WEB-BASED PROFILING AND INVENTORY OF EQUIPMENT AND SUPPLIES INFORMATION SYSTEM FOR SLSU MAIN CAMPUS CLINIC

A Capstone Project
Presented to the Faculty of the
College of Computer Studies and Information Technology,
Southern Leyte State University

In Partial Fulfillment of the Requirements
For the degree Bachelor of Science in Information Technology

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DEDICATION

This project is dedicated to our Creator who has been a constant source of support and encouragement during the challenges of graduate school and life. To our adviser who really help us to finish this paper. I am truly thankful for having you in my life. This work is also dedicated to our parents, who have always loved us unconditionally and whose good examples have taught us to work hard for the things that I aspire to achieve.

ACKNOWLEDGEMENT

This research paper would not be possible without many people's guidance, help, and support.

First and foremost, the researchers owe their sincere gratitude to our Almighty God, who guides us throughout the making of this paper. He is our God who gives us strength and a spirit of perseverance.

We would also like to send our most tremendous gratitude to our parents, who gave us courage through the making of this research. They are the ones who give us financial support throughout this research.

We would also like to thank our subject teacher and research adviser for their guidance and support from the beginning until the end of making this paper and carrying out this research.

We want to extend our gratitude to our classmates and friends who help us one way or another.

EXECUTIVE SUMMARY

The profiling and inventory of equipment and supply system is developed to simplify the process made currently in the university clinic. This type of system is a web-based system which the user/administrator can use the system not just in their office but also in other places, this system can easily adopt changes through updating stocks by inserting new items, changing the stocks number and generating reports. The system was developed following the waterfall model. The evaluation results shows that the system is mostly functional, mostly reliable, mostly usable, mostly efficient, mostly maintainable, mostly agree for maintainability and portability, mostly secure and mostly compatible. It is therefore recommended that this system be adopted and utilized to organizations with similar process and procedures.

Keywords: Inventory system, Profiling, Web-based, Waterfall model, ISO25010.

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Chapter I

INTRODUCTION

This chapter presents the 'WEB-BASED PROFILING AND INVENTORY OF EQUIPMENT AND SUPPLIES INFORMATION SYSTEM FOR SLSU MAIN CAMPUS CLINIC' that will be useful for the management.

Project Context

The inventory of supplies or items takes up all of the employee's time and is traditionally done with logbooks and pencils. Each record in the manual inventory system must be manually updated and maintained, which raises the possibility of human error. Additionally, this system is vulnerable to data loss because inventory sheets can be misplaced, destroyed over time, or replaced. The inflow and outflow of the supply stocks must be balanced with this inventory. With only one click of the mouse and a short amount of time, tracking the list and keeping an eye on the supplies and equipment has become simple. The efficiency and efficacy of one department are always advantageous with these many types of systems.

These systems have the power to improve office organization. They also instantly provide complete descriptions of the various tools and supplies, making it simple to determine how many items are in stock.

Inventory tracking and equipment and supply monitoring have been done using inventory management systems. When introduced to a company, an inventory management model or system performs several functions by simplifying and making labor easier. Ensuring a timely supply of raw materials and maintaining accurate records of all losses or

stock consumption ensures that business operations run without interruption. This makes it easier to replenish stock as needed. Reddy, C. (2016)

Access to inventory reports is necessary to make decisions. An inventory department cannot summarize and report based on real-time inventory data when using a manual process. Putting together knowledge of historical patterns can be difficult. When management cannot see inventory stock or trends, making informed decisions about purchases and inventory becomes challenging. School clinics, which mostly rely on manual tracking, lack real-time reporting, and display overstocking, understocking, and inefficiency, are one example of an institution that is a widespread problem.

The researchers developed and implemented web-based profiling of inventory and equipment supplies information management system, which provides an alternative approach like managing lists of equipment, supplies, stock, and date of expiry of each store, and offers comprehensive information on each kit.

Purpose and Description of the Project

Web-based profiling and inventory of equipment and supplies information systems for the SLSU clinic are designed to help the clinic personnel accurately manage inventory levels by enabling them to know where the list is and how much is in stock. With this system, they can give detailed descriptions of all the equipment and supplies, making it straightforward to ascertain how many of each item are on hand.

It is also beneficial in maintaining the doctors, nurses, and other clinic personnel equipment.

Objectives of the Project

The general objective of this study was to create and develop web-based profiling and inventory of equipment and supplies information system in Southern Leyte State University Clinic (Main Campus).

Specifically, this study aims to:

1. To create a web system that provides the date of arrival and expiry of the supplies and equipment.
2. To design a system that will display complete information on the clinic supplies and provide updated stock information and status report.
3. Solving the manual inventory processes in the clinic through a computerized or digitalized inventory management system.
4. To develop a secure database for the inventory system in the clinic.

Scope and Limitations of the Project

The development system core study is Southern Leyte State University-Main Campus's very own Web-based profiling and inventory equipment and supplies, a system that focuses on the design and development of current procedures and practices from manual to computerized, an information system that offers services to the clinic personnel, and a website that displays complete supplies and equipment information needed to voice out.

The system has its user authorization option to effectively secure the records inside the system. There will be one (1) level of authorization, the Admin.

Chapter II

REVIEW OF RELATED LITERATURE

This chapter provides an overview of related literature and related studies from domestic and international authors, developers, and professors that have a significant bearing on the development and implementation of the project, as well as the concepts pertinent to the present study relating to other studies and briefly discussed to provide the basis for this study.

Related Literature

According to M. O Yinyeh and S. Alhassan (2013), an inventory control solution can help simplify work processes within an organization, improving efficiency and productivity. With an inventory management system, staff may be operating efficiently. The way information passes from one employee to another wastes valuable time and leaves room for mistakes in a stocking.

According to Bronack (2012), The Inventory System should be integrated into the everyday functions of personnel entering and maintaining asset information. The system will reduce the effort devoted to asset management while supplying personnel with the information they need to perform their functions.

According to Shanker (2013), The difference between manual and digital systems. Data processing can reduce errors and boost productivity. In a matter of seconds, it is simple to summarize the inputted data. A computerized sales system, which needs a machine and system software, is more expensive than manual computation using paper,

pencil, or ballpoint pen. The computer approach also incurs additional costs for program maintenance and training.

According to Eugene F. Brigman (2013), who wrote about it in the book Fundamentals of Financial Management, companies are increasingly using inventory systems. An inventory count is the first thing a computer starts with. The inventory balance is continuously updated as the computer makes and logs withdrawals. The computer automatically sets an order when the recorded point is reached, and the recorded balance is raised when this new order is received. Each item has a magnetic code, which an electronic reader reads as it is checked out. The reader subsequently modifies the computer's inventory balance while simultaneously feeding the price to the cash register tape.

According to Hinsdale: Holt, Richard, and Winston Sounder (2015), Companies are increasingly using inventory systems. An inventory count is the first thing a computer starts with. The inventory balance is continuously updated as the computer makes and logs withdrawals. The computer automatically sets an order when the recorded point is reached, and the recorded balance is raised when this new order is received. Each item has a magnetic code. As an article is checked out, it passes over an electronic reader, modifying the computer's inventory balance while simultaneously feeding the price to the cash register tape. Retail stores have carried this system quite a distance. An order is placed when the balance reaches the recorder point.

Related Studies

According to Valdez K (2017). Inventory management is crucial for a business to accomplish its objectives of maintaining the correct quantity of inventory and eliminating waste. It is anticipated that a web-based inventory management system in a university context will assist various laboratories in keeping track of the condition of their instruments and equipment. This study describes a methodology for implementing a web-based inventory system in five different engineering department labs at a big public university in Davao. To create such a system, PHP was used as the programming language, MySQL was chosen as the backend database, and CSS was used to design the user interface. Two screenshots have been provided to give readers a taste of the proposed web-based system and its applications. An organization like a university could gain a competitive edge through effective operational performance with the help of this online system, which would assist the staff in charge of the laboratories in learning about the labs' capacity and the pertinent asset information availability.

According to Muluk, Asmuliardi & Jonrinaldi (2020). Their study named "A recommended policy of pharmaceutical inventory system in pharmacy installation management of the pharmacy, particularly the installation of pharmacy inventory management must be understood by the hospital. The Semen Padang Hospital is a set of medical facilities with a single pharmacy serving as the hub for purchasing, storing, and distributing drugs throughout the hospital. However, given the current situation, Semen Padang Hospital cannot meet the demand for medications for its patients because several medications are currently out of stock in the hospital's inventory. This has an impact on the turnaround time for the patients, many of whom have unresolved medical issues, as well.

The number of prescriptions that have not yet been received rises noticeably month after month and rises ten times more from July to December. Because Semen Padang Hospital lacks a policy to oversee the purchase of medications, this problem developed. First, based on their investment worth, the drugs will be divided into three classes using the ABC analysis. The suggested medication inventory policy is solved using a probabilistic inventory model (EOQ+Safety stock) for class A and vital medications and joint replenishment for class B and C (Non-vital) medicines. Because the underlying assumptions are consistent with the current state of affairs at Semen Padang Hospital, these models are employed. According to the proposed inventory policy, Semen Padang Hospital might save up to 63.27% of the costs incurred for the last three months of 2018. (October – December 2018)

According to Ehsan Ahmadi (2019). This article provides a current review of the literature on surgical instruments and supplies inventory management. The pieces published by scientific researchers and created optimization techniques and the papers published by practitioners and documented their observations of the current challenges in the operating room were divided into two groups after a systematic analysis of the literature.

According to Unit Jones Isabela, The goal is to create a system that gathers and retains patient, medication, and inventory data while making it accessible for decision-making, analysis, management action, and policy-making. The administrator must log into the system to record and enter all the necessary data for the transaction. All submitted data are kept in a database. The database also contains all patient and medication information.

The design of this study included observation, interviews, questionnaires, and integration of relevant studies and literature.

According to TY - JOU Tungcul, Mignonette Kummer, Marifel. To improve the current system in use and eliminate the difficulties and obstacles faced by the Supply Office staff members in inventory management, record keeping, monitoring and tracking, and report creation, this study was done in conjunction with the development of SEIMTMS. Classification and clustering algorithms were used to provide information and comprehensive decision support reports that help the supply officer and university administration with decision-making and budget allocation. The system also used the Clustering technique in conjunction with the MFP algorithm to predict the frequent purchases of supplies and equipment repairs. Office Heads depend on these decision support reports to decide which things need to be acquired for a given quarter.

Chapter III

TECHNICAL BACKGROUND

This chapter contains the project's technicality, how the present system works, details of the technology used in creating and deploying, and how the scheme works.

Technicality of the project

The proponents developed a web-based program wherein the admin can access it through laptops and personal computers. The web-based inventory equipment and supplies system is online profiling and inventory of equipment and supplies monitoring for clinic staff for easy and convenient access by the team without using the traditional process.

Details of the technologies to be used

This project will be available in laptops, and computers to run the system.

In the developed project, the following technology tools are used:

VS Code – In order to ensure the precise and quick gathering of data and information, we used Microsoft Visual Studio Code to encode the system's source code throughout development.

PHP – is a multi-purpose scripting language that is particularly well suited to server-side web development, as PHP is often run on a web server. It can also be applied to client-side GUI programs and command-line scripting.

Xampp– This will be used by developers as a development tool to enable web designers and programmers to test their work on their personal computers without Internet access.

MySQL – is a relational database management system that is open-source. Because MySQL is one of the databases that is suitable with system development, the developer will employ it.

Apache – A web server program known for its involvement in the early development of the World Wide Web is the apache HTTP Server.

HTML – This is the language used to create web pages. This is the simplest computer language to learn, in my opinion. A Web page editing application can be used to build one without it, but it will still utilize HTML to do it.

CSS – The layout of Web pages can be formatted using cascading style sheets. CSS enables Web designers to establish a consistent appearance across multiple pages of a website. They can be used to define text styles, table sizes, and other elements of Web sites that were previously only allowed to be defined in a page's HTML.

Bootstrap – for creating and developing a web application's graphical user interface

JavaScript - a dynamic programming language that is employed in the creation of a variety of various kinds of software, including web applications, games, and many other things.

How the project will work

This section presents the Functional Decomposition Diagram and the Architectural Layout of the developed project.

Figure 1 Shows the Functional Decomposition of the Project. The web-based profiling inventory of equipment and supplies. This system has only one (1) level of access: the Admin. The Admin is the only user that can manage the information system. The Admin can choose which categories to create a new stock entry, the Equipment, Medicines, and Supply. In the said categories, the Admin can identify the date of arrival of these equipment, supplies, and medicines. The Admin can also determine the status reports, complete information, and date of expiry and control the stock volume and input.

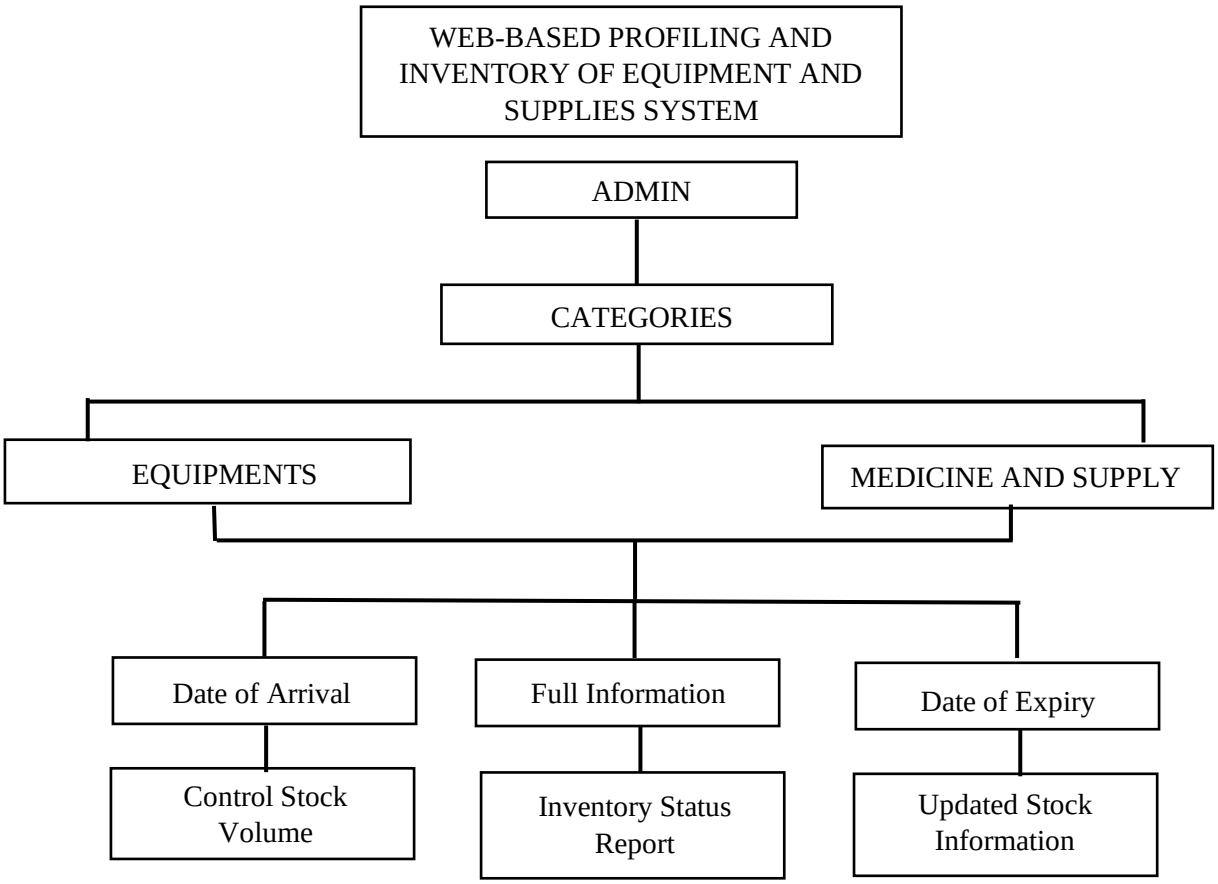


Figure 1. The Functional Decomposition of the Project

Figure 2 shows the Architectural Layout of the Project. The system is only accessible to the Admin. To run the system, the admin should have devices such as personal computers or laptops, and the admin should have internet access to use the system.

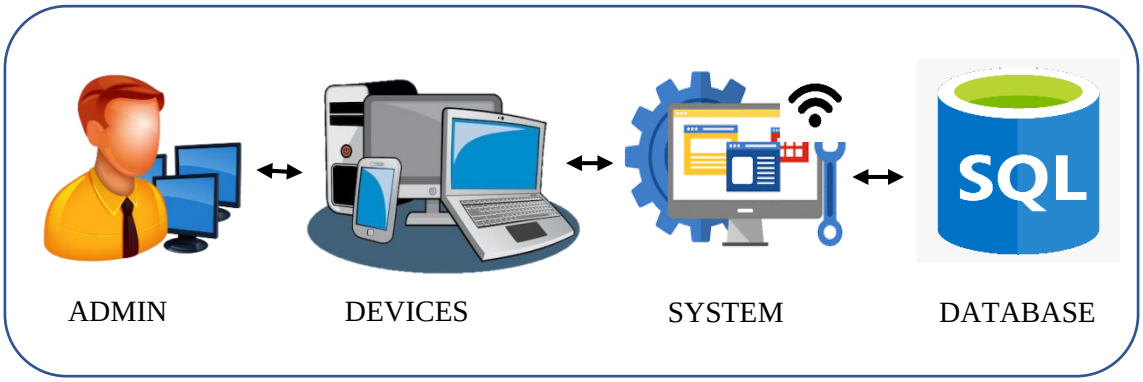


Figure 2. Architectural Layout of the Project.

CHAPTER 4

METHODOLOGY

This chapter covers the Requirement Analysis, Requirement Documentation, Design of the Software, Design of the System, System Processes, Development and Testing, Description of the System, Implementation Plan, and Implementation Results about Web–based on Profiling and Inventory of Equipment and Supplies Information System for SLSU – Main Campus Clinic.

Requirements Analysis

This section presents the Economic Feasibility, Requirements Modelling, and the Risk Assessment/Analysis of the Web - based Profiling and Inventory of Equipment and Supplies Information System for the SLSU – Main Campus Clinic.

System Requirements

This section presents the system requirements and modeling of the based Profiling and Inventory of Equipment and Supplies Information System for SLSU – Main Campus Clinic. The needs and expectations of this project are to keep track of the equipment and the medical supplies, such as the date of arrival of the equipment and medical supplies, the expiry dates, updating stocks, archiving, and the dispatch of the data. The nature of the system requires it to be used in a manner that is in order or chronological. Thus, the Web–based Profiling and Inventory of Equipment and Supplies Information System for SLSU – Main Campus Clinic is, therefore, can only execute as expected if inevitable if not all input requirements are to be followed and implemented. These requirements are as follows.

Input

The following are the required inputs of the system for it to function as accurately and efficient as prescribed.

- The admin is the only user that can manage the Information System.
- The admin can create new stock designs and control stock volume.
- The admin can see inventory status reports and update and modify the stock entry.

Process

The following are the processes the system implements to generate accurate reports precisely as prescribed.

- The system can archive data so that the expiry data, such as medical supplies, can store on another table.
- The system can dispatch data so that it can cause to automatically decreasing in stocks.
- The system will manage and keep tracking the data.

Output

The following are the outputs that the system can generate so long as the required inputs, and processes are met and executed accordingly.

- The system will generate the reports coming from previous and updated data.
- The system able to display the type of data needed for the admin.

Performance

The following are the performance requirement that the system must be able to accommodate on run time.

- The system is operational seven days a week.
- The system is at most 5 seconds.
- The system prepares monthly reports for the Inventory of Medicine Supplies and Equipment.

Security and Control

For the system to function efficiently and meet the requirement, security measures must be implemented. Thus, the following are the requirement for the system to work as effectively and efficiently as possible**.**

- The system will monitor the Inventory every day.
- The system will spot-check the Inventory list.
- The system will review report data.

Data and Process Modelling

Context Diagram

Figure 3 shows the context diagram and presents the basic overview of the system or process being analyzed or modeled.

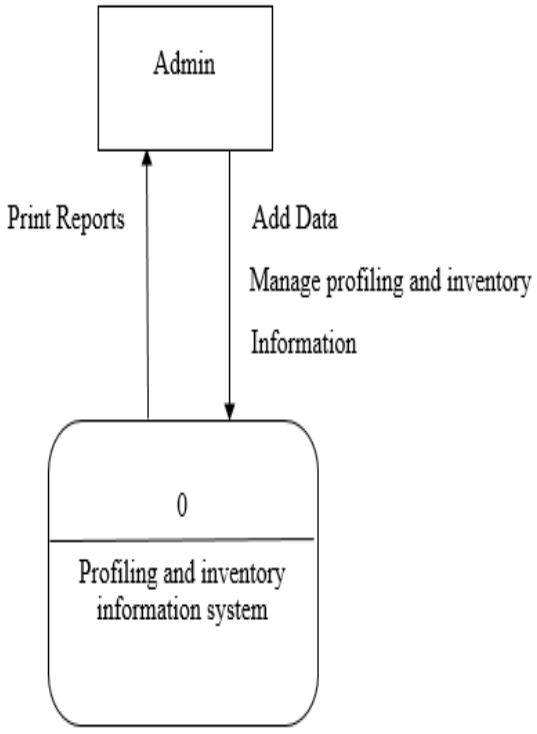


Figure 3. The Context Diagram

Data Flow Diagram

The following diagram depicts the basis of how data flows within the system. It shows how information is tallied and relayed for actors of the system, which is, CLINIC admin.

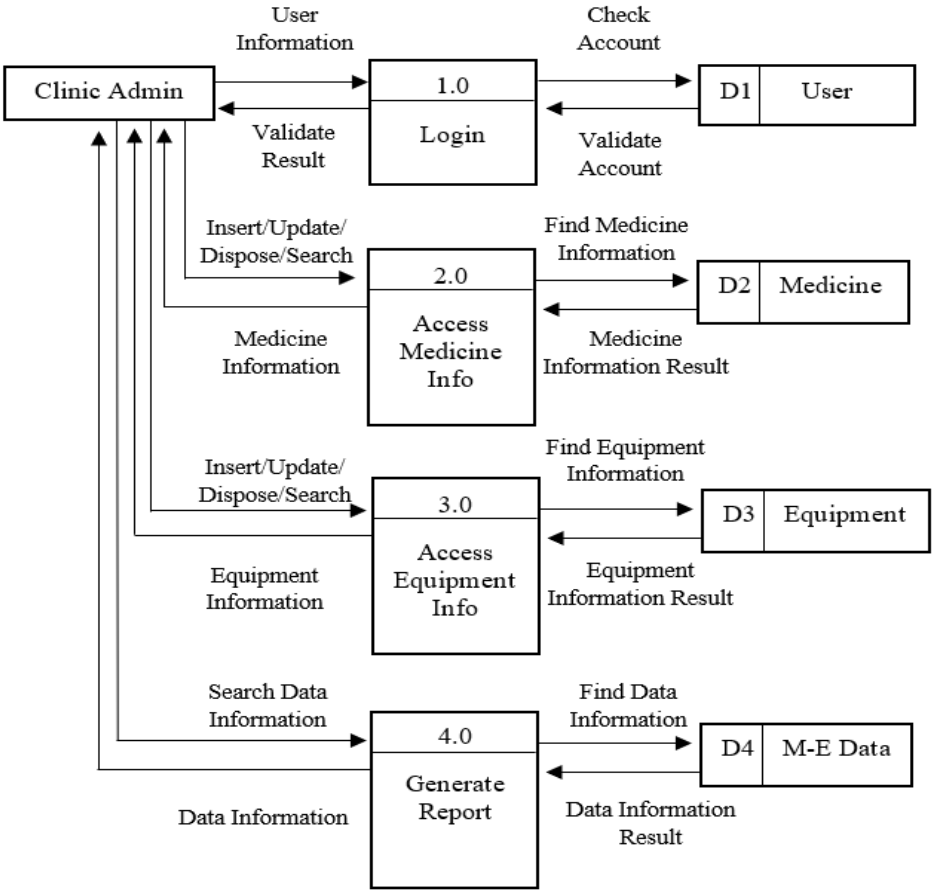


Figure 4. Data Flow Diagram

System Flowchart

The figure below depicts the system flow chart of the admin side of the project, wherein this side offers the Inventory of Medicine and Equipment that is provided and is also capacitated by the system.

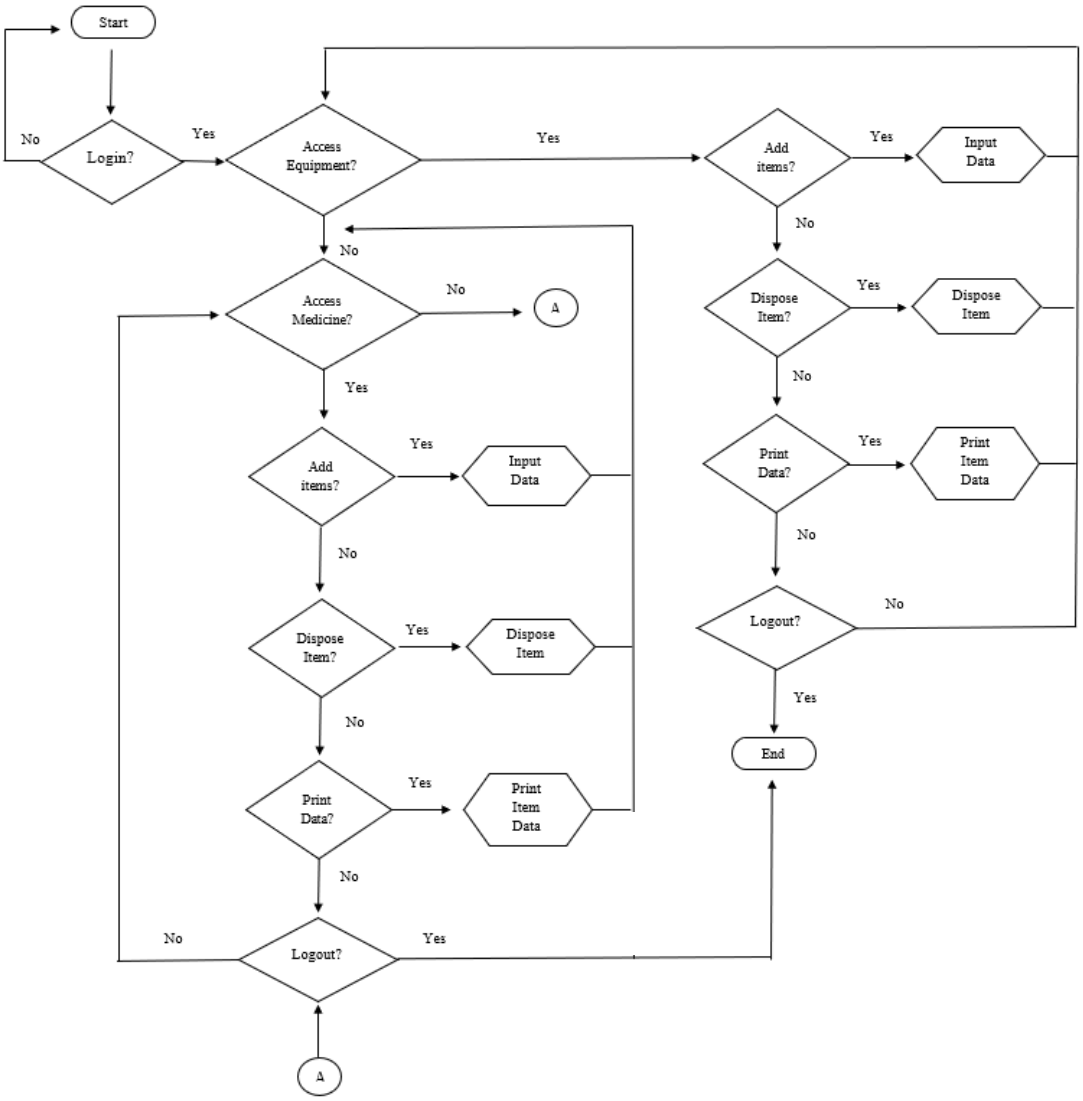


Figure 5. System Flowchart - Admin

Object Modelling

Use Case

The figure below represents the visual representation of what each side of the system is capacitated to access. The figure shows the features and functionalities the admin can perform within the context of the system.

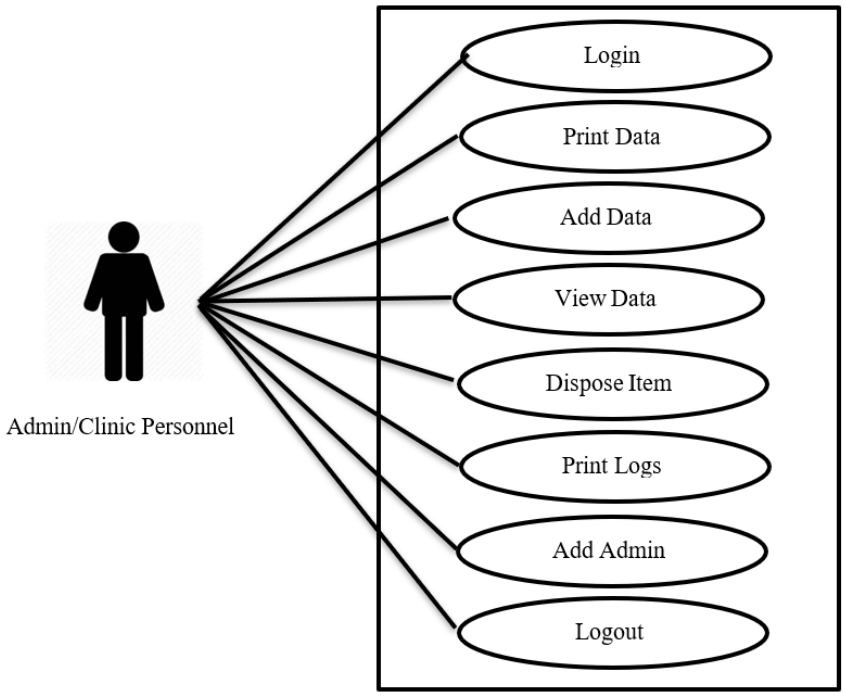


Figure 6. The System's Use Case Diagram of the System

Risk Assessment/Analysis

During the development of the system, it has undergone specific steps to determine its weaknesses and strengths. In addition, the study's proponents have also selected the possible scenarios and risks the system could encounter upon realization and launch. The following table represents the risk assessment/analysis that the system has undergone.

Table 2. Risk Assessment

Risk Description	Effect	Risk Grading (Low, Medium, High)	Recovery Measure
No Internet Connection	Inaccessible application/website	Low	Subscribe to another ISP
Malware Infection	System Dysfunction	High	Install Anti-virus software

Design of the Software

This section designates the Design of the Software; it encompasses the data structures that the system is implemented within its scope of functionalities. It also depicts the data the system requires, processes, and stores in its database.

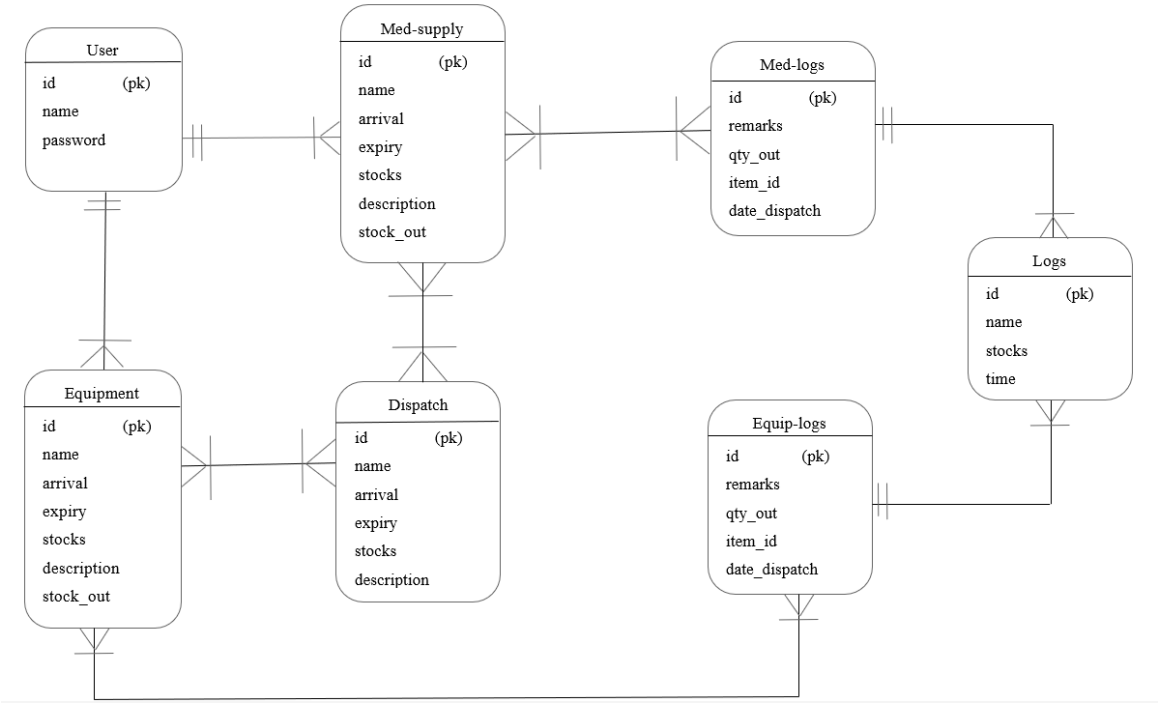


Figure 7. Database schema of the developed system

Table 3. Data Dictionary – User

Column	**Type**	**Comment**
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Password	Varchar(255)	Users password

Table 4. Data Dictionary – Equipment

Column	Type	Comment
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Arrival	Date	Date of arrival
Expiry	Date	Date of expiry
Stocks	Int(255)	Number of stocks
Description	Varchar(255)	Item's Information
Stock_out	Int(255)	Number of item's to be used

Table 5. Data Dictionary – Med_supply

Column	Type	Comment
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Arrival	Date	Date of arrival
Expiry	Date	Date of expiry
Stocks	Int(255)	Number of stocks
Description	Varchar(255)	Item's Information
Stock_out	Int(255)	Number of item's to be used

Table 6. Data Dictionary –Med_logs

Column	Type	Comment
Id	Auto_Increment	Unique
Remarks	Varchar(255)	Purpose of dispatch
Qty_out	Int(255)	Number of item's being dispatched
Item_id	Int(255)	Item's Id
Date_dispatch	timestamp	Date of dispatch

Table 7. Data Dictionary –Equip_logs

Column	Type	Comment
Id	Auto_Increment	Unique
Remarks	Varchar(255)	Purpose of dispatch
Qty_out	Int(255)	Number of item's being dispatched
Item_id	Int(255)	Item's Id
Date_dispatch	timestamp	Date of dispatch

Table 8. Data Dictionary - Logs

Column	Type	Comment
Id	Auto_Increment	Unique

Name	Varchar(255)	Item name
Stocks	Int(255)	Number of item's
Time	timestamp	Time of dispatch

Table 9. Data Dictionary – Equip_archive

Column	**Type**	**Comment**
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Arrival	Date	Date of arrival
Expiry	Date	Date of expiry
Stocks	Int(255)	Number of stocks
Description	Varchar(255)	Item's Information

Table 10. Data Dictionary – Med_archive

Column	**Type**	**Comment**
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Arrival	Date	Date of arrival
Expiry	Date	Date of expiry
Stocks	Int(255)	Number of stocks
Description	Varchar(255)	Item's Information

Table 11. Data Dictionary – Dispatch

Column	Type	Comment
Id	Auto_Increment	Unique
Name	Varchar(255)	Name of users
Arrival	Date	Date of arrival
Expiry	Date	Date of expiry
Stocks	Int(255)	Number of stocks
Description	Varchar(255)	Item’s Information

Design of the System

This section encompasses the design of the system. The following will showcase the system's interfaces while designated users access it.

The interface below is the welcome page or dashboard page for the Clinic Admin account; herein. The interface allows the Admin to log out, manage, and monitor the process.

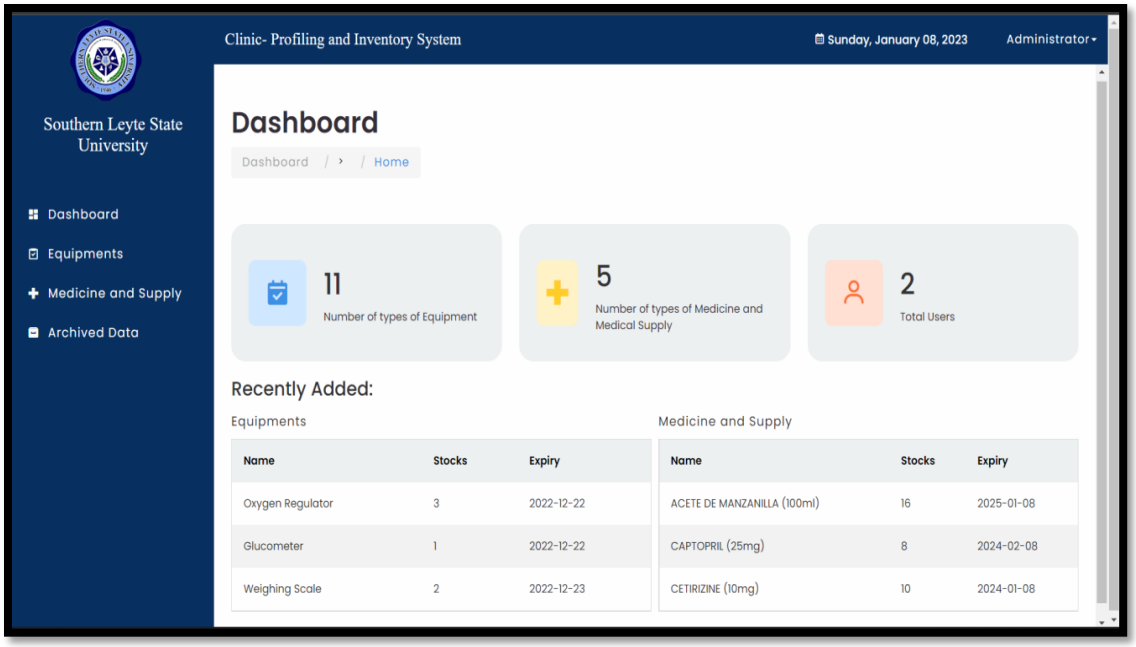


Figure 8. Design of the System

The interface below is the profiling and inventory monitoring interface of the Clinic Admin. This will provide detailed data information.

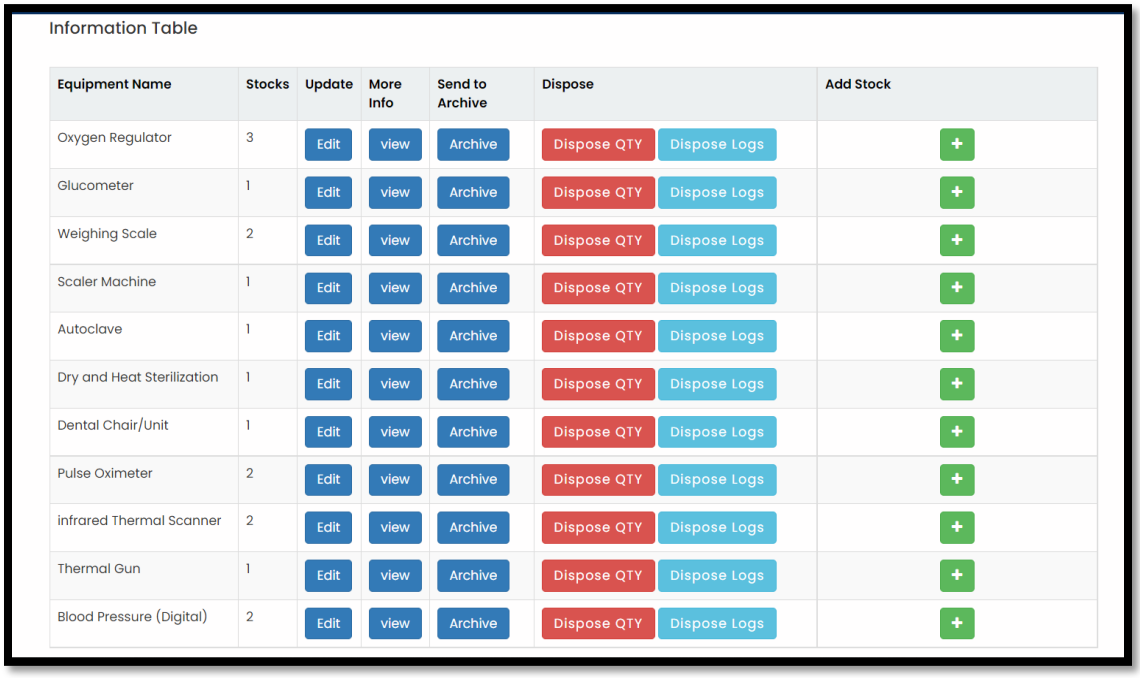
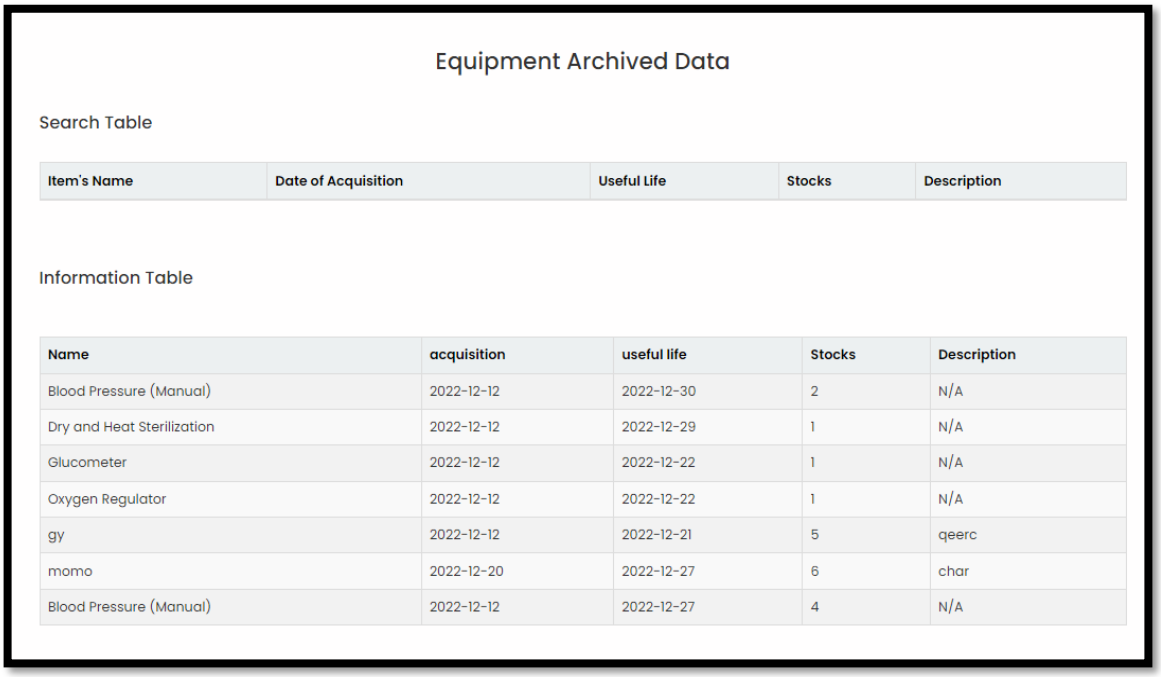


Figure 9: Design of the System

The interface below is the archived data of the system wherein the expiry equipment and medicine are located in this section.



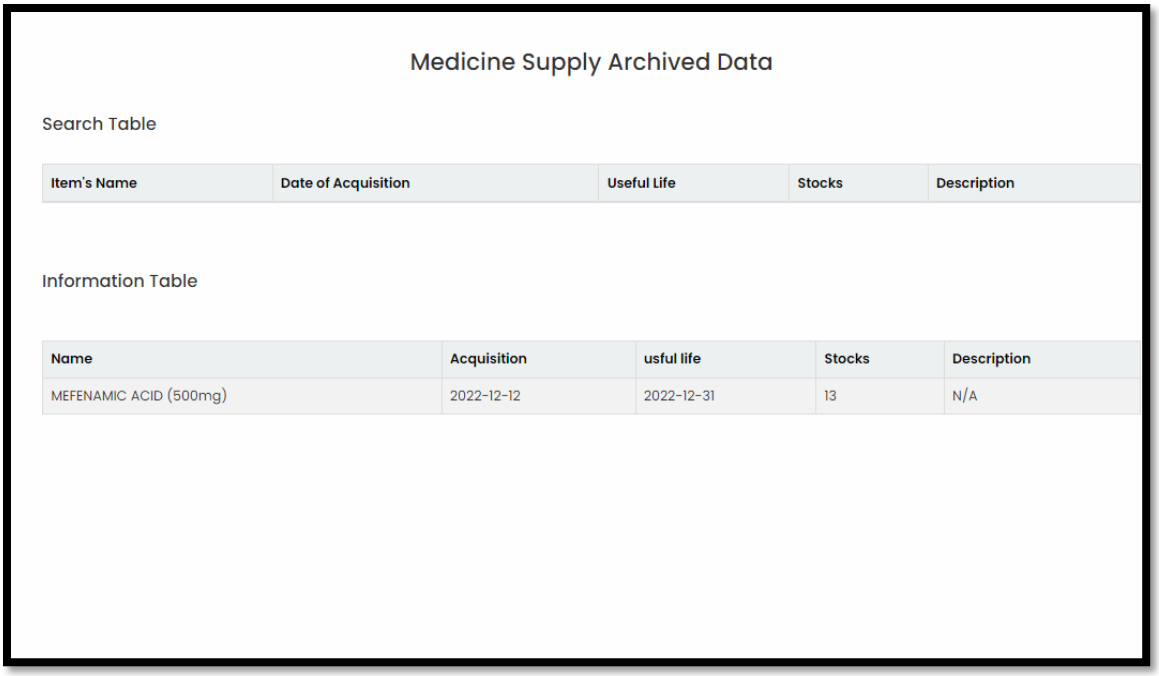


Figure 10: Design of the System

The interface below is the detailed data of print reports of equipment and medicine information systems.

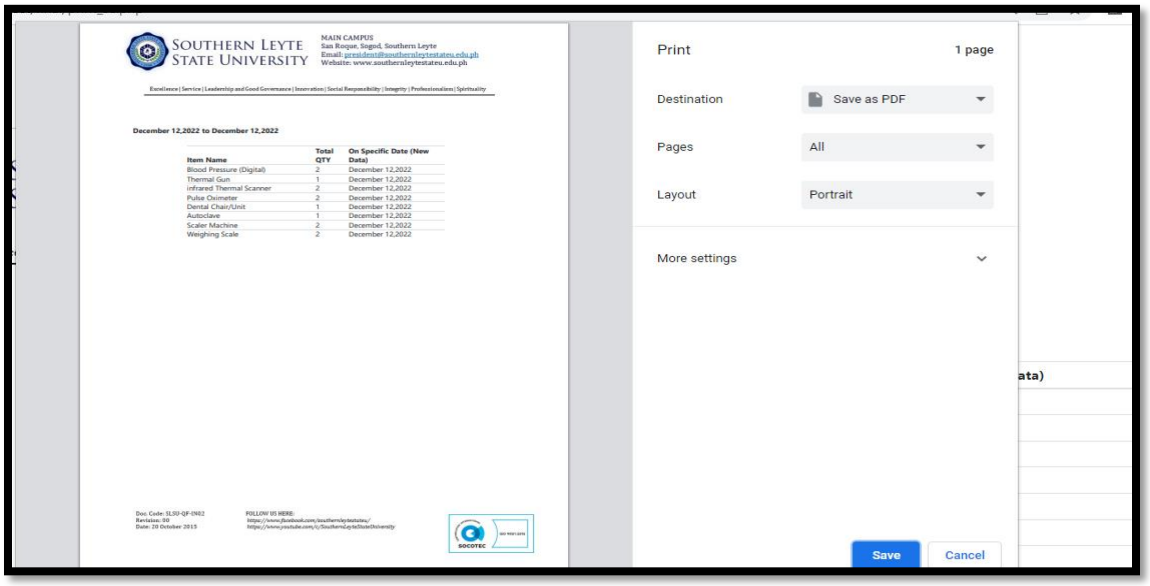


Figure 11: Design of the System

Interface Design

Login. This interface is the login form for the Admin, wherein this interface can already allow the user if the user is Admin or otherwise.

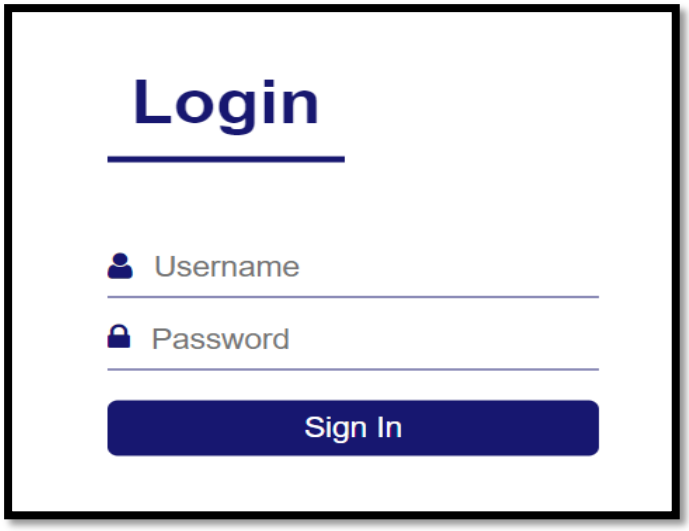


Figure 12: Login form

Sign Up for Admin. This interface is the login form for the Admin, wherein this interface can already allow the user if the user is Admin or otherwise.

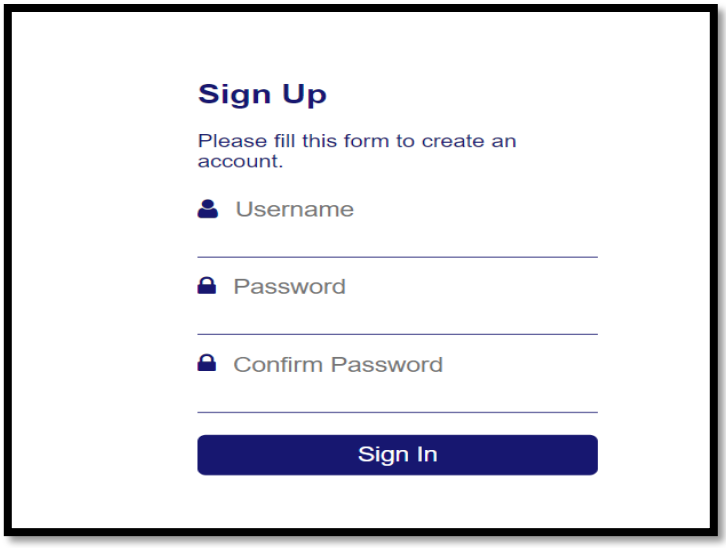


Figure 13. Sign Up for Admin

System Process

Figure 13 shows the System Process of Web-based Profiling and Inventory of Equipment and Supplies Information System. As we can see, the Input will be adding equipment items, adding Medicine and Supplies items, and adding User-Admin. For Process, the System will see the information, dispatch items, process Admin, and report all

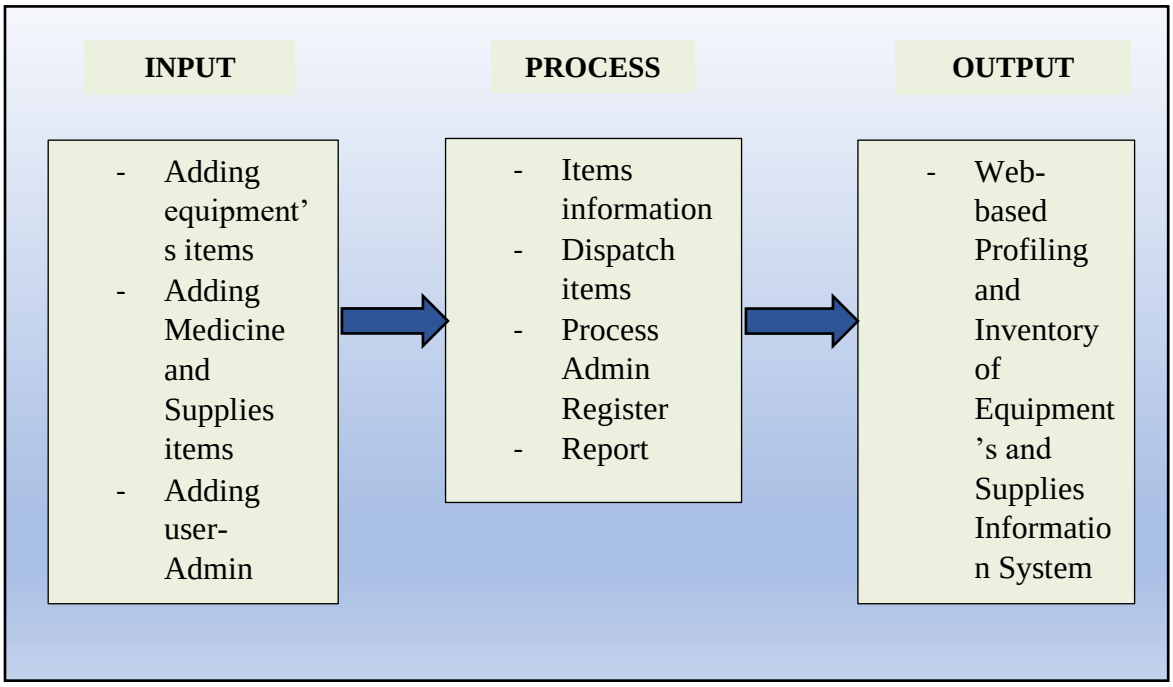


Figure 14. The IPO System Process

Development and Testing

Software Development

To assess the success of the system. The proponents have made steps to determine how the system should be observed and developed accurately. Depicted below is the systems System Development Life Cycle. The proponents have followed the waterfall

mode of SDLC because it was deemed effective in achieving a practical implementation of the said system.

The first step to implementing the Water Fall manner of the System Development Life Cycle was to assess, gather and analyze the requirements. Here, the proponents nurtured the thought of what needs to be accomplished. Furthermore, it comes after the System Design at this juncture. The system overall has grasped its realization in terms of what structure to follow and part to improve, and all other considerations as considered. Then after was the Implementation wherein the requirements and system design were applied to the implementation phase. After the Implementation was the testing of the system, wherein the weaknesses and bugs were addressed and catered to accordingly. The next step was to deploy the system based on the nurtured nature of the system. And for the system to succeed, it should be maintained that the possible bugs, errors, and failure that comes after should be addressed accordingly.

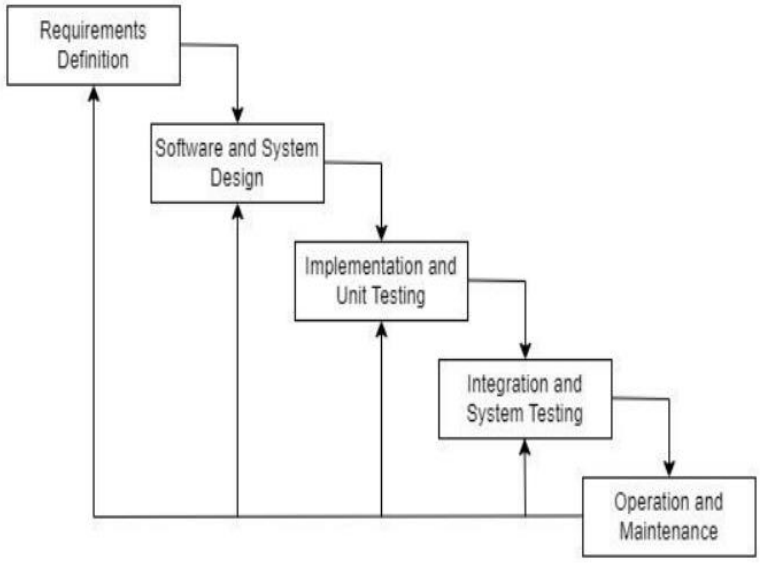


Figure 15. System Development Life Cycle

Hardware Specification

Table 12 represents the hardware specification of the system for it to achieve its purpose.

Hardware	Description/Specification
▪ Huawei Mate book D15	▪ Intel Core i5 processor. 8GB RAM, 256 SSD storage
▪ Internet connection	▪ Global Computer Network Provider

Software Specification

Shown in Table 13 are the software specifications for the development of WEB-BASED PROFILING AND INVENTORY OF EQUIPMENT AND SUPPLIES INFORMATION SYSTEM FOR SLSU MAIN CAMPUS CLINIC

Software	Description/Specification
▪ Window 11 Operating System	▪ Latest major release of Microsoft Windows Operating System.
▪ XAMPP Control Panel	▪ Free and open source cross-platform web server solution stack package.

▪ Visual Studio Code	▪ Lightweight but powerful source code editor.

Testing

The system must be evaluated on web browsers because it is a web-based platform. Following the development, the creation was tested. To make sure the system works as intended, unit testing was done. Various browsers, including Google Chrome, Brave, and Opera, were tested for compatibility with the web-based system on a Windows-based PC. The system's compatibility with other operating systems still needs to be evaluated.

Additionally, system testing was done using target customers as judges. The panel evaluation committee members also appraised the project. The developed system was improved with the help of testing feedback. The evaluation tool, which evaluated the system's functionality, efficiency, usability, maintenance, dependability, portability, security, and compatibility, was derived from ISO 25010.

Description of the System

The System is a web-based application developed using PHP Language and a mix of VS Code, bootstrap 5, Xampp 8.0.3, and CSS. The System has followed the waterfall SDLC for its development cycle, which concludes its front-end development. And on the other hand, the back end was also structured and refactored using PHP Programming language with its middleware for the front-end and back-end.

The System offers a feature for Admin to realize the inventory of medical supplies and equipment; this objective aims to produce and digitize the stock of medical supplies

and equipment of Southern Leyte State University. The Admin can monitor the inventory transactions, starting from the medical supply and equipment.

Implementation Plan

Figure 14 presents the implementation plan of the project. This covers the planning phase to deployment and evaluation of the project.

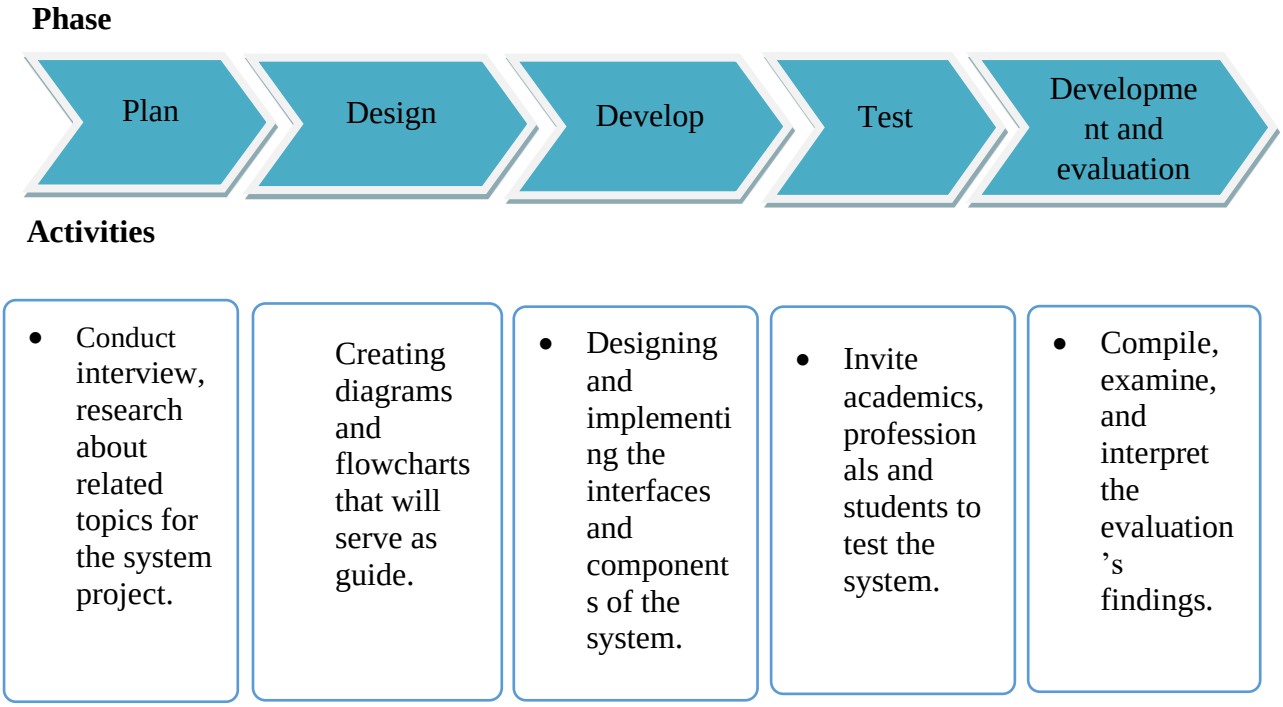


Figure 16. Implementation Plan

Implementation Result

Table 15 is the result of the evaluation using ISO 25010. Frequency, mean and modal interpretation are used in the treatment of data using the corresponding Likert Scale provided below.

Table 15. User Evaluation of Web-based Profiling and Inventory of Equipment and supplies information system.

Criteria	5	4	3	2	1	Mean	Interpretation
Functionality							
The system performs the tasks required.	1	3	1			4	Mostly Functional
The result is as expected.	1	3		1		3.8	Mostly Functional
The system interacts with another system.	1	3	1			3.6	Mostly Functional
The system prevents unauthorized access.	1	2	2			3.8	Mostly Functional
Reliability							

Most of the faults in the system have been eliminated over time.	1	2	1	1		3.6	Mostly Reliable
The system is capable of handling errors.		3	2			3.6	Mostly Reliable
The system notifies the user about wrong data entry.		3	1	1		3.4	Mostly Reliable
The software resumes working and restores lost data after a failure.		4	1			3	Reliable
Usability							
The user comprehends how to use the system easily.	3	1	1			4.4	Very Usable
The user learns to use the system easily.	3		2			4.2	Mostly Usable
The user utilizes the system without much effort.	2	1	2			4	Mostly Usable

The system's interface looks good.	2	3				4.4	Very Usable
Efficiency							
The system responds quickly to the user.	2	2	1			4.2	Mostly Efficient
The system's execution time is appropriate.	1	3	1			4	Mostly Efficient
The software utilizes resources efficiently.		3	1	1		3.4	Mostly Efficient
Maintainability							
The system faults can be easily diagnosed.		3	2			3.6	Mostly Agree
The system continues functioning when changes are made.		4	1			3.8	Mostly Agree
The software can be tested easily.	1	2	2			3.8	Mostly Agree
Portability							
The system can be moved to other environments.	3	2				4.6	Strongly Agree

The software can be installed easily. *(for administrator)*	3	1	1			4.4	Strongly Agree
The software can replace easily other software. *(for administrator)*	1	4				4.2	Mostly Agree
Security							
The software ensures confidentiality of data	1	3	1			4	Mostly Secure
The software prevents unauthorized access and modification to computer programs and/or data	1	3	1			4	Mostly Secure
The software requires authentication of users	2	1	2			4	Mostly Secure
A system log is maintained.	1	2	2			3.8	Mostly Secure
Compatibility							

The software performs its required functions efficiently while sharing a common environment and resources without negatively impacting any other product/s.	2	2		1		4	Mostly Compatible
The software allows or more systems, products, or components to exchange and use the information.	1	2	2			3.8	Mostly Compatible

Table 16. Overall Mean

Criteria	**Overall mean**	**Interpretation**
Functionality	3.95	Mostly functional
Reliability	3.6	Mostly reliable
Usability	4.25	Very usable
Efficiency	3.87	Mostly efficient
Maintainability	3.67	Mostly agree
Portability	4.33	Strongly agree

Security	3.95	Mostly secure
Compatibility	3.9	Mostly compatible
Total mean	3.94	

Table 16 shows the total mean of each category. As we can see in functionality, the overall mean is 3.95, which means the system functionality in performing the task required, results as expected, interacts with another system, then prevents unauthorized access is primarily functional. In reliability, the overall mean is 3.6, which means the system reliability in terms of Most of the faults in the system have been eliminated over time, capable of handling errors, notifying the user about wrong data entry, and The software resumes working, and restores lost data after a failure is mostly reliable. In Usability, the overall mean is 4.25, which means the system Usability in terms of the user comprehending how to use the system quickly, utilizing the system without much effort, and the system's interface looks good and is very usable. In efficiency, the overall mean is 3.87, which means the system efficiency in terms of the system responding quickly to the user, execution time is appropriate, and utilizing resources efficiently is Mostly efficient. In Maintainability, the overall mean is 3.67, which means the system Maintainability in terms of system faults can be easily diagnosed, continues functioning when changes are made, and the software can be tested easily, mostly agreeing to the user. In Portability, the overall mean is 4.33, which means the system's Portability in terms of the system can be moved to other environments, can be installed easily. (for administrator), and can replace quickly other software that has strongly agreed to the user. In system security, the overall mean is

3.95, which means the system security ensures the confidentiality of data, prevents unauthorized access and modification to computer programs and requires user authentication. The system log is maintained primarily secure. Then lastly, for compatibility, the overall mean is 3.9, which means the system compatibility in terms of software performs its required functions efficiently while sharing a typical environment and resources without negatively impacting any other product/s and allows two or more systems, products or components to exchange and use the information is mostly compatible.

CHAPTER V

RECOMMENDATIONS

The project's usefulness, a web-based information system for profiling and inventorying equipment and medicine supply, has been demonstrated concerning the profiling, inventorying, and monitoring of the equipment and medicine supply at the Southern Leyte State University Clinic. The system was able to give an efficient method of storing and monitoring data, which would aid the staff at the University Clinic and make inventorying less of a burden for them.

As it stands, with all these facts, the proponents of the system would like to recommend the following:

1. The system must undergo maintenance every six months to maintain and enhance its functionality as well as for the security of its databases.
2. Make the content more presentable and appealing to meet the requirements of the user or customer.
3. Further research is encouraged to extend the application of the system.

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Appendices

Relevant Source Code

Database Connection

```php
<?php
define('DB_SERVER', '127.0.0.1');
define('DB_USERNAME', 'root');
define('DB_PASSWORD', '');
define('DB_NAME', 'tbl_cap');


$link = mysqli_connect(DB_SERVER, DB_USERNAME, DB_PASSWORD, DB_NAME);

if($link === false){
    die("ERROR: Could not connect. " . mysqli_connect_error());
}
?>
```

Add / Insert

```php
  <?php
 $connect = mysqli_connect("localhost", "root", "", "tbl_cap");
 if(!empty($_POST))
 {
      $output = '';
      $message = '';
      $name = mysqli_real_escape_string($connect, $_POST["name"]);
      $arrival = mysqli_real_escape_string($connect, $_POST["arrival"]);
      $expiry = mysqli_real_escape_string($connect, $_POST["expiry"]);
      if(isset($_POST["stocks"])){
      $stocks = mysqli_real_escape_string($connect, $_POST["stocks"]);
      }
      $description = mysqli_real_escape_string($connect,
$_POST["description"]);


      if($_POST["employee_id"] != '')
      {
           $query = "
           UPDATE se_tbl
           SET name='$name',
           arrival='$arrival',
           expiry='$expiry',
           description = '$description'
```

```
            WHERE id='".$_POST["employee_id"]."'";
            $message = 'Data Updated';
      }
      else
      {
            $query = "
            INSERT INTO se_tbl(name, arrival, expiry, stocks, description,
stock_in)
            VALUES('$name', '$arrival', '$expiry', '$stocks',
'$description','$stocks')
            ";

            $message = 'Data Inserted';
      }
      if(mysqli_query($connect, $query)){

          if($_POST["employee_id"] == '')
          {
               $last_id = mysqli_insert_id($connect);

               $logs_query = "INSERT INTO stock_logs
(remarks,qty_in,item_id,date_arrival,from_qty,current_qty,expiration,left_
stock)
                              VALUES ('New Added
Item','$stocks','$last_id','$arrival','$stocks','$stocks','$expiry','$stoc
ks');
                              ";
               if(mysqli_query($connect, $logs_query)){
               echo "Data Updated, Reload page to refresh table
information";
               }
          }else{
               echo "Data Updated, Reload page to refresh table
information";
          }

     }
 }

 ?>
```

Edit / Update

```
<div id="update_data_Modal" class="modal fade">
      <div class="modal-dialog">
           <div class="modal-content">
                <div class="modal-header">
                     <button type="button" class="close" data-
dismiss="modal">&times;</button>
                     <h4 class="modal-title">Equipment Details</h4>
                </div>
                <div class="modal-body">
                     <form method="post" id="insert_form">
                          <label>Enter Item Name</label>
                          <input type="text" name="name" id="uname"
class="form-control" />
                          <br />
                          <label>Enter Date of Arrival</label>
                          <input type="date" name="arrival" id="uarrival"
class="form-control" />                          <br />
                          <label>Select Date of Expiry</label>
                          <input type="date" name="expiry" id="uexpiry"
class="form-control" />
                          <br />

                          <label>Enter Description</label>

                          <textarea name="description" id="udescription"
class="form-control"></textarea>

                          <br />
                          <input type="hidden" name="employee_id"
id="employee_id" />

                          <button type="submit" id="uinsert" class="btn
btn-primary" value="Add">Save Changes</button>

                     </form>
                </div>
                <div class="modal-footer">
                     <button type="button" class="btn btn-default" data-
dismiss="modal">Close</button>
                </div>
           </div>
      </div>
```

Archive

```php
<?php
require_once 'SEdb.php';

$id = $_REQUEST['id'];

$query ="INSERT INTO tbl_archive (id, name, arrival, expiry, stocks,
description) SELECT id, name, arrival, expiry, stocks, description FROM
se_tbl WHERE id='$id';";

if(mysqli_query($connect,$query)){
    $query = "DELETE FROM se_tbl WHERE id='$id';";
    if(mysqli_query($connect,$query)){

        header("location:SE.php");

    }
}
?>
```

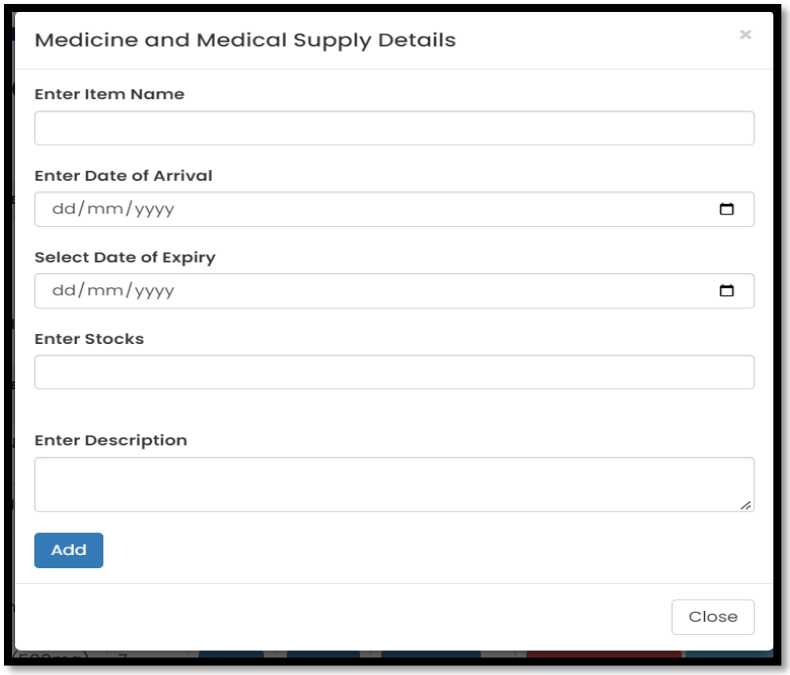
Evaluation Instrument

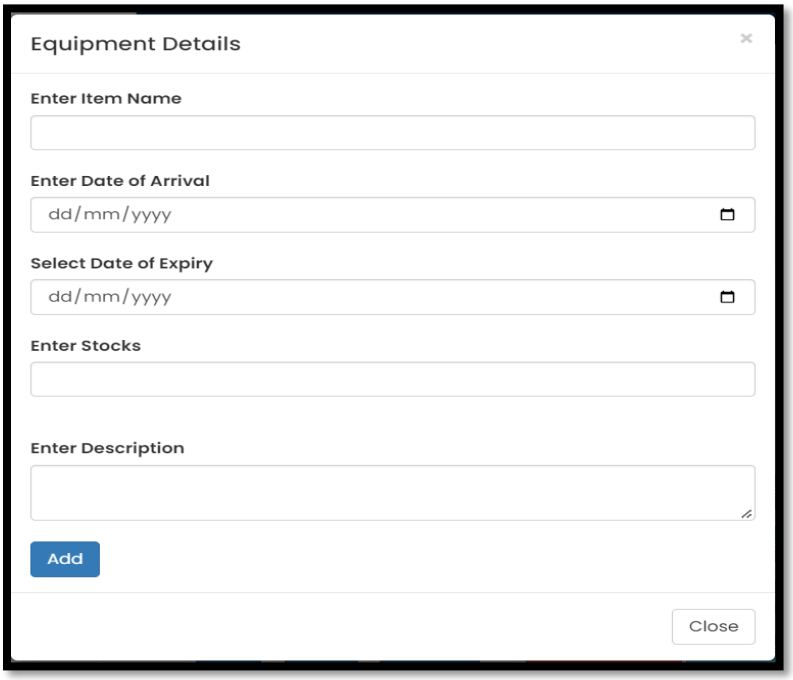
Criteria		Score				
Characteristic	*Sub Characteristic*	***1***	***2***	***3***	***4***	***5***
1. Functionality	The system performs the tasks required.					
	The result is as expected.					
	The system interacts with another system.					
	The system prevents unauthorized access.					
2. Reliability	Most of the faults in the system have been eliminated over time.					
	The system is capable of handling errors.					
	The system notifies the user about wrong data entry.					
	The software resumes working and restores lost data after a failure.					
3. Usability	The user comprehends how to use the system easily.					
	The user learns to use the system easily.					
	The user utilizes the system without much effort.					
	The system's interface looks good.					
4. Efficiency	The system responds quickly to the user.					
	The system's execution time is appropriate.					
	The software utilizes resources efficiently.					
5. Maintainability	The system faults can be easily diagnosed.					
	The system continues functioning when changes are made.					
	The software can be tested easily.					
6. Portability	The system can be moved to other environments.					
	The software can be installed easily. *(for administrator)*					
	The software can replace easily other software. *(for administrator)*					
7. Security	The software ensures confidentiality of data					
	The software prevents unauthorized access and modification to computer programs and/or data					
	The software requires authentication of users					
	A system log is maintained.					
8. Compatibility	The software performs its required functions efficiently while sharing a common environment and resources					

Criteria		Score				
Characteristic	*Sub Characteristic*	***1***	***2***	***3***	***4***	***5***
	without negatively impacting any other product/s.					
	The software allows two or more systems, products, or components to exchange and use the information.					

Sample Input/Output/Reports

Input





Output

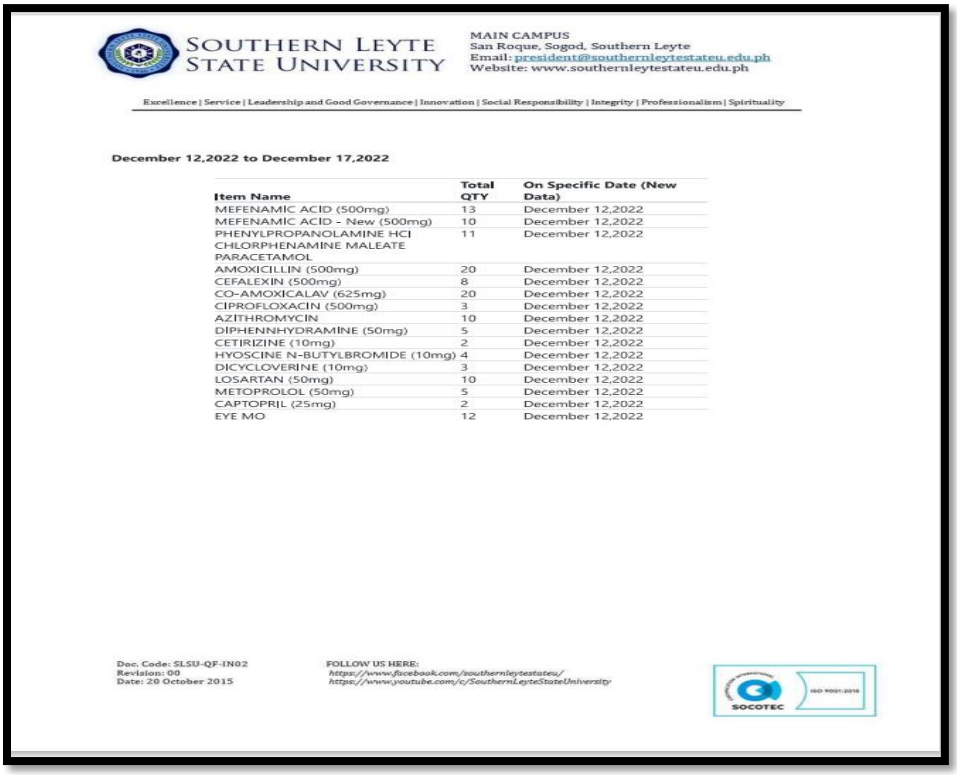
Information Table

Equipment Name	Stocks	Update	More Info	Send to Archive	Dispose	Add Stock
Oxygen Regulator	3	Edit	view	Archive	Dispose QTY Dispose Logs	+
Glucometer	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Weighing Scale	2	Edit	view	Archive	Dispose QTY Dispose Logs	+
Scaler Machine	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Autoclave	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Dry and Heat Sterilization	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Dental Chair/Unit	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Pulse Oximeter	2	Edit	view	Archive	Dispose QTY Dispose Logs	+
infrared Thermal Scanner	2	Edit	view	Archive	Dispose QTY Dispose Logs	+
Thermal Gun	1	Edit	view	Archive	Dispose QTY Dispose Logs	+
Blood Pressure (Digital)	2	Edit	view	Archive	Dispose QTY Dispose Logs	+

Information Table

Name of Medicines	Stocks	Update	More Info	Send to Archive	Dipose	Add Stock
ACETE DE MANZANILLA (100ml)	16	Edit	view	Archive	Dispose QTY Dispose Logs	+
CAPTOPRIL (25mg)	8	Edit	view	Archive	Dispose QTY Dispose Logs	+
CETIRIZINE (10mg)	10	Edit	view	Archive	Dispose QTY Dispose Logs	+
METOPROLOL (50mg)	15	Edit	view	Archive	Dispose QTY Dispose Logs	+
MEFENAMIC ACID (500mg)	7	Edit	view	Archive	Dispose QTY Dispose Logs	+

Report



SOUTHERN LEYTE STATE UNIVERSITY

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December 12,2022 to December 17,2022

Item Name	Total QTY	On Specific Date (New Data)
MEFENAMIC ACID (500mg)	13	December 12,2022
MEFENAMIC ACID - New (500mg)	10	December 12,2022
PHENYLPROPANOLAMINE HCl CHLORPHENAMINE MALEATE PARACETAMOL	11	December 12,2022
AMOXICILLIN (500mg)	20	December 12,2022
CEFALEXIN (500mg)	8	December 12,2022
CO-AMOXICALAV (625mg)	20	December 12,2022
CIPROFLOXACIN (500mg)	3	December 12,2022
AZITHROMYCIN	10	December 12,2022
DIPHENNHYDRAMINE (50mg)	5	December 12,2022
CETIRIZINE (10mg)	2	December 12,2022
HYOSCINE N-BUTYLBROMIDE (10mg)	4	December 12,2022
DICYCLOVERINE (10mg)	3	December 12,2022
LOSARTAN (50mg)	10	December 12,2022
METOPROLOL (50mg)	5	December 12,2022
CAPTOPRIL (25mg)	2	December 12,2022
EYE MO	12	December 12,2022

Doc. Code: SLSU-QF-IN02
Revision: 00
Date: 20 October 2015

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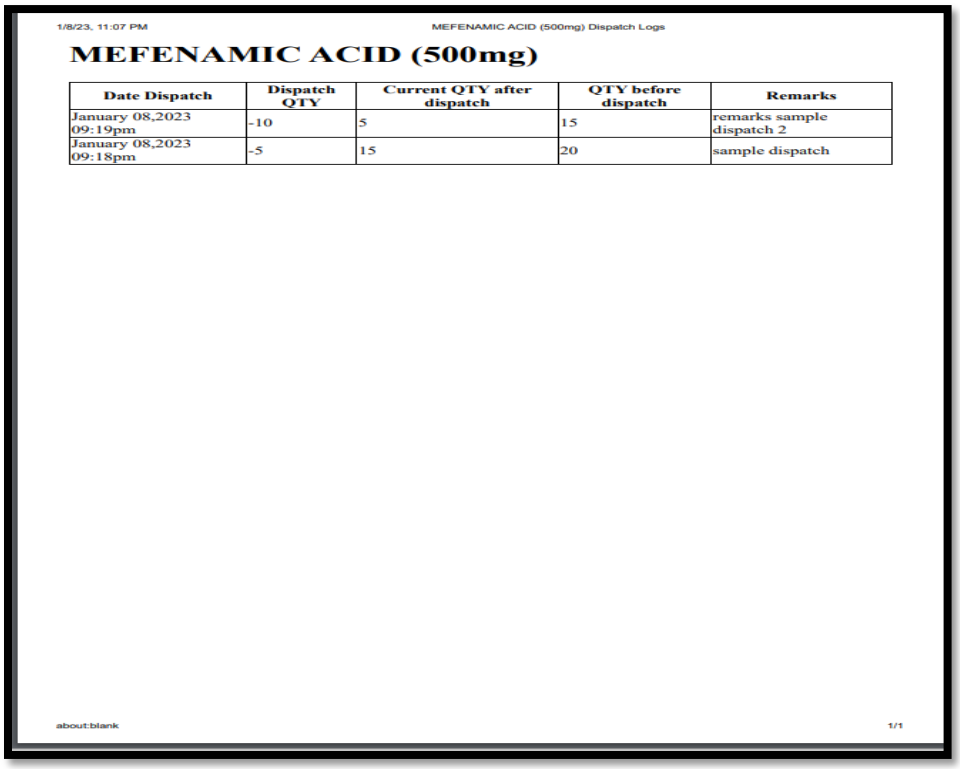
SOCOTEC



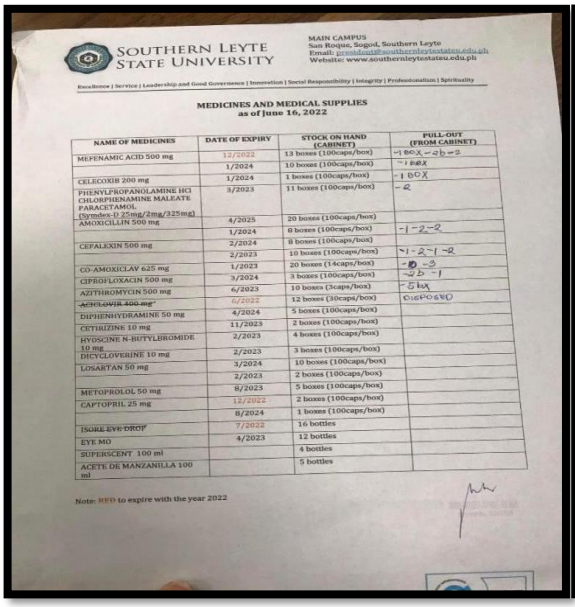
1/8/23, 11:07 PM MEFENAMIC ACID (500mg) Dispatch Logs

MEFENAMIC ACID (500mg)

Date Dispatch	Dispatch QTY	Current QTY after dispatch	QTY before dispatch	Remarks
January 08,2023 09:19pm	-10	5	15	remarks sample dispatch 2
January 08,2023 09:18pm	-5	15	20	sample dispatch

about:blank 1/1

Pictures Showcasing the Data Gatherings & Investigation



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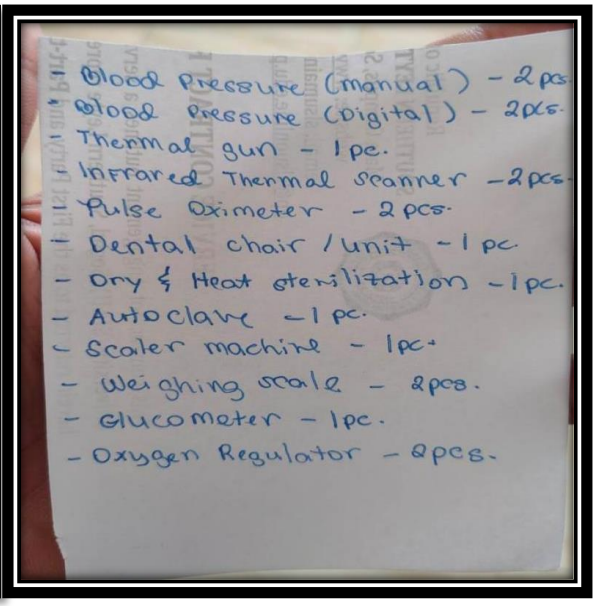
MEDICINES AND MEDICAL SUPPLIES
as of June 16, 2022

NAME OF MEDICINES	DATE OF EXPIRY	STOCK ON HAND (CABINET)	PULL-OUT (FROM CABINET)
MEFENAMIC ACID 500 mg	12/2022	13 boxes (100caps/box)	-1 BOX - 2b - 2
	1/2024	10 boxes (100caps/box)	-1 BOX
CELECOXIB 200 mg	1/2024	1 boxes (100caps/box)	-1 BOX
PHENYLPROPANOLAMINE HCl CHLORPHENAMINE MALEATE PARACETAMOL (Symdex-D 25mg/2mg/325mg)	3/2023	11 boxes (100caps/box)	-2
AMOXICILLIN 500 mg	4/2025	20 boxes (100caps/box)	
	1/2024	6 boxes (100caps/box)	-1-2-2
CEFALEXIN 500 mg	2/2024	8 boxes (100caps/box)	
	2/2023	10 boxes (100caps/box)	-1-2-1-2
CO-AMOXICLAV 625 mg	1/2023	20 boxes (14caps/box)	-2b -3
CIPROFLOXACIN 500 mg	3/2024	3 boxes (100caps/box)	-2b -1
AZITHROMYCIN 500 mg	6/2023	10 boxes (3caps/box)	-2 BX
~~ACICLOVIR 400 mg~~	6/2022	12 boxes (30caps/box)	DISPOSED
DIPHENHYDRAMINE 50 mg	4/2024	5 boxes (100caps/box)	
CETIRIZINE 10 mg	11/2023	2 boxes (100caps/box)	
HYOSCINE N-BUTYLBROMIDE 10 mg	2/2023	4 boxes (100caps/box)	
DICYCLOVERINE 10 mg	2/2023	3 boxes (100caps/box)	
LOSARTAN 50 mg	3/2024	10 boxes (100caps/box)	
	2/2023	2 boxes (100caps/box)	
METOPROLOL 50 mg	8/2023	5 boxes (100caps/box)	
CAPTOPRIL 25 mg	12/2022	2 boxes (100caps/box)	
	8/2024	1 boxes (100caps/box)	
~~ISORE EYE DROP~~	7/2022	16 bottles	
EYE MO	4/2023	12 bottles	
SUPERSCENT 100 ml		4 bottles	
ACEITE DE MANZANILLA 100 ml		5 bottles	

Note: RED to expire with the year 2022



- Blood Pressure (manual) - 2 pcs
- Blood Pressure (Digital) - 2pcs.
- Thermal gun - 1 pc.
- Infrared Thermal Scanner - 2 pcs.
- Pulse Oximeter - 2 pcs.
- Dental chair / unit - 1 pc.
- Dry & Heat sterilization - 1 pc.
- Autoclave - 1 pc.
- Scaler machine - 1 pc.
- Weighing scale - 2 pcs.
- Glucometer - 1 pc.
- Oxygen Regulator - 2 pcs.

To,
SLSU Main Campus Clinic,
Southern Leyte State University, Sogod Main Campus,
Sogod, Southern Leyte

Date: 8/22/2022
Subject: Requesting permission for obtaining medical equipment and supplies Information.

Respected Sir/Madam,

We are the Basalo's Group, and we are grateful for the opportunity to represent your esteemed institution, Southern Leyte State University, Sogod Main Campus, as students in the CCSIT Department.

We request your kind permission to obtain your medical supplies, equipment, and other stuff via this letter.

This will enable us to complete our intended capstone project, benefiting the researchers and the University Clinic.

We ensure that this will not affect your clinic's records, and we will not be neglecting the subject and syllabus that the University is covering. We request you kindly approve our request. We shall be highly obliged.

Thanking you,

Julius Victor B. Basalo
Project Manager

Mr. Jorton A. Tagud
Capstone Adviser

CURRICULUM VITAE

Julius Victor B. Basalo

Brgy. Pomponan, Baybay Leyte

Mobile No: 09273258604

E-mail address: juliusvictorb@gmail.com

PERSONAL INFORMATION:

Age	: 21 years old
Sex	: Male
Date of Birth	: July 11, 2001
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Merle B. Basalo
Father's Name	: Victor L. Basalo

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus
	Bachelor of Science in Information Technology Major in Programming
	San Roque, Sogod, Southern Leyte
	(2022-2023)

Secondary Education	Franciscan College of the Immaculate Conception Inc. Andres Bonifacio St, Zone 1, Baybay City, Leyte (2018-2019)
Primary Education	Pomponan Elementary School Brgy. Pomponan Baybay Leyte (2012-2013)

CURRICULUM VITAE

Ivan A. Noveda

Brgy. Kahupian Sogod Southern Leyte

Mobile No: 09062095820

E-mail address: **vanvanrosales23@gmail.com**

PERSONAL INFORMATION:

Age	: 22 years old
Sex	: Male
Date of Birth	: October 23, 2000
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Evangelina Noveda
Father's Name	: Ryan Noveda

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus Bachelor of Science in Information Technology Major in Programming San Roque, Sogod, Southern Leyte (2022-2023)

Secondary Education	Mahaplag National High School Brgy. San Isidro Mahaplag Leyte (2018-2019)
Primary Education	Palo 1 Central School Brgy. Cavite West Palo Leyte (2012-2013)

CURRICULUM VITAE

Jerihme S. Libres

Brgy. Kahupian Sogod Southern Leyte

Mobile No: 09267132576

E-mail address: **jerilaine14@gmail.com**

PERSONAL INFORMATION:

Age	: 21 years old
Sex	: Male
Date of Birth	: December 8, 2000
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Estrella Libres
Father's Name	: Danny Gisulga

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus
	Bachelor of Science in Information Technology Major in Programming
	San Roque, Sogod, Southern Leyte
	(2022-2023)

Secondary Education	Mahaplag National High School Brgy. San Isidro Mahaplag Leyte (2018-2019)
Primary Education	Kahupian elementary School Brgy. Kahupian sogod southern leyte (2012-2013)

CURRICULUM VITAE

Ana Marie G. Gaviola

Brgy. Nahaong, Libagon Southern Leyte

Mobile No: 09654118104

E-mail address: gaviolaannamarie17@gmail.com

PERSONAL INFORMATION:

Age	: 26 years old
Sex	: Female
Date of Birth	: August 17,1996
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Teresita Gaviola
Father's Name	: Tereso Gaviola

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus
	Bachelor of Science in Information Technology Major in Programming
	San Roque, Sogod, Southern Leyte
	(2022-2023)

Secondary Education	RMSM Nahaong National High School Nahaong, Libagon Southern Leyte (2018-2019)
Primary Education	Gakat Elementary School Gakat, Libagon Southern Leyte (2008-2009)

CURRICULUM VITAE

Mercy G. Ablanque

Brgy. Suba, Sogod Southern Leyte

Mobile No: 09677647166

E-mail address: **mercyablanque4@gmail.com**

PERSONAL INFORMATION:

Age	: 21 years old
Sex	: Female
Date of Birth	: October 30, 2000
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Floriana Ablanque
Father's Name	: Patricio Ablanque

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus
	Bachelor of Science in Information Technology Major in Networking
	San Roque, Sogod, Southern Leyte
	(2022-2023)

Secondary Education	Sogod National High School Zone1, Sogod, Southern Leyte (2018-2019)
Primary Education	Suba Elementary School Suba, Sogod Southern Leyte (2012-2013)

CURRICULUM VITAE

Cherry Lyn P. Balili

Brgy. Libertad Hilongos Leyte

Mobile No: 09352619870

E-mail address: **cherrypoy23@gmail.com**

PERSONAL INFORMATION:

Age	: 24 years old
Sex	: Female
Date of Birth	: August 21,1998
Civil Status	: Single
Citizenship	: Filipino
Religion	: Roman Catholic
Parents	
Mother's Name	: Cerdelina Balili
Father's Name	: Jose Mary Balili

EDUCATIONAL BACKGROUND :

Tertiary Education	Southern Leyte State University - Main Campus Bachelor of Science in Information Technology Major in Programming San Roque, Sogod, Southern Leyte (2022-2023)

Secondary Education	Sisters of Mary School- Girlstown, Inc. J.P. Rizal st. Talisay City, Cebu (2015-2016)
Primary Education	Libertad Elementary School Brgy. Libertad Hilongos Leyte (2011-2012)