > div.col-md-8 > div.card > div.card-body > ul.list-group.list-group-flush > li.list-g
15 @endif
16
17 <ul class="list-group list-group-flush">
18 <li class="list-group-item p-3">
19 <div class="row">
20 <div class="col">
21 <form action="{{ route('insertProduct') }}" enctype="multipart/form-data" method="POST"
22 id="formNew" onsubmit="upload()">
23 @csrf
24 <input type="text" class="form-control" value="addtech" id="addTech" name="addTech"
25 hidden>
26 <div class="form-row">
27 <div class="form-group col-md-12">
28 <label for="productname">Product Name </label>
29 <input type="text" class="form-control" id="productname" name="productname"
30 placeholder="Enter your product name" required>
31 </div>
32 </div>
33 <div class="form-row">
34 <div class="form-group col-md-12">
35 <label for="productdetail">Product Detail </label>
36 <input type="textarea" class="form-control" id="productdetail"
37 name="productdetail" placeholder="Enter your product details" required>
38 </div>
39 </div>
40 <div class="form-row">
41 <div class="form-group col-md-6">
42 <label for="stock">Stock Quantity </label>
43 <input type="number" class="form-control" id="stock" name="stock"
44 placeholder="Enter quantity" required>

```

Figure 4. 20: Code for Add Product Page

The figure above are some of the codes for add product page for the Client users.

```

7 use Illuminate\Http\Request;
8 use App\Models\User;
9
10 class UserController extends Controller
11 {
12     public function register()
13     {
14     }
15 }
16 public function listuser()
17 {
18 }
19 }
20 }
21 }
22 }
23 }
24 }
25 }
26 public function index()
27 {
28 }
29 }
30 }
31 }
32 }
33 }
34 }
35 }
36 }
37 }
38 }
39 }
40 }
41 //insert data into database (register profile)
42 public function addUser(Request $request)
43 {
44 }
45 }
46 }
47 }
48 }
49 }
50 }
51 }
52 }
53 }
54 }
55 }
56 }
57 }
58 }
59 //view update profile
60 public function updateprofile($id)
61 {
62 }
63 }
64 }
65 }
66 }
67 }
68 }
69 }
70 }
71 }
72 }
73 }
74 }
75 }
76 }
77 }
78 }
79 }
80 }
81 }
82 }
83 }
84 }
85 public function updateUser(Request $request, $id)
86 {
87 }
88 }
89 }
90 }
91 }
92 }
93 }
94 }
95 }
96 }
97 }
98 //delete profile
99 public function delprofile(Request $request, $id)
100 {
101 }
102 }

```

Figure 4. 21: Code for function in User Controller

Figure above shows some of the functions that has been implemented in the UserController. For Laravel framework, all the functions can be controlled in just one controller depending each module. This helps the developer to develop the system efficiently.

```

10 public > bootstrap1 > index.html > html > head > meta
11 </DOCTYPE html>
12 <html lang="en">
13 <head>
14     <meta charset="UTF-8" />
15     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
16     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
17     <title>Play | Free Startup and SaaS Landing Page Template by UIdeck</title>
18
19     <!-- Primary Meta Tags -->
20     <meta name="title" content="Play - Free Open Source HTML Bootstrap Template by UIdeck">
21     <meta name="description" content="Play - Free Open Source HTML Bootstrap Template by UIdeck Team">
22
23     <!-- Open Graph / Facebook -->
24     <meta property="og:type" content="website">
25     <meta property="og:url" content="https://uideck.com/play/">
26     <meta property="og:title" content="Play - Free Open Source HTML Bootstrap Template by UIdeck">
27     <meta property="og:description" content="Play - Free Open Source HTML Bootstrap Template by UIdeck Team">
28     <meta property="og:image" content="https://uideck.com/wp-content/uploads/2021/09/play-meta-bs.jpg">
29
30     <!-- Twitter -->
31     <meta property="twitter:card" content="summary_large_image">
32     <meta property="twitter:url" content="https://uideck.com/play/">
33     <meta property="twitter:title" content="Play - Free Open Source HTML Bootstrap Template by UIdeck">
34     <meta property="twitter:description" content="Play - Free Open Source HTML Bootstrap Template by UIdeck Team">
35     <meta property="twitter:image" content="https://uideck.com/wp-content/uploads/2021/09/play-meta-bs.jpg">
36
37     <!--===== Favicon Icon =====>
38     <link
39         rel="shortcut icon"
40         href="assets/images/favicon.svg"
41         type="image/svg"

```

Figure 4. 22: Code for Bootstrap implementation

This is some additional file where it contain the bootstrap links implementation for the system.

4.5 User Acceptance Test

No.	Module	Activities	Status	Comments
1	Manage Login (All)	User can insert their login details in the Login Page.	Yes /	
			No	
		Login button are works.	Yes /	
			No	
		Remember Me button are works.	Yes /	
			No	
2	Manage Registration (Clerk)	Able to display all registered user in User List.	Yes /	
			No	
		Register New User button are works.	Yes /	
			No	
		Able to fill in all the required details for the user registration.	Yes /	
			No	
		Save button are works for add new user.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved user details are shown in the User Update Page.	Yes /	
			No	
Able to re-enter updated details of user.	Yes /			
	No			
Save button are works and data are being saved.	Yes /			
	No			
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
3	Manage Product (Clerk)	Able to display all registered product in Product List.	Yes /	
			No	
		Register New Product button are works.	Yes /	
			No	
		Able to fill in all the required details for the product registration.	Yes /	
			No	
		Save button are works for add new product.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved product details are shown in the Product Update Page.	Yes /	
			No	
Able to re-enter updated details of product.	Yes /			
	No			
Save button are works and data are being saved.	Yes /			
	No			
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
4	Manage Sales	Able to display all updated sales by the user in Sales List with its status.	Yes /	
			No	
		Add New Sales button are works.	Yes /	
			No	

	(Branch Manager)	Able to fill in all the required details for the sales registration.	Yes /			
			No			
		Save button are works for add new sales.	Yes /			
			No			
			Delete button are works at the Sales List Page.	Yes /		
				No		
			The selected data are being deleted successfully.	Yes /		
				No		
		Manage Sales	Able to display all updated sales in Sales List with its status.	Yes /		
				No		
(Owner)		Able to display the Sales details on the Sales Details Page.	Yes /			
			No			
		Approve and Reject button are works and status being updated.	Yes /			
			No			
		Able to display all data of user registration.	Yes /			
			No			
		Able to display all data of product registration	Yes /			
			No			
5	Request Stock	Able to display available product on the system and click on the selected product.	Yes /			
			No			
		The system able to show allow status for the selected product by the user.	Yes /			
			No			
	(Branch Manager)		If allowed, user are able to enter their required stock quantity.	Yes /		
				No		
			Submit button are works.	Yes /		
				No		
	Request Stock	(Clerk)	Able to display approved sales branch list by the Owner user.	Yes /		
				No		
				Able to click on the selected branch and view their sales details.	Yes /	
					No	
			Able to enter the limit for each selected branch.	Yes /		
				No		
		Save button are works.	Yes /			
			No			
		Able to choose to allow selected user to request for the product.	Yes /			
			No			

Name: Maisarah binti Faisal

Signature:



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No.	Module	Activities	Status	Comments
1	Manage Login (All)	User can insert their login details in the Login Page.	Yes /	
			No	
		Login button are works.	Yes /	
			No	
		Remember Me button are works.	Yes	
			No /	
		Forget Password button are works.	Yes	
			No /	
2	Manage Registration (Clerk)	Able to display all registered user in User List.	Yes /	
			No	
		Register New User button are works.	Yes /	
			No	
		Able to fill in all the required details for the user registration.	Yes /	
			No	
		Save button are works for add new user.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved user details are shown in the User Update Page.	Yes /	
			No	
		Able to re-enter updated details of user.	Yes /	
			No	
		Save button are works and data are being saved.	Yes /	
			No	
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
3	Manage Product (Clerk)	Able to display all registered product in Product List.	Yes /	
			No	
		Register New Product button are works.	Yes /	
			No	
		Able to fill in all the required details for the product registration.	Yes /	
			No	
		Save button are works for add new product.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved product details are shown in the Product Update Page.	Yes /	
			No	
		Able to re-enter updated details of product.	Yes /	
			No	
		Save button are works and data are being saved.	Yes /	
			No	
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
4	Manage Sales	Able to display all updated sales by the user in Sales List with its status.	Yes /	
			No	
		Add New Sales button are works.	Yes /	
			No	

	(Branch Manager)	Able to fill in all the required details for the sales registration.	Yes	/		
			No			
		Save button are works for add new sales.	Yes	/		
			No			
		Delete button are works at the Sales List Page.	Yes	/		
			No			
		The selected data are being deleted successfully.	Yes	/		
			No			
		Manage Sales	Able to display all updated sales in Sales List with its status.	Yes	/	
				No		
	(Owner)	Able to display the Sales details on the Sales Details Page.	Yes	/		
			No			
		Approve and Reject button are works and status being updated.	Yes	/		
			No			
		Able to display all data of user registration.	Yes	/		
			No			
		Able to display all data of product registration	Yes	/		
			No			
5	Request Stock (Branch Manager)	Able to display available product on the system and click on the selected product.	Yes	/		
			No			
		The system able to show allow status for the selected product by the user.	Yes	/		
			No			
		If allowed, user are able to enter their required stock quantity.	Yes	/		
			No			
		Submit button are works.	Yes	/		
			No			
		Request Stock (Clerk)	Able to display approved sales branch list by the Owner user.	Yes	/	
				No		
			Able to click on the selected branch and view their sales details.	Yes	/	
				No		
			Able to enter the limit for each selected branch.	Yes	/	
				No		
		Save button are works.	Yes	/		
			No			
		Able to choose to allow selected user to request for the product.	Yes	/		
			No			

Name: Alia Hidayah

Signature:



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No.	Module	Activities	Status	Comments
1	Manage Login (All)	User can insert their login details in the Login Page.	Yes /	
			No	
		Login button are works.	Yes /	
			No	
		Remember Me button are works.	Yes	
			No /	
		Forget Password button are works.	Yes	
			No /	
2	Manage Registration (Clerk)	Able to display all registered user in User List.	Yes /	
			No	
		Register New User button are works.	Yes /	
			No	
		Able to fill in all the required details for the user registration.	Yes /	
			No	
		Save button are works for add new user.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved user details are shown in the User Update Page.	Yes /	
			No	
		Able to re-enter updated details of user.	Yes /	
			No	
		Save button are works and data are being saved.	Yes /	
			No	
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
3	Manage Product (Clerk)	Able to display all registered product in Product List.	Yes /	
			No	
		Register New Product button are works.	Yes /	
			No	
		Able to fill in all the required details for the product registration.	Yes /	
			No	
		Save button are works for add new product.	Yes /	
			No	
		Update button are works.	Yes /	
			No	
		Saved product details are shown in the Product Update Page.	Yes /	
			No	
		Able to re-enter updated details of product.	Yes /	
			No	
		Save button are works and data are being saved.	Yes /	
			No	
Delete button are works.	Yes /			
	No			
The selected data are deleted.	Yes /			
	No			
4	Manage Sales	Able to display all updated sales by the user in Sales List with its status.	Yes /	
			No	
		Add New Sales button are works.	Yes /	
			No	

	(Branch Manager)	Able to fill in all the required details for the sales registration.	Yes	/		
			No			
		Save button are works for add new sales.	Yes	/		
			No			
			Delete button are works at the Sales List Page.	Yes	/	
				No		
			The selected data are being deleted successfully.	Yes	/	
				No		
		Manage Sales	Able to display all updated sales in Sales List with its status.	Yes	/	
				No		
		(Owner)	Able to display the Sales details on the Sales Details Page.	Yes	/	
				No		
	Approve and Reject button are works and status being updated.		Yes	/		
			No			
		Able to display all data of user registration.	Yes	/		
			No			
		Able to display all data of product registration	Yes	/		
			No			
3	Request Stock (Branch Manager)	Able to display available product on the system and click on the selected product.	Yes	/		
			No			
		The system able to show allow status for the selected product by the user.	Yes	/		
			No			
			If allowed, user are able to enter their required stock quantity.	Yes	/	
				No		
			Submit button are works.	Yes	/	
				No		
		Request Stock (Clerk)	Able to display approved sales branch list by the Owner user.	Yes	/	
				No		
			Able to click on the selected branch and view their sales details.	Yes	/	
				No		
		Able to enter the limit for each selected branch.	Yes	/		
			No			
		Save button are works.	Yes	/		
			No			
		Able to choose to allow selected user to request for the product.	Yes	/		
			No			

Name: Nur Afiqah

Signature:



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4.6 Conclusion

This chapter has covered several aspects of the implementation of the RMSys system including software and database implementation, user manual development, and User Acceptance Testing (UAT). Through the use of HTML, CSS, and Javascript, the software for the RMSys has been developed along with a database using Xampp. The user interface for the system has also been designed to be intuitive and user-friendly. UAT has also been conducted to ensure that the system meets the end-users' requirements and expectations. However, there are still many progress that need to be done to complete the system. There are few design that need to be fixed and some requirements that are still not complete.

4.5. Conclusion

The RMSys Stock Inventory System is designed to serve as a unified platform for saving stray pets, aiming to streamline the process. Primarily, it assists the RMSRay Company in managing stock flow efficiently across their multiple branches. The system caters to three user types: Branch Managers, Clerks, and Owners. Moreover, the system is custom-built exclusively for the RMSRay Company, as they are the primary stakeholders of this project.

In the previous chapter, the system underwent rigorous testing through User Acceptance Test (UAT), engaging volunteer users to provide feedback and suggestions for improvement. The results were highly positive, as users expressed satisfaction with the system's ability to expedite their tasks. Nonetheless, there are still areas in the RMSys system that require further enhancements.

To sum up, the website development for the RMSys Stock Inventory System has successfully fulfilled its objectives. Overall, the project progressed smoothly, resulting in a final product that is considerably satisfying, despite a few repairable weaknesses.

4.7 Recommendation

In the previous chapter, it has discovered some weaknesses in the developed web system. These flaws necessitate certain maintenance measures to address them. One of the identified issues in the RMSys system is related to the functionality of setting stock limits for each Branch Manager user. To enhance this aspect, we propose an improvement where the system automatically sets the limits based on the range of sales uploaded by the Branch Manager, instead of relying on manual input by the Clerk. This modification would reduce the workload for the Clerk user. Ensuring perfection in this system is crucial because it guarantees its effectiveness and long-term usability, enabling it to consistently fulfil its intended purpose.

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