Development of a POS with Payroll System for Carrera Motor Shop and Services

A CAPSTONE PROJECT PROPOSAL
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B.S. Information Technology

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CHAPTER 1

THE PROBLEM

1.1 Introduction

With the rapid advancement of technology today, businesses are beginning to use systems to have a better approach to business management. Since it will help businesses run efficiently and enhance flexibility in workplace and client relationships. A retail business requires administrative, management, and marketing skills. For the store to run smoothly, these competencies are essential from ensuring that there is enough merchandise on hand to put together monthly sales statistics (Conrad & Stubbs 2021).

Regardless of the size of the business, technology may provide numerous benefits that will enable it to grow revenue and produce the things that customers demand (Sandra 2018). POS and Payroll systems are two of the prevalent systems used by businesses today. POS will make purchasing and payment processing simple and efficient because it will lessen the workload of managing the sales of the business. This technological development provides businesses with new functionality and keeps all information and transactions in a centralized location (Harrison 2020). While payroll is the process of paying employees in a firm or business by employer. Payroll will help businesses in the calculation of the salary of employees. Additionally, it contains employee and wage information that employer keeps on file to track employees' performance.

Carrera Motorshop and Services is one of the many businesses that sell motorcycle parts and accessories in Cagayan de Oro City. The business started

on October 15, 2014, who is owned and managed by Rodel Maglangit. The Motor Shop provides a variety of services such as change oil, tune-ups, top overhauls, overhauls, wiring, and repainting as well as selling different types of motorcycle parts and accessories. The proprietor directly manages the shop, which employs two salespeople and five mechanics. The sales lady in the shop is the one who assists the owner with sales and customer service whereas mechanics are the ones who provide services, particularly in the repair of motorbike problems. For many years, the motor shop is using a manual record book for logging sales and inventory. Running the business without a system also poses challenges to the shop, particularly the monitoring of stocks, inventory, and sales, which leads to a lot of errors and conflicts in operating the motor shop. The firm also stores the business transaction records in the drawer which might result in the loss of reports and information from business transactions due to lack of storage to secure documents. Also, when the pandemic strikes, the shop loses a lot of its income, and some of its customers are not able to visit the store due to the implementation of the high level of quarantine in the city.

With the proposed study, the development of a POS with Payroll System will help the shop to manage, handle records and facilitates the delivery of quality service to customers, store all of its information in the system, and uses the internet to automate the manual method. The proposed study also intends to assist customers of Carrera Motor Shop in having a convenient way of searching and ordering items from the shop and arranging a schedule in repair service through the website.

Process Definition

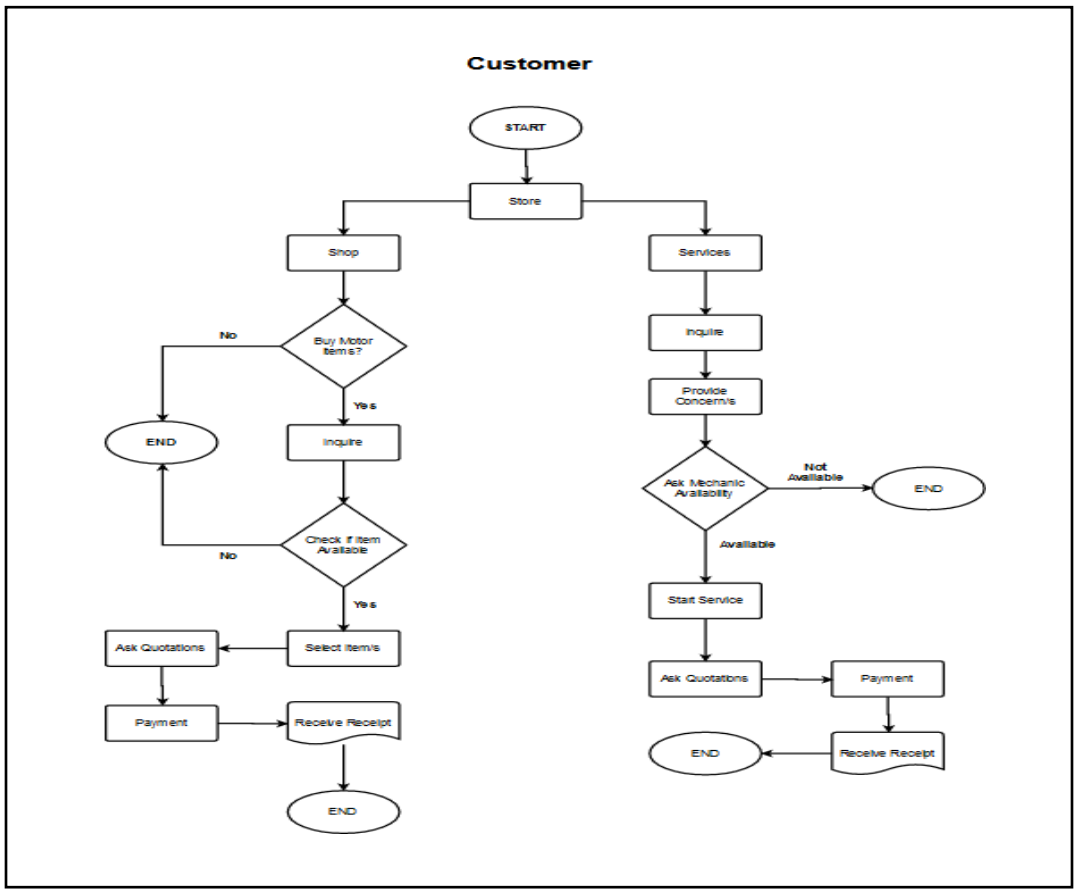

Figure 1.1 Manual Process Flow for Customer

Figure 1.1 The above shows the manual process flow of the customer's point of view for Carrera Motor Shop and Services. First, the customer will have to decide whether to buy motor items like accessories or parts of the motorcycle or the customer will inquire about the shop's services. If the customer is going to buy Motor Items, the customer will ask the admin if the motor item is available. The admin will then check if the item is available. If the item is available, the customer will select a preferred item and place it on the counter. After placing the selected

items on the counter, the customer will ask for the quotations. The customer will then give the payments after the quotations, and the customer will receive the manual receipt. When inquiring for the services there are multiple services offered which are repair, overhaul, change oil, tune-up, wiring, and repaint. If the customer has decided what services want to go for, the customer will need help from the mechanic. If the mechanic is not available, the customer will either wait for the turn or leave the shop. If the mechanic is available, it will start the service. The customer will then ask for the quotation, and pay it to the counter. The customer will then receive the manual receipt after the payment.

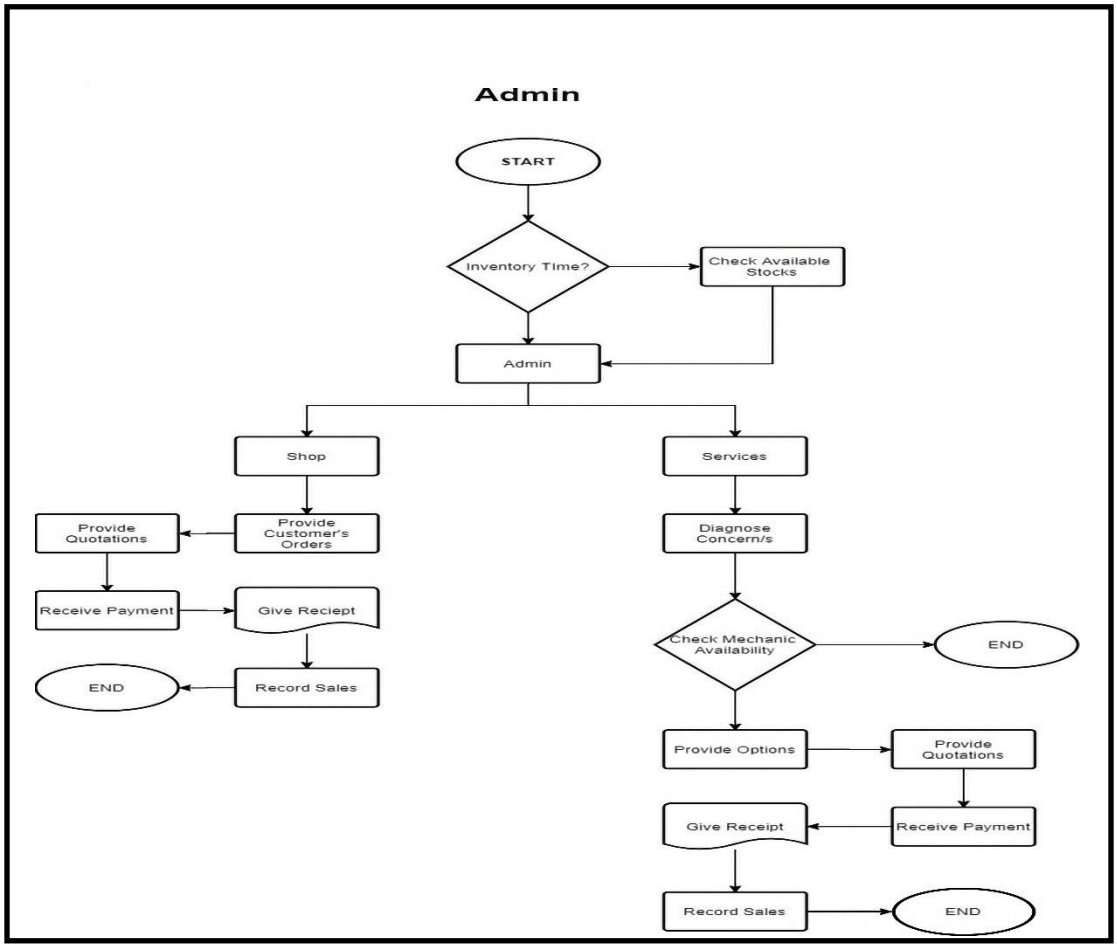

Figure 1.2 Manual Process Flow for Admin

Figure 1.2 Above shows from the admin's point of view. The admin will do the inventory when it's the scheduled time. if not, the admin can proceed to sell items and accommodate the customers. When accommodating the customers, the admin will offer the customer's needs based on the inquiries. Once, the customer has the item, the admin will give the quotations and will receive the payment. After that, the admin can give the receipt to the customers and will write down the sales. When the admin is accommodating the customers about the services, the admin would ask about the customer's concerns. After that, the admin would have to check if there are mechanics available, if not, either the customer will wait for the mechanic availability or leave the shop. If the mechanic is available, the service will begin based on the concerns of the customers. After the service, the admin will give the quotations to the customer and give the receipt after the payment. Lastly, the admin will then record the sales.

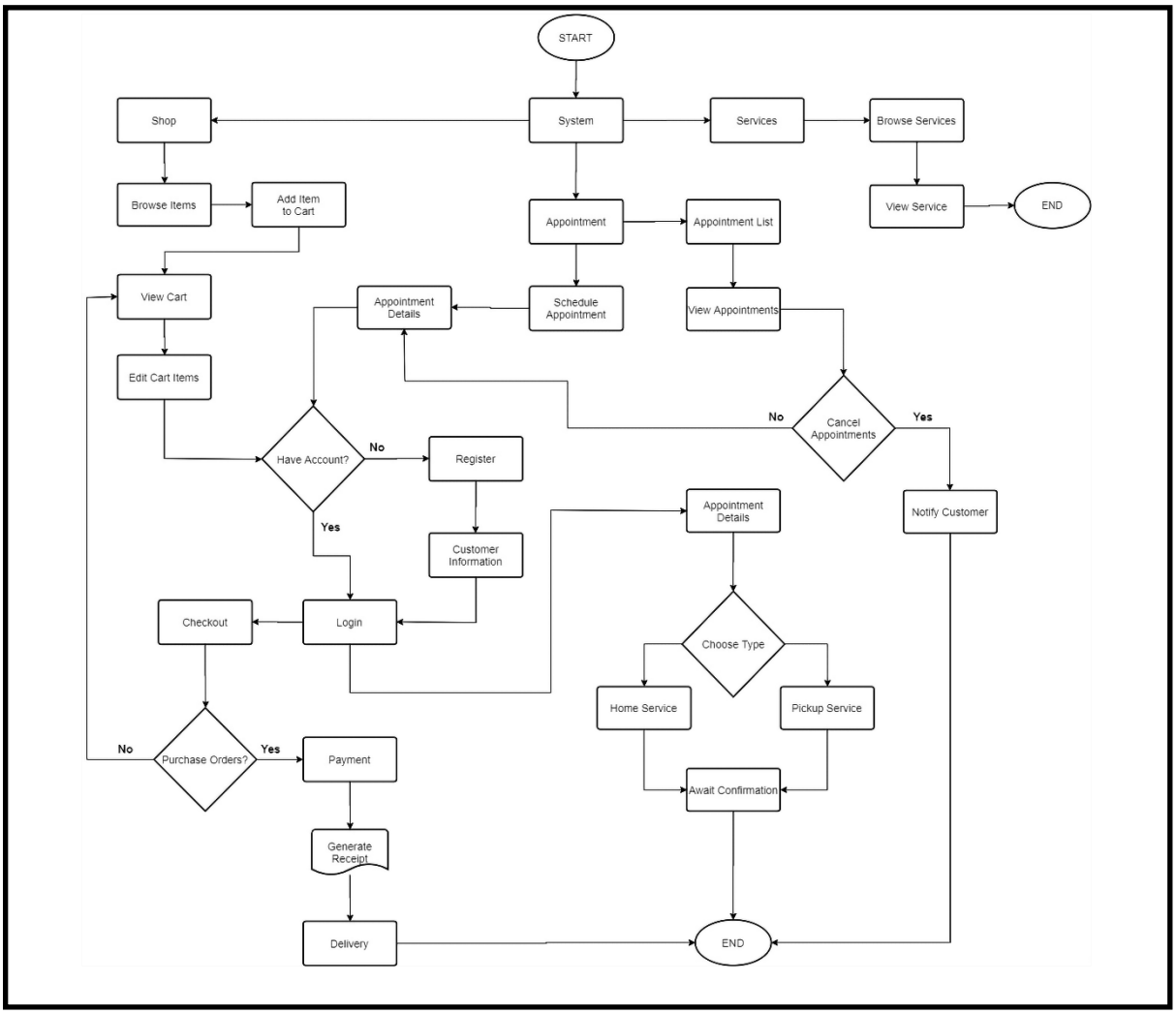

Figure 1.3 Proposed System Flow for Customer

Figure 1.3. The above shows the proposed process flow from the customer's point of view for Carrera Motor Shop and Services. First, the customer can browse and search for motorcycle items, which can be motorcycle parts, accessories, and anything that relates to motorcycles. Once the customer has viewed the item, the customer can add the item to the cart. The customer will then see the cart has been filled with the item and can add more items to the cart change

the quantity or remove the item completely from the cart. But before the customer goes to the checkout page; the system will redirect the customer to the sign-up page. If the customer does not have an account, the system will require the customer to register first and fill in the needed information. If the customer has an account already, the customer can sign in instead, and the system will redirect the customer back to the checkout page. On the checkout page, the customer can edit the information needed for the orders. Once done, customer can proceed to pay, and the system will generate a receipt for the customer. The system will finally notify the customer that the delivery is in progress.

From the appointment section, the customer can see a list of appointments and the appointment history. It also includes a section for scheduling an appointment. When scheduling an appointment, the customer will have to fill in the necessary details, but before the customer can proceed to schedule an appointment, the system will require the user to register an account first. Unless the customer is signed in, the customer can proceed to schedule appointments. When viewing the appointments, the customer can cancel the appointment if there are some changes, or else the customer can view previous appointments. Lastly, the customer can browse the services offered. It includes useful information that advises customers about motorcycles maintenance.

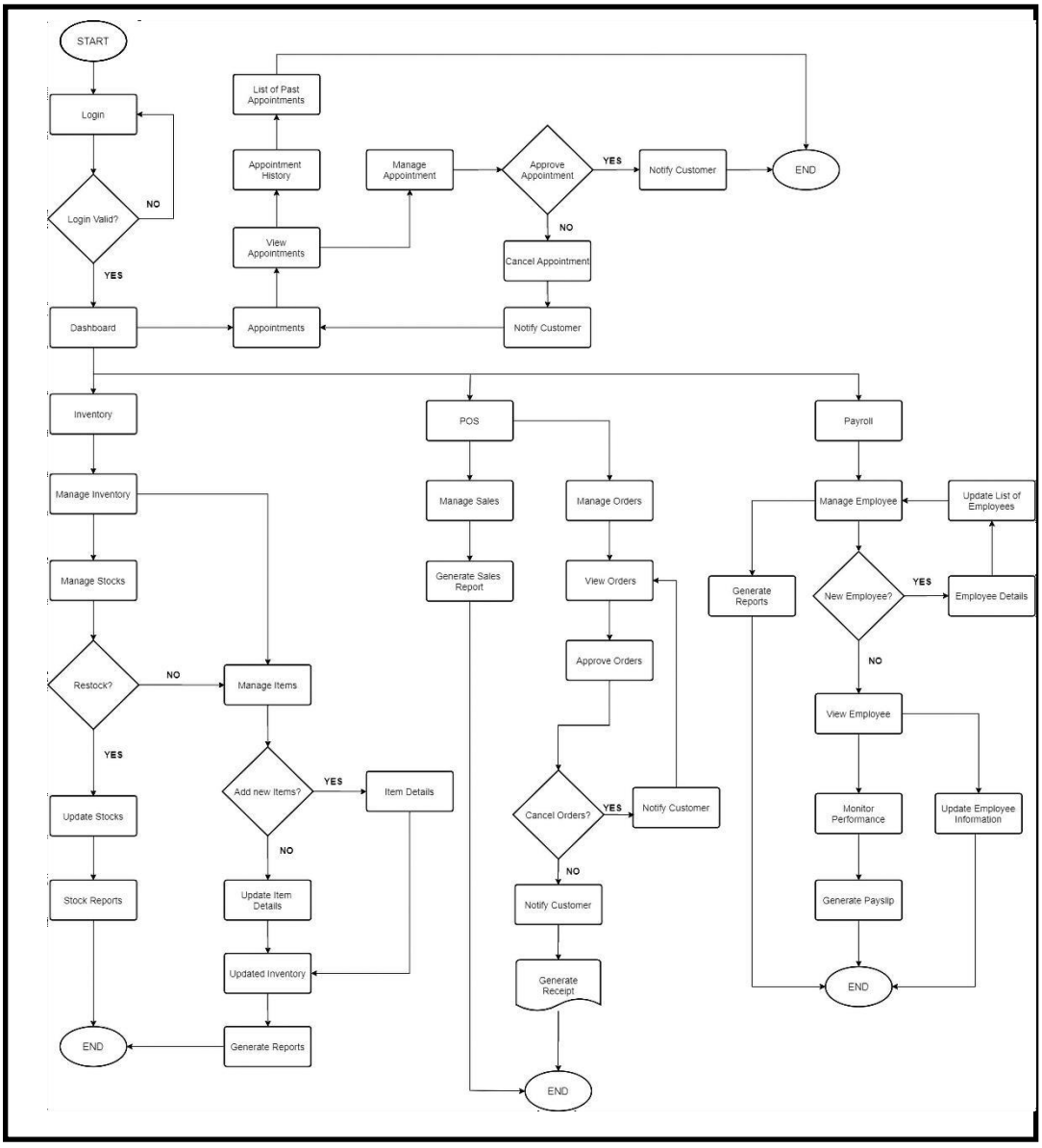

Figure 1.4. Proposed System Flow for Admin

Figure 1.4 The above figure shows the proposed process flow from the admin's point of view for Carrera Motor Shop and Services. The flow starts with the admin signing in the system. The system will verify the admin's login credentials. If successful, the admin will have access to the dashboard of the system. Else the system will warn the admin that the login credentials are incorrect.

The dashboard has four central uses, which is Appointment, Inventory, POS, and Payroll. In the appointment section, the admin can view the list of scheduled appointments. When the admin inspected one appointment, the admin can approve or cancel the appointments scheduled by the customers. The system will then notify the customers if the scheduled appointment has been approved or not. Next, in the Inventory section, the admin can manage the items in the inventory. The admin can manage the stocks and determine the need to restock on a particular item. If the admin does not have any problems with the stocks, the admin can instead manage each item's details. The admin can add a new item to the inventory or update the existing item. If the admin needs to generate reports, there are two reports that the admin can generate. First is the stocks reports and second is the overall reports of the inventory.

In the POS section, the admin can either manage sales or the customer's orders. When handling the sales, a brief overview of the current sales will display. The admin can monitor the sales anytime when needed. Next, the admin can manage the customers' orders, where the admin can approve each order. Once approved, there is a particular scenario where the admin must cancel the customer's orders. If not, the system will generate the receipt which contains the order information of the customers. The last section is the payroll, where the admin can manage the employees' information and the employee's performances. When handling the employees, the admin can add new employee information or update. Each employee has an overview of the performances in which the admin can monitor from time to time. The admin can also generate the reports based on the

Employees. Finally, the admin can generate a payslip from each employee, which the system calculates based on the performances and the sales of the shop.

1.1 Conceptual Framework

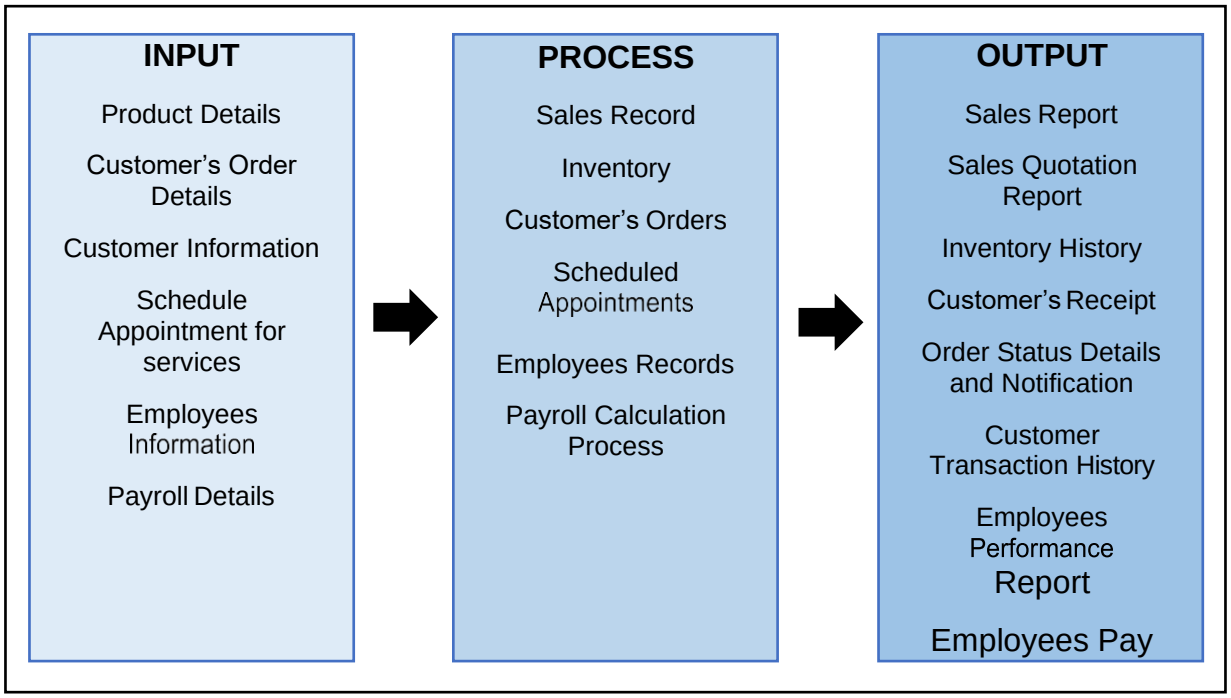

Figure 1.5 Input-Process-Output (IOP) Model of Development of a Point of Sale with Payroll System for Carrera Motor Shop and Services.

Figure 1.5 Above shows the conceptual framework of the system that will serve as a guide for the researcher's in developing a POS with Payroll System for Carrera Motor Shop and Services. A brief overview of the input-process-output (IPO) model will be elaborated on in the next paragraph.

From the customer's point of view, before using the system, the customer will register an account for a secured transaction. Customers have the option to schedule an appointment for the services, which can be either home service or schedule pick up. Moreover, during the ordering transaction, the customer can edit

information about the preferred address and payment options. Lastly, the customer also has the option to edit or update profile information.

Next, from the administrator's point of view, the admin can manage inventory by adding new products, restocking products, and checking the history of past inventory records. Besides that, the admin can manage the sales by generating sales reports and sales quotations. The admin can manage the customer's order to approve and send the status of the customer's order. Moreover, the admin will get notified based on the orders of the customer. Then, with regards to the services, the admin can manage the customer's scheduled appointment based on the customer's preferred option. Lastly, the admin can track the buyer's transaction history either by ordering products or services.

When handling employees, the admin can manage employees' information. The admin can track and monitor employee's performances and attendance. Moreover, the admin can generate the employees' performance records. The admin can also manage the employees' payroll and make the system do the calculations of salary.

1.2 Statement of the Problem

In reference to the problem of operating the business without a system presents obstacles to the shop, particularly in the area of manually recording the sales and inventory, and compensating the employees, which results in a number of errors and conflicts in the operation of the motor shop. First is tracking down the sales, which can be difficult due to a large number of recording books and the

necessity to manually search for the required report, which might take some time. There is also no backup of the records and secure storage in the event of an emergency such as a fire outbreak, misplaced papers, or wet documents that might lead to loss of information and reports from business transactions. Also, poor monitoring of inventory and stocks availability since the motor shop has a large number of motorcycle parts and accessories that must be managed, if the shop is not able to identify stocks and determine whether or not available, it can result in missed sales and lost customers. Lastly, poor employee records management including tracking and calculation of salaries that may result in human error and miscalculation since the owner only recalling which employees have work on a specific week's basis.

1.3 Objectives of the Study

1.3.1 General Objectives

The proposed study aims to develop a POS with Payroll System for Carrera Motor Shop and Services to improve the manual process of managing inventory, business sales, and other associated operations, such as an online website where customers can buy motorcycle accessories and avail online services. Lastly to create a payroll system to manage employee’s salaries in a more efficient and timely manner.

1.3.2 Specific Objectives

The system specifically aims:

- To gather the necessary data and information for the creation of a POS and Payroll System for Carrera Motor Shop and Services
- To analyze and define the functionality and system requirements for the development of POS and Payroll System for Carrera Motor Shop and Services
- To design a system that would allow:
    1. The Customer to order motorcycle parts, accessories and schedule motorcycle repair services online.
    2. The Admin to add and update employee details, monitor stocks, sales, and inventory.
    3. The System calculates weekly payroll and summarizes the employee's deducted contributions.
    4. The System generates sales reports, employee's payslips, update inventory and products.
- To develop a POS and Payroll System for Carrera Motor Shop and Services based on the requirements design.
- To test the effectiveness of POS and Payroll System for Carrera Motor Shop and Services System.
- To evaluate the functionality of POS and Payroll System for Carrera Motor Shop and Services System

- To create a deployment plan for the Developing a POS and Payroll System for Carrera Motor Shop and Services

1.4 Significance of the Study

The proposed study aims to help the motor shop minimize the workloads by having a centralized database that would speed up the process of managing employee's salaries and business transactions. It will help the business to easily monitor the products, inventory, and stock status that the traditional process requires the firm to manually assess regularly which leads to a lot of manual counting and paperwork.

The proposed payroll system is expected to lessen the amount of time and effort to manage and update employee's records, pay rates, and salary deduction. Through the online website, the customers will be able to purchase motor shop accessories and schedule repair services online.

To the researchers, the study will provide a chance to examine the skills and expertise in system development, design, and the potential to deliver a quality system that the business can take advantage of for its daily workflow.

1.5 Scope and Limitation

The proposed study is a web-based Point of Sale with a Payroll system that will focus on Carrera Motor Shop and Services. The POS system will help the business day-to-day activity by having an efficient way of managing and monitoring

inventory, sales, and business transactions with an e-commerce site contributing to the sales and online transactions.

The payroll process will store the employee's payslips by computing the salary and deductions of benefits. It will store the weekly salaries and the information of benefits like PAG-IBIG, SSS, and Phil health. It will also contain an online webpage for customers who wish to purchase products, as well as the ability to arrange a repair appointment through the services option on the website. The online webpage for customers is only limited to Cagayan de Oro and has the option to transact the payment for online purchase thru Bank Transfer, Gcash, and cash on delivery. Another limitation in the payroll system, more specifically not adding attendance and benefits information for mechanics since the customer who avails the repair services are the one who pays the mechanics.

1.6 Definition of Terms

For better knowledge of the terms used in the study, given terms are conceptually defined as follows:

Accessories – a thing that can modify the appearance of the motorcycle to make it attractive and can enhance the safety, performance, and comfort of the vehicle.

Carrera Motorshop and Services – a shop that sells accessories, parts and offers repair service for the motorcycle in Cagayan de Oro.

Change oil – It is the process of removing old oil from the motorcycle engine and replacing it with new clean oil.

Overhaul - a comprehensive service that disassembles the entire bike, cleans or replaces bearings, cleans the drivetrain, and replaces cables and housing.

Payroll - is the process of compensating employees for their efforts in working in the business.

POS – is the process of accepting payments and track sales of the business

Record Book - a book used by the motor shop to record important business transactions and activities such as sales inventory and stock information.

Top Overhaul – is the repair and replacement of the upper part of the engine of the motorcycle.

Tune-ups - performing extensive maintenance on the motorcycle to determine whether its components are in good functioning order or if they need to be replaced or cleaned.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

This section presents the various points of view, thoughts, and ideas drawn from related literature and studies from both foreign and local that are relevant and similar to the current research as well as the findings of the current study.

2.1 Foreign Studies

According to Hsiu-Fen Tsai., et. al (2019) Implementation of a Mobile Point-of-sale Cashier Management System aims to develop a real-time mobile cash register that can handle multiple online transactions at the same time is capable of processing transactions, particularly when Web technology and a back-end database are used to facilitate data exchange or third-party payment over the Internet. The system relies on online payments and has a web application where reports of transactions and sales reports can be seen. As a result, a POS system is no longer restricted to being placed or set on a front desk; rather, it transforms into a mobile cash register that accepts online payments, allowing consumers to transact with more convenience and speed.

According to Joko Santosa., et. al (2019) Design of Point of Sales (POS) Information System Based on Web and Quick Response (*QR*) Code. This study used QR codes as a replacement for barcodes in a point-of-sale system. It has benefits such as data storage user-friendliness. With a computerized system, the

process of transactions will shorten. When in conjunction with a point of sales system, QR codes can reduce the quantity of paper used, such as receipts. The study resulted in a web-based system using QR codes to process sale transactions in an easier and safer method.

According to Maria Ulfah Siregar., et al. (2019), “Design and Development of Web-Based Employee Payroll Information System Using Codeigniter Framework and Extreme Programming Method,” this study establishes a web-based employee payroll information system at the UP 45 Yogyarta. The payroll system's deployment produced better results than the manual computation of payrolls for employees that was recorded from the web-based employee payroll information system. The payroll process became more effective and efficient as payroll data is handled by the system with a high level of precision and the calculation process is reduced. The PHP programming language is used, along with the Codeigniter Framework and MySQL as the database.

Y Soegoto (2019) “Designing Payroll Information System: Case Study on CV. Bandung ID card”. This study aims to help the business processes of an organization that uses a pre-existing payroll system, but still requires a lot of manual processes that haven’t been integrated into the payroll system. An object-oriented system approach method and a prototype system development method were used to create an information system. The findings of this study include the design and construction of a desktop-based payroll information system that can more efficiently handle time and error that frequently occur, as well as processes

that are still performed manually but have been computerized, such as the present process, which uses RFID to record and input data attendance, which is already automated in finance and payroll.

According to Fariza Hanim Rusly., et. al (2019) “Global Perspective on Payroll System Patent and Research: A Bibliometric Performance”. It is important for a business to have a dependable payroll system, reduces errors, and enable the firm to adapt quickly to new circumstances. Employees' motivation and productivity would grow as a result of this, although in an indirect manner. In this study, the researcher examines the global viewpoint of payroll research and patent advancements over the last 50 years from a scientific and technological standpoint. The data was based on patents, documentation, the geographical distribution of publications, and citation analyses. The analysis concluded that payroll systems are worth investing in and have impacted the quality of work and life of the users.

2.2 Local Studies

According to Gabriel Miguel t. Dela Cruz., et. al (2019) “Inventory Management System with POS”. This study created an inventory management system to solve a client’s problem of the storing procedure and sale processes. The administrator will handle the reports of transactions and users while the cashier searches for items in the database. Any changes made to the database will update automatically to the rest of the users as the system will be real-time based. The system was proved to be quite useful to the client with real-time updates, a filtering system, and an all-in-one database that includes the inventory

and the transactions for the POS.

According to Analyn R. Mendoza., et. al (2019) “Point of sale system with inventory for Arm’s Food and Delicacies”. A POS system offers a quicker and efficient way to manage sales and inventory all in one. The system eliminates the time it takes to check for expired items, counting stock, and exchanging records when doing stock reports. This system can produce day-by-day to year-by-year reports if the client wishes to. This system has been useful to the client in such that generating reports were digitized and no longer requires amounts of paper for a single report and checking stock and counting stock, time was reduced with an easy-access database that displays all the needed information.

In relevance, Paul Joshua Bassig., et al (2018) “GB’s BURGER SALE AND INVENTORY MANAGEMENT SYSTEM” this study focused on a system for sales and inventory for Gb’s Burger. The system will handle sales reports and inventory of products that are purchased every day. It has two different systems, one for admins which are the owners, and the other for users which are the staff members. Admins will be able to access the menu of the store and generate sales reports. The users will have a cashiering system that will generate receipts and send the data to the admin’s database which the admin can view and will also update the inventory of the store. This has proven useful as Gb’s Burger has branches in different areas and has been able to collect all the reports of sales and such in a quick and orderly fashion.

“ABAP-Based Payroll System for Calajo Resto” according to Raphael Tadeo Cacas., et. al (2016), using technology can minimize risk, errors, enhance

the experience of the user(s). With an implementation of a payroll system the benefits include an up-to-date, reliable, and error-free system. As technology evolves, so too does the life of people who use technology in everyday life. As payroll systems will maintain records of employees, in/out data updating, generating payslips, and the distribution, advancing to a technological system will prove useful for the future of the business. As time goes on and updates are made to the system, it will become more efficient, have more features, and become more secure than before.

On a similar note, Von Kirby German., et al (2016) “Mobile of Point of Sale (POS) Application with Cloud Computing Inventory Management System for Micro and Small Enterprises” states that with the evolution of computing technologies becoming cheaper, businesses can invest into software and hardware without spending heavy amounts of money. The study aims to create a system for small and medium enterprises. This system uses cloud computing for inventory management with mobile devices in a POS system. The data synchronization allows for access to the database anywhere with a mobile device given that internet speed is not an issue. In the case of latency, a solution the study created was to synchronize data in batches where data can be transferred once a stable connection is made.

2.3 Relation of the Previous Researches to Current Work

The point-of-sale and payroll system has proven to be useful in businesses and enterprises. Such systems help the workflow of businesses to be efficient and

can reduce human errors. This includes reviewing stock, creating physical receipts, creating reports of stocks and sales, and calculation of transactions and salaries. This kind of system will help to maintain impartiality and transparency in the business.

The proposed system has similar goals to the previous studies, which include a filter system, different systems for admin and user, and a system that will provide efficiency and effectiveness for the business. However, there are differences between some studies and the proposed study which include, but are not limited to, cloud computing, Quick Response (QR) code, and mobile applications. Regardless, the proposed system will include an online store where customers will be able to purchase things from the store and it has also an appointment feature where customers can schedule for a home service repair or have the vehicle be picked up and fixed at the motor shop. The proposed system has also integrated a payroll system for the business to manage the employee's salaries.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

This chapter will contain the research and methodology that the proponents will be going to use in developing the POS with Payroll for Carrera Motor Shop and Services. This study will use the Agile model of the System Development Life Cycle. The SDLC consists of 6 phases: Requirements gathering and analysis, design, development, testing, evaluation, and deployment. (See Figure 3.1)

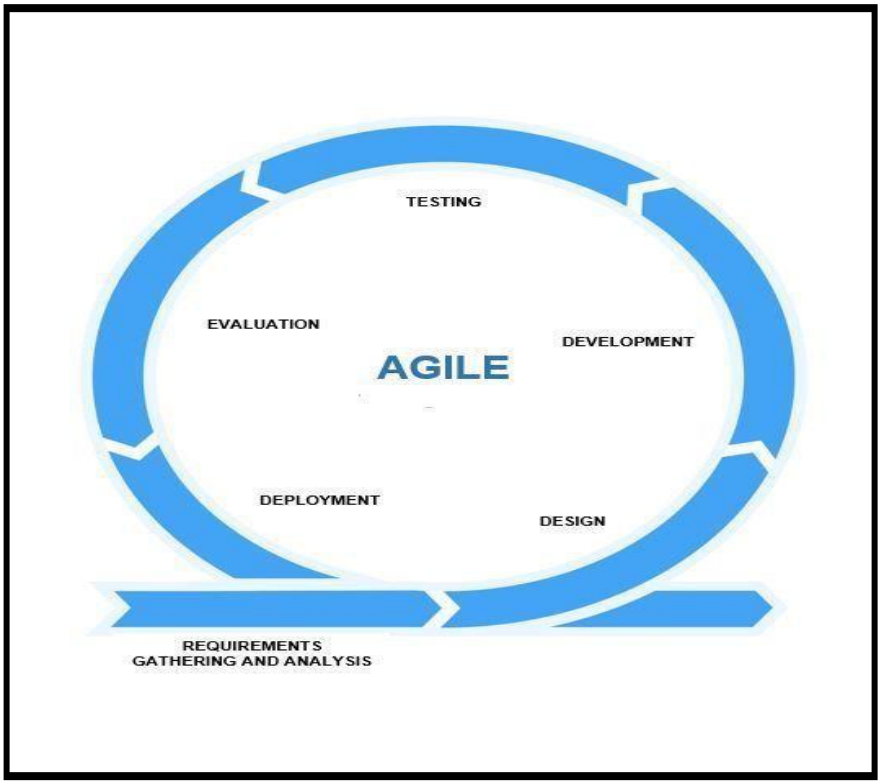

Figure 3.1 Agile Model of System of Development Life Cycle

3.1 Requirements Gathering and Analysis Phase

In this phase, the proponents will gather the information that is essential in the development of a POS with Payroll for Carrera Motor Shop and Services. The researchers will write a letter of intent (**See Appendix A**) to conduct an interview online with the owner who personally manages the Carrera Motor Shop and services with regards to the needed information in developing the proposed system as well as prepare ten (10) interview questions to identify the problems and the requirements needed for the proposed system **(See Appendix B**). Due to the pandemic, the interview with the client will be conducted online using social media. The researchers will analyze the needs and information acquired and will incorporate the findings into the development of the proposed system.

Research Ethics

The proponents of the POS with Payroll System for Carrera Motor Shop and Services will apply five (5) principles of ethics. (1) The proponents are responsible for ensuring the integrity and quality of the research. (2) Before participating in the research, participants will be approached for the informed consent and permission as well as properly address what the research is all about and why they are part of it. (3) With respect to the participants, the researcher will maintain the confidentiality and anonymity of the participants. Data collected from participants as well as information gathered for future users of the system will be kept confidential. (4) All participants will not force into participating in the research endeavor; rather, chose to do so voluntarily. (5) The researchers will avoid causing

harm or damage to the participants and will accept full responsibility and accountability for the research.

3.2 Design Phase

Based on the acquired data during the gathering and analysis phase, the proponents conceptualize the design needed as well as the features and system functionality for the development of the POS with Payroll System. In this phase, the proponents will use different diagrams such as the system process flow diagram, context level diagram, data flow diagram, use case diagram, logical and physical entity- relationship diagram, and Hi-Fi design that will serve as the basis for the development of the proposed system. The system process flow diagram will illustrate the sequential process of the proposed system by using a flow chart. Next, the context level diagram will illustrate the general information of the relationship between the external entities and the system (**See Figure 3.2**). Aside from the context level, the data flow diagram will also be utilized to show the detailed information of each major process and sub- process of the system. Use case diagram will also be used to identify the interactions of the users on each functionality of the proposed system. Additionally, the logical and physical entity-relationship diagram will be shown to determine the relationships of each entity needed in generating the data. Lastly, the Hi-Fi design will show the actual design with the features and functionalities of each user from the proposed system**.**

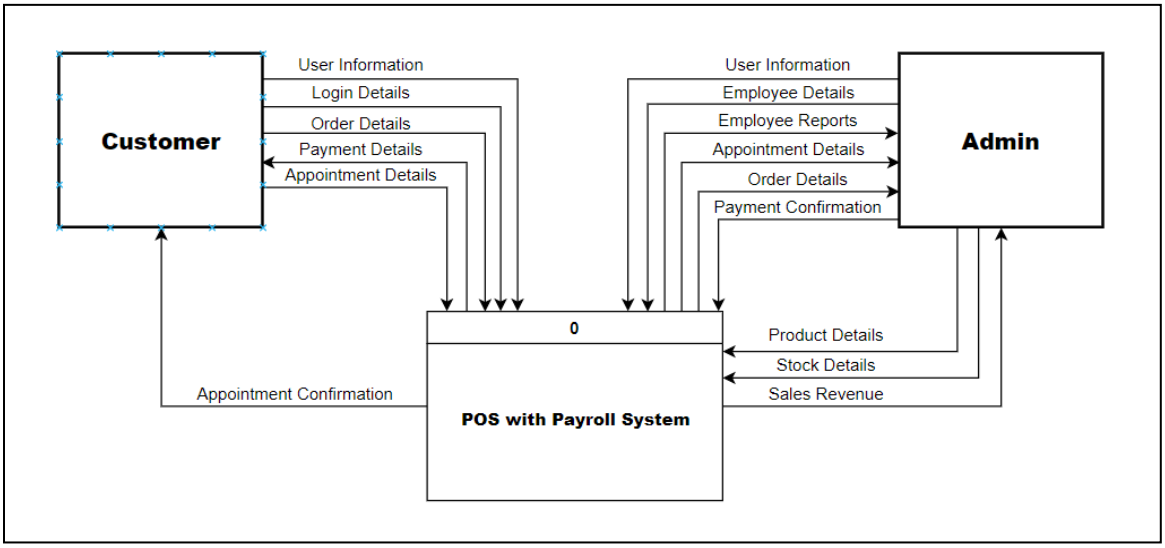

Figure 3.2 Context Level Diagram

3.3 Development Phase

In the development of the Online Website for the POS with Payroll System, the proponents will use a three-tier architecture design (**See Figure 3.3**). A three-tier architecture design includes a presentation tier, an application tier, and a database tier that will be used for each user module, such as the customer and the administrator. The programmer will use HTML as a building block for the interface in web development, Javascript for the animations and making the website structure interactive, and lastly Bootstrap Framework, which is a CSS framework to make the website visually appealing and designing more efficient. Moreover, PHP and the Laravel framework will be used to conduct system functions as the back-end structure of the website. Laravel Framework is a PHP framework that makes PHP development easier and also comes integrated with some API's, notable databases, and other features making it more convenient for the programmer to connect the system to the database and development much better.

In terms of the database, the programmer will use MySQL, an open-source relational database system that is free to use. MySQL will be used as the database for storing and manipulating data. And will serve as the most important aspect of structure in developing the proposed system.

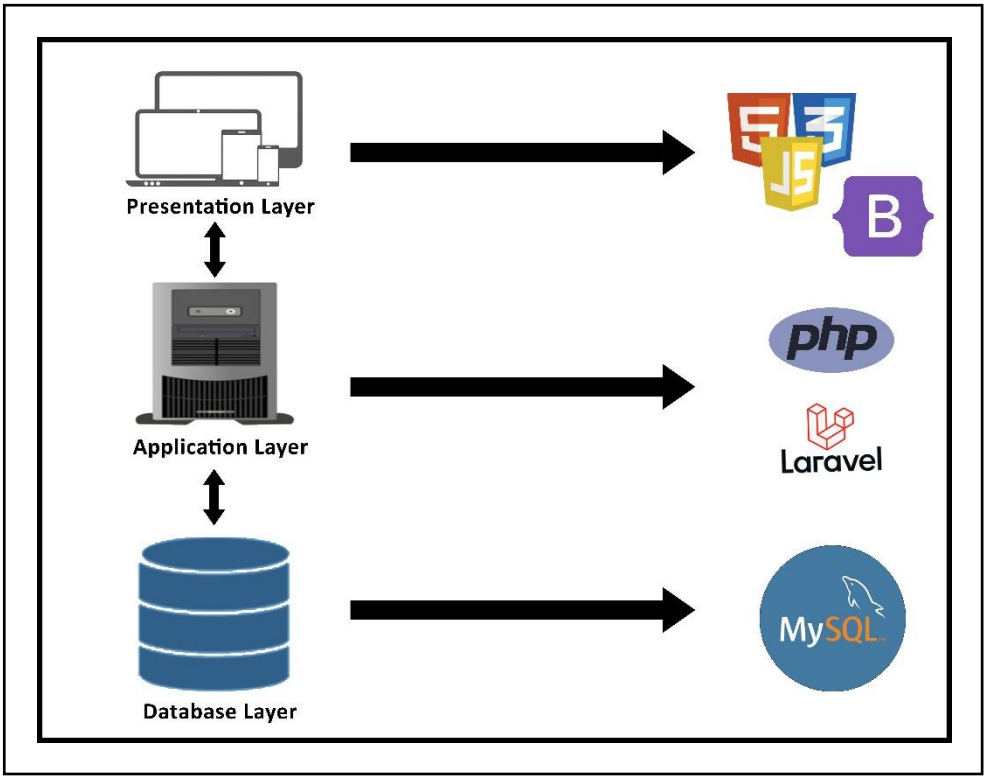

Figure 3.3 Three-tier Architecture Design

3.4 Testing Phase

In this phase, the researcher will conduct a test to ensure that the proposed system is working and identify the different errors and bugs that need to be corrected. Following that, the researchers will conduct integration testing in which to evaluate the overall functionality of the system. The researcher will also invite the client and a customer to test whether the system meets the expectations for deployment and use the Usability Study Plan (See Appendix C) that will serve as

a guide during the testing phase.

3.5 Evaluation Phase

After the testing phase, the researcher will conduct a usability test to evaluate and measure the system's functionality, overall performance, consistency, and how accurate the system is. The researcher will provide System Usability Scale (SUS) (See Appendix D) to the participant to evaluate and identify user expectations. The system will be open to necessary changes, adjustments, and enhancements that may be required after the evaluation. The responses to the questionnaire provided by the participant will be used to achieve the specific objectives to implement the system.

3.6 Deployment Phase

Following the completion of the evaluation phase, the next step is the deployment phase of the proposed system. The researchers will deploy the proposed system to Carrera Motor Shop and Services in Cagayan de Oro City to help the business in addressing issues related to day-to-day data inputs, data storage, and information retrieval, and other business operation. During this phase, the proponents will ask the owner of the business to participate in an orientation and a free trial of the system to urge the client to put it to use. The purpose of this orientation is to demonstrate the advantages of the system as well as how it operates successfully and consistently. After giving the client orientation, the researchers will inquire as to whether or not they are interested in using the system that has been implemented.

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APPENDIX A: LETTER OF INTENT

SOUTHERN PHILIPPINES COLLEGE
Julio Pacana Street, Licuan Cagayan de Oro City Tel. No:(088)856-2609

JULY 2021

Mr. and Mrs. Maglangit
Owner
Carrera Motor Shop and Services
Door #2 Ilaya Carmen, Cagayan de Oro City

Sir/Madam:

We are the fourth-year BS Information Technology students of Southern Philippines College. In partial fulfillment of the degree of Bachelor of Science in Information Technology, we are required to conduct a system study in any organizations or companies and consequently develop a computerized information system that arguments the efficiency and productivity relative to the business operation.

In view thereof, we humbly ask approval from your business to allow us to conduct a study particularly on implementing the **Development of a POS with Payroll System for Carrera Motor Shop and Services**. I will be working together with the other member of the group namely,

- Fayed A. Mauyag
- Yousef A. Abouel Seoud
- Dessa Mae L. Benigay

Furthermore, we would like to ask for your support and cooperation on the following procedures that will involve:

- Conduct of Interviews
- Administering of Questionnaires
- A request for sample reports and other related documents.

Rest assured that the data gathered will solely be used in the study and will be held confidential. We are looking for your continuous support for the success of our study. Thank you very much.

Respectfully yours,

Ronie Paiaron
Project Manager

Approved by:

VINCENT JANU RAZALO, MIT
Capstone Coordinator / Dean College of Computer Studies

APPENDIX B: QUESTIONNAIRE

SOUTHERN PHILIPPINES COLLEGE
Julio Pacana Street, Licuan Cagayan de Oro City
Tel. No:(088)856-2609

Name:_____ Date: _____

Questions:

1. What do you use to write sales information and inventory records?
2. What problems do you usually encounter in your manual process?
3. Where do you keep your documents or records?
4. What problems do you encounter when keeping and retrieving records?
5. What is your procedure in tracking the inventory?
6. What is the process of your repair services?
7. What problems do you encounter in repair services?
8. What is your process in managing your employee's records and performance?
9. What is your procedure for compensating the salesperson and mechanic?
10. How do you prepare and process an invoice?
11. How does the current manual process/procedure affect the entire business workflow?
12. What do you wish to improve in the current process/procedure in your business?

APPENDIX C: USABILITY STUDY PLAN

Context

The researchers of this study will evaluate the POS with Payroll for Carrera Motor Shop and Services. The proponents aim to conduct this evaluation to know the usability of the proposed system for the users. Particularly its features and functionality, if the users can easily manipulate the features and functionality of the proposed system. Moreover, the proponents will conduct this usability testing to know if there will be some problems or issues about the usability of the proposed system's design.

Goals

The goal of this usability study is for the researchers to seek out whether the selected participants for this study will be able to complete the task which will be given to them. Furthermore, this study seeks to answer the primary question:

- How usable is the POS with Payroll for Carrera Motor Shop and Services?

Profile of Target Participants

A total of five (5) participants will take part in this study; two for the customer, two for the salesperson, and one for the owner.

Tasks

Admin

- I can log in
- I can add new items to the inventory
- I can update or delete items in the inventory
- I can restock items in the inventory
- I can generate inventory reports
- I can generate sales quotations reports
- I can generate sales reports either weekly or monthly
- I can monitor sales
- I can add new employee information
- I can update employee information
- I can generate a payslip
- I can generate employee’s performance record
- I can monitor employee’s performance
- I can manage customer’s scheduled appointments
- I can cancel appointments
- I can view appointments history
- I can view orders history
- I can approve or disapprove orders
- I can view the list of orders

Customer

- I can create an account
- I can log in
- I can browse selections of items and services
- I can search or filter items

- I can specifically view each item and services
- I can add an item to the cart
- I can view my added items in the cart
- I can set the quantity of the item
- I can checkout
- I can select any payment method
- I can edit customer billing and contact details before order confirmation
- I can customize my profile
- I can cancel my order
- I can track my order status
- I can schedule an appointment
- I can cancel my appointment
- I can view the list of orders and appointments history

Materials

The materials that will be used for this study are as follows:

- Vacant room or laboratory, where the researcher can conduct the study.
- A laptop will be the device that the participants will use in accessing the system.
- Camera, paper, and pen for documentation purposes.
- Timer (via cellphone), will be used to monitor the time usage of the participants to perform the task.
- Timesheet, use to record the length of time it takes the participant to complete a task.

Methods

The study will be conducted in a single room environment. The following method will be observed during the testing:

1. Orientation/Signing of an informed consent form - 5 minutes
2. Testing - 30 minutes
3. System Usability Scale Answering - 10 minutes
4. Open-ended questions Answering - 15 minutes
5. Debriefing - 3 minutes

Questionnaires

After testing the system, the participants will answer the System Usability Scale. SUS is a general usability metric that measures the usability of a system. The System Usability Scale is already standard and cannot be changed.

Consent Form

You are being asked to participate in this study. I would like to inform you that your participation is voluntary. With that, you have an option to join or not to join. Before you decide, I would like to tell you what is the study all about and its accompanying risks.

- **What is the study about?**

  This study will identify the usability of the POS with Payroll for Carrera Motor Shop and Services. The proposed system will be evaluated to know if the features and functionality can easily manipulate by the users. The researchers want to know how efficient, effective, and usable the proposed system is.

- **How many people will take part in this study?**

  There will be 5 participants for this study; the customer, salesperson, and owner.

- **What will happen if you decide to participate in this study?**

  You will be asked to use the system and perform different tasks set by the researchers. Afterward, you will be asked to rate the software using the System Usability Scale. Lastly, there will be additional open-ended questions to know about your experience in using the system.

- **Will any part of this study hurt or have any risks?**

  The study will require you to use a laptop to access the system. If you are nearsighted or farsighted, it may cause a little discomfort to you. If you are claustrophobic, it may cause you discomfort because the study will be conducted inside a room.

- **How will confidentiality be observed in this study?**

Only the researchers of this study have access to the data collected from you. The data that will be gathered will be only used for this usability study. All personal data will be held confidential and will be kept anonymous in any research paper and presentation.

When you sign this document, you agree to participate in this study. If you decide to stop during the test, you are allowed to do so. If you have questions, or there is something you do not understand, or you are confused with, especially with the tasks, please ask the researchers.

Thank you so much.

Signature of Participant: _____

Printed Name of Participant: _____

Date: _____

Data collection instruments and metrics

The researchers of the system will use a cellphone video camera for documentation purposes. Spreadsheets will also be used for the analysis of data gathered during the experiment. The metrics that will be utilized in this study are the System Usability Scale (SUS). In System Usability Scale, the questions and responses are standardized. Through this, the researchers will no longer have to experience difficulty in analyzing the answers of each

participant. Moreover, the researchers will also use open-ended questions to understand more on the reactions and opinions of each participant.

Debriefing

After answering the questionnaire by the participant, the researchers will then explain and conduct debriefing to the participants. Here, the researchers will inform and remind the participants about the purpose of each task and the significance of conducting the study. Lastly, the researchers will thank each of the participants for cooperating in the usability testing.

Open-Ended Questions

1. What do you like most in the system?
2. What do you like least in the system?
3. Did you have any difficulty navigating throughout the system? If yes, why? What do you feel about each task? Did it make you happy? Sad? Confused?
4. Did you find it hard to achieve each task? Why or why not?
5. How can you manage to finish each task?
6. How important is the system for you as a guppy keeper?
7. What are your recommendations, suggestions, and/or comments for the system?

APPENDIX D: SYSTEM USABILITY SCALE

Strongly disagree — Strongly agree

2.I think that I would like to use this system frequently

3.I found the system unnecessarily complex

4.I thought the system was easy to use

5.I think that I would need the support of a technical person to be able to use this system

6.I found the various functions in this system were well-integrated

7.I thought there was too much inconsistency in this system

8.I would imagine that most people would learn to use this system very quickly

9.I found the system very cumbersome to use

10.I felt very confident using the system

11. I needed to learn a lot of things before I could get going with this system