AMA Computer University
OLONGAPO CAMPUS

POINT OF SALE with SALES MONITORING SYSTEM for Eduardo's Kitchenette

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to the Faculty of College of Computer Studies
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In Partial Fulfillment of the
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The Researchers

ABSTRACT

The study is focused mainly to provide the Eduardo's kitchenette a Point of Sale system with Sales Monitoring. Eduardo's Kitchenette uses a manual way for computation for the transactions and making sales reports. Manual method is prone to human errors that lead for miscalculation of payments and repetition of task. The manual way can't handle big transaction while doing some reports that the customer needed. To solve the problem, the researchers aimed to improve the transactions, provide sales report and organized relationship interactions with customers and potential customers by providing a Point of Sale management system which leads to faster and reliable transaction. The proposed system has its features to handle big transaction, providing a Sales report and managing the relationship interactions with customers. The researcher's studies made possible using the ideas and knowledge of the fellow researchers through the related studies and literature. The Researchers also used the system development life cycle to identify the phase in developing the proposed system. The researchers provide evaluation of the system to assess its functionality, reliability, efficiency and user-friendliness.

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Chapter 1

INTRODUCTION

In the world of business, there are two ways of managing the transaction process, the manual method and the computerized method. Using the technology, transactions made faster than the manual way. Point of sale system is an advanced technology that are now commonly used in many businesses. The business started as carenderia from an idea of Mr. Bryan Jay Soriano's Parents .Their food business grew, and they thought to expand. In year 2017 they formed the first branch in san marcelino and second branch in castillejos in 2018 for the purpose of serving food that zambaleňos and everyone love ,And now serving varieties of meals. The name of the business is eduardo's kitchenette located in Purok 4 Brgy.Sta maria Castillejos,Zambales.

Eduardo's kitchenette is using a manual method of computations and recordings of their transaction. Due to the manual method, payments process consumes so much time and often causes miscalculation. The proposed system handle transactions that can show the total sales of the payments to the customer. It also shows and monitor the transactions details.

Statement of the Problem

In an interview with the owner, Mr. Bryan Jay Soriano, according to him the issue concerning the use of manual operation, is time consuming especially in computing the transactions of payments, and making sales reports. Since data are written manually, transactions are prone to human errors and that may also slow the operation of the business.

Some specific problems were also observed:

1. Can't provide instant total payments of transaction to the customers.
2. Unable to produce sales report in a specific time.
3. Monitoring of sales.

Objective of the study

The researchers study the problem and aimed to create and develop a system that can help the Eduardo's Kitchenette business. Researchers provide a Point of Sale with Sales Monitoring for Eduardo's Kitchenette. A Proposed system will generate instant total of adding up order and income reports.

Specifically, it attempts to:

1. Provide the total payments while adding up orders.
2. Having a specific reports of sales in kitchenette.
3. Can handle big transactions.

Significance of the Study

The researchers developed a system that help the Eduardo's kitchenette in business. A Point of Sale system with Sales monitoring that handle big transactions providing instant total sales of payments. The customers will no longer need to wait the total payments for their orders.

This study will also beneficial to the following:

To the Beneficiary. It enhanced the process of the transactions of the kitchenette. The owner will no longer need to compute adding up of the orders because the proposed system can generate the total payments in just a few click. The proposed system designed to improve the processes and transactions of Eduardo's kitchenette.

To the Researchers. The proposed system enhanced the ideas of the researchers in developing a system. Researchers gained more knowledge in designing the UI of the system that will match to the Eduardo's kitchenette.

To the Future Researchers. The proposed study will serve as a reference or guide particularly a study related to a Point of sale system, and the propose system will become basis on writing of researches in the field of Information Technology.

Conceptual Framework

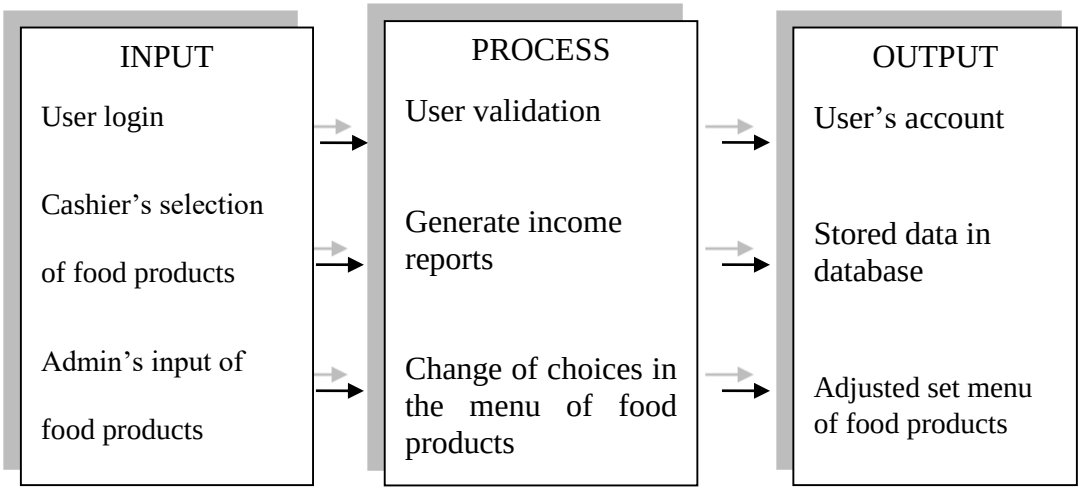

Figure 1*:* Conceptual Framework

Figure 1 shows the conceptual framework of the proposed system. User will input the username and password to access the system. When the user completely login the system will proceed to menu of the system. The user will need to input the products/food through the system. With the use of the system, the total amount of the transaction will be show instantly and provide record to database. The system can also generate sales and income report of the kitchenette.

Theoretical Framework

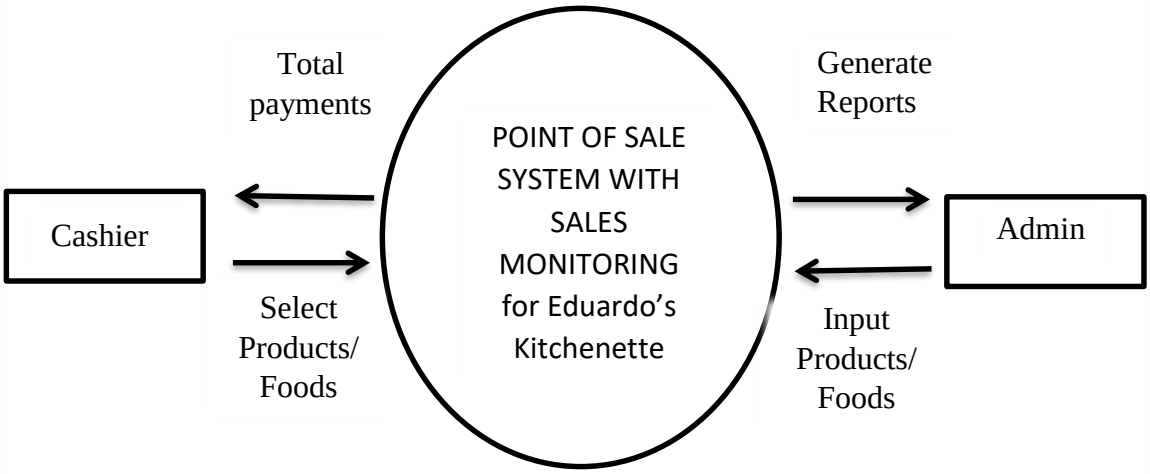

Figure 2: Theoretical Framework

Figure 2 shows the Theoretical Framework of the study. It describes the relationships between the Cashier and Admin in the proposed system. The customer will order products/food and the cashier select it in the proposed system for computation and records. Also, the proposed system will process the transaction to show total payment and generate reports.

Scope and Limitation

The scope of the proposed system is to provide and record sales report of the kitchenette. It also focused mainly in storing data in the database and secured all the information of the business.

The proposed system can calculate payments such as total amount of daily income. All of the encoded data are stored in database. The beneficiary has the right to delete, add, update, view and print specific report. The admin is also able to change the username and password for security purposes.

The certain limitation of the proposed is that it is not an online based system but a web-based type of system. Where the proposed system can be accessed through the use of web-browser by the cashier and the admin.

Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter shows the information about topics related to the study. It presents facts and ideas from literatures like books, journals, and electronic sources. It also provides brief discussion about related studies from local and foreign studies.

As Defined by Khut Kho (2013) Point of Sale (POS) is an electronic system designed to help business maintain and analyze inventory and transaction data on a continuous basis, but POS refers to the place where transaction occurs in exchange for goods and services.

According to Sandstrum (2014) Information obtained from POS improves marketing by helping salespersons make better judgments and ultimately practice smarter selling. Data reports highlight specific needs and eliminate guessing and biases that employees develop throughout the course of their work.

As stated by Casison (2013) further research shows that a POS system streamlines the process of entering inventory into a computer upon completion of sales, thereby allowing for expedited inventory management for companies still doing this counting manually.

According to Kentwatak, (2013) Computerized Sales and Inventory System is a product of human knowledge with a use of technology so why not use technologies an advantage and benefit ourselves. This system aims to lighten works and solve the problems involving strict and complex recording and calculations.

As Stated by Lori Fairbanks (2019) In 2019, mobility and the customer experience are hot topics in the point-of-sales market. The industry continues to move to cloud-based POS systems that run on tablets and allow merchants to bring the checkout to the customer, either on the sales floor of retail stores or tableside at restaurants, eliminating the frustration retail customers feel when waiting in line and the anxiety diners experience when their credit cards are out of sight.

According to Bob Frazier (2013) The selection of a Restaurant POS system is critical to the restaurant's operation and is a major investment that the restaurant's management and staff must live with for many years. The selection and purchase of a restaurant POS system that is perfect for your restaurant is a huge undertaking. The restaurant's management and staff will work with the restaurant POS system every day and will have to live with it for many years. The right restaurant POS system decision will pay for itself in a matter of months.

According to Ritesh Mehta (2018) For any retailer, anywhere in the world, a POS, or a Point of Sale System is a central component of the business. It’s the hub where everything merges. Moreover, it’s the place wherein a customer executes the payment for services or goods bought from a company. The retail industry these days is facing huge competition from new digital channels, such as mobile commerce, electronic commerce and social media. Customers nowadays are well informed, tech savvy and demands better and faster services. The new dynamics has imposed big challenges to the industry when it comes to customer service and operations and supply chain as well.

According to Evan Schuman (2018), POS system should be able to clock the employees in and out, and offer different levels of security depending on an employees' status.A cashier won't have access to the same back-office functions that manager has. POS systems are not just about taking payments; they also let you track your customers, and your employees. As you make sales, the system should be able to track what has been sold and how many items still remain. POS feature need to have the ability to provide analytics, to see what products sell.

According to Nathan Tienzo of EasyPOS Solutions Inc. (2016), various login profiles allow for certain levels of access to utilities, maintenance and reports. Serving staff can be restricted to only placing orders, cashier access to cash register, managers to reports and an administrator complete access to amend, add and delete items.

According to Scott Gerber from Business.com. (2017), If you're in retail, you're counting on your POS system for a smooth, reliable transaction. Your current system might not be cutting it, you might want one with extra features, or maybe you're shopping for your first-ever software. Whatever the case may be, there are endless options. You can now choose from cloud-based POS systems or stick with traditional hardware.

The proponents gathered useful information and ideas that are relevant to their developing system. Nathan Tienzo of EasyPOS Solutions Inc(2016), POS system should have monitored the log in and log out of the staff in time, can print receipt, computes the sales, automatically creates database for each customer, Different login profiles allowing

access to utilities, maintenance and reports. Easy access to cash register and managers to edit add and delete items.

Synthesis

As stated by Nathan Tienzo of EasyPOS Solutions Inc. (2016), the various login profiles allow for certain levels of access to utilities, maintenance and reports. The managers to reports and an administrator complete access to amend, add and delete items.

In reference to Ritesh Mehta (2018), a point of sale system is an essential component of businesses that it is need for any retailer, anywhere in the world.

As mentioned by Evan Schuman (2018) the system should be able to clock the employees and offer different levels of security depending on an employees' status in accordance to the manager.

As reference to Lori Fairbanks (2019) In 2019, mobility and the customer experience are hot topics in the point-of-sales market. This only proves that point of sale system is still relevant to this modern day of age for businesses.

In mention of Bob Frazier (2013) of his Restaurant POS 3-Step Purchase Process, he says there that the selection of a Restaurant POS system is critical to the restaurant's operation and is a major investment that the restaurant's management and staff must live with for many years. This type of restaurant point of sale system is related to the proposed system that is being created for the beneficiary.

In Scott Gerber (2017) Cha-Ching: 10 Point of Sale System that can do more than just sell article, it shows that there are other types of point of sale system that might be related to the proposed system. Scott Gerber is the founder of Young Entrepreneur Council (YEC), an invite-only organization comprised of the world's most successful young entrepreneurs. YEC members represent nearly every industry, generate billions of dollars in revenue each year and have created tens of thousands of jobs. Learn more at yec.co. Gerber is also a serial entrepreneur; regular TV commentator and author of the book Never Get a "Real" Job.

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

In this chapter, the researchers discussed the different methods of research for developing the proposed system in this chapter. Moreover, the researcher gathered information and conducted researches for the development of the proposed system.

Research Design

Researchers presented the methodology that was used in development and design of the proposed system. The proposed system is designed, developed, and evaluated to know if the proposed system meets the criteria of consistency and effectiveness. As stated by Richey, R.C. and Klein, J.D. “Developmental research describes in terms of the traditional stages of planning, conducting, and reporting a research project problem definition, literature reviews, and research procedures.”

The researchers used developmental research because it assess changes over an extended period of time by looking at the same groups of subjects for months or even years. Looking at academic and social development which may access to choose a small sample from each of the low and high income areas also, it employs the systematic method of designing, developing programs and processes that must meet the criteria of material consistency and effectiveness.

Researchers used the waterfall model. It shows the method of development of the system. The waterfall method involves Requirements Analysis, Design, System Development, Testing, Implementation, and Maintenance.

System Development Life Cycle

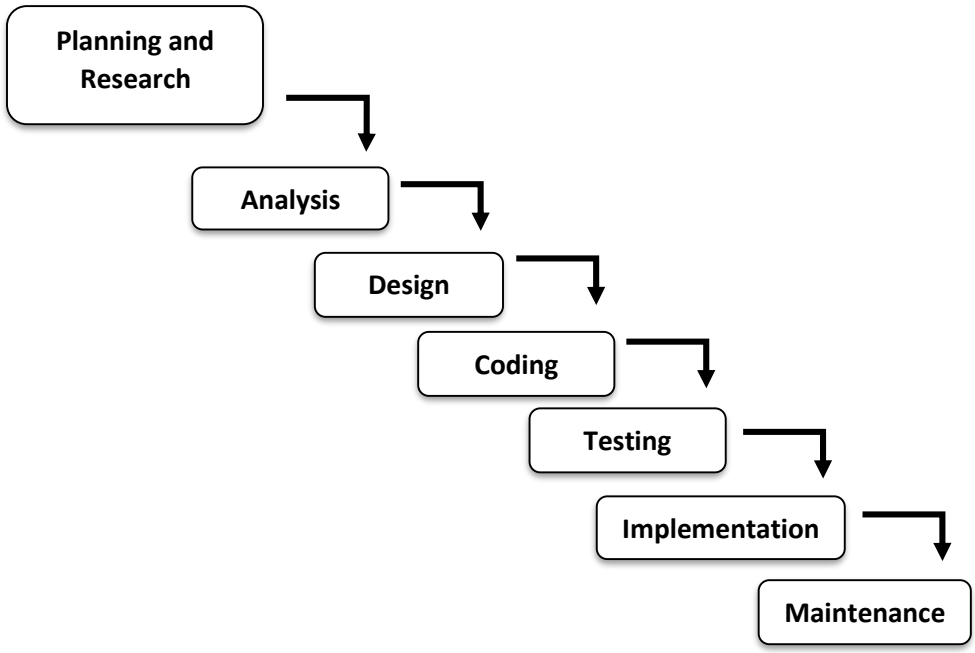

Figure 3: Waterfall Model

Figure 3 shows the model and technique used by the researchers as a method of research. As stated by Morse, P.A. "The waterfall model is a software development process emphasizes on logical progression of steps is taken throughout the software development life cycle. It can provide a number of benefits, particularly for larger projects and organizations that required tough deadlines."

The researcher used the waterfall model because the progress can be conclusively identified. It ensures minimum waste of time and effort; it also help reduces the risk of schedule slippage.

The following discuss the phases involved in the model:

1. **Planning and Research.** The researcher has decided to conduct and set interviews to the beneficiary. The discussion was used by the researchers to trace the problem and possible solutions and through those interviews the researchers were able to determine the main functions and purpose of the proposed system.

2. **Analysis** The researchers were able to come up with the procedure of the system and it was comprehensively documented. The Researchers gathered information for the requirements and specifications and to create the ideal design based on the gathered requirements.

3. **Design** In the design phase, the researchers gathered some ideas from their beneficiary to come up with a better output with regards to the outcome of the proposed system.

4. **Coding** In this phase, the system function was coded by the knowledge of the researchers to make the proposed system worked. Researchers used the Visual basic in developing the system where the function of the proposed system was build and coded.

5. **Testing** After coding, the proposed system has tested for the functionality by the researchers. The test focused on the finished application.

6. **Implementation** the researchers implemented of the proposed system Point of Sale. The system was installed in the beneficiary's computer by the developer's team.

7. **Maintenance** Once the system is implemented, maintenance is essential to keep premises and the work environment reliable. It is important that a planned maintenance programmer is in place and that all maintenance work is risk assessed before beginning the task.

Locale of the Study

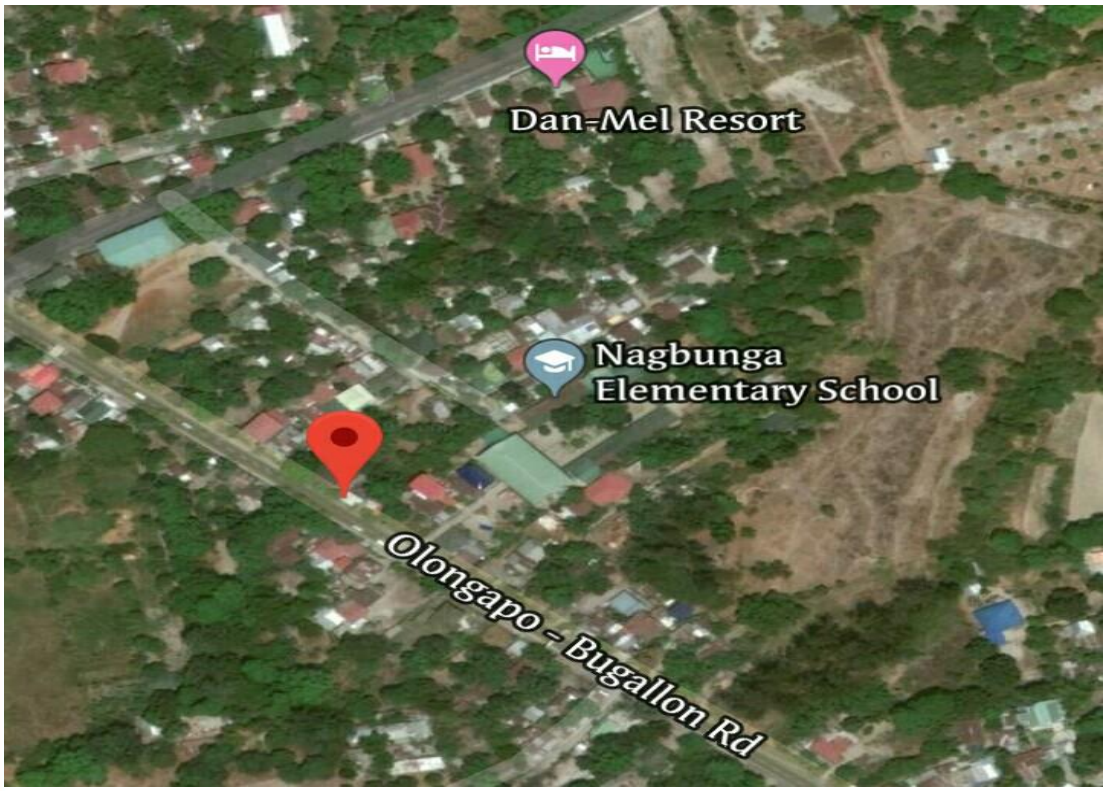

Figure 4: Vicinity Map

Figure 4 shows the location of the beneficiary the Eduardo's Kitchenette.The physical address of Eduardo's Kitchenette is Purok 4 Brgy.Sta Maria Castillejos, Zambales.

Data Gathering Procedure

The researchers gathered the data and information needed in the development of this study at Eduardo's Kitchenette.

Research Instruments

The researchers used different kinds of instruments to make this study possible. The following tools were used for gathering of data:

1. **Interview.** The researchers conducted an interview with Mr. Bryan Jay Soriano, the owner, to gather all the information needed for the development of
2. **Analysis.** The researchers were able to come up with an interview guide that aims to tackle how the transactions are done, how they manage and monitor their sales.
3. **Web Research.** The researchers used the internet in gathering supportive and related facts and latest information associated with the proposed system for the purpose of further understanding.
4. **Library Research.** The researchers used the library to further gather information relevant to their research. The library was able to provide information that helped the researchers to further enhance their documentation and provide information for their system development.

Gantt chart

ACTIVITY	February				March				April				May	
	1st wk.	2nd wk.	3rd wk.	4th wk.	1st wk.	2nd wk.	3rd wk.	4th wk.	1st wk.	2nd wk.	3rd wk.	4th wk.	1st wk.	2nd wk.
Planning and Research														
Analysis														
Design														
Coding														
Testing														
Implementation														
Maintenance														

Figure 5: Gantt chart

Figure 5 shows the progress made by the researchers during the development of the system. The researchers provide a planning and research to gathered data and ideas on the proposed system. The proposed system will also have some testing and maintenance to make the system reliable and secured.

Chapter 4

RESULTS AND DISCUSSIONS

This chapter explains the system requirements namely hardware and software development components. This system requirements are more detailed description of the user requirements. They may serve as the basis for the implementation of the system and should therefore be a complete and consistent specification of the whole system.

System Overview

The proposed system for Eduardo's Kitchenette is a point of sale system that can calculate the total of adding up orders in just a few click. The proposed system is also capable of generating reports.

Architectural Design

The architectural design of the proposed system is composed of its hardware and software components, and also the specifications required for the development of the proposed system.

Hardware Development Components

Table 1 shows the hardware development components of the proposed system. The hardware that is used to develop the proposed system.

Table 1: Hardware Development Components

Hardware Name	Specification
Memory	4GB
Processor	Intel core i3-4005U 1.7GHz
Power supply	500 watts 3x220V
Mouse & Keyboard	Generic/USB
Monitor	Generic PnP Monitor

Software Development Components

Table 2 shows the software development components of the proposed system. This are the software composed use in developing the proposed system.

Table 2: Software Development Components

Software Name	Developer/Manufacturer	Description
Microsoft Windows 10	Microsoft Corp.	Operating system of the computer. Allowed the researcher's pc to run.
Visual Basic	Microsoft Corp.	provide a graphical programming environment and a paint metaphor for developing user interfaces.
XAMPP Web Server	Apache Friends	A free and open source cross-platform web server solution stack package that allowed the researchers to run the proposed system into localhost.

Hardware Requirement Specifications

Table 3 shows the hardware requirement specifications needed to implement the proposed system to fully perform its specified task. The researchers required a Random Access Memory with at least 2GB capacity or higher, a hard disk with at least 250GB or higher, and receipt printer POS compatible.

Table 3: Hardware Requirement Specification

Hardware Name	Specification
Memory	4GB or higher of DDR2 or higher
Processor	Intel core i3-4005U 1.7GHz or higher
Power supply	Minimum of 500 watts 3x220V
Monitor	Generic PnP Monitor or higher
Mouse & Keyboard	Generic/USB

Software Requirement Specifications

Table 4 shows the software requirement needed to use for the proposed system. The operating system is for the main program of the computer that controls and operates the computer and Visual Basic to run the system.

Table 4: Software Requirement Specification

Software Name	**Description**
Microsoft Windows 7	At least windows 7 or higher
Visual Basic	At least version 2010 or higher .

Cost Benefit Analysis

Cost Reduction = Existing – Proposed

Benefits = Cost Reduction – Development Cost

Table 5 shows the result of cost benefit analysis between the existing and proposed system. It also shows the total cost reduction that the beneficiary can benefit once the system is implemented.

Table 5: Result of Cost Benefit Analysis

	Existing	**Proposed**	**Cost Reduction**
A. Materials	Php 17, 900.00	Php 6,610.00	Php 11, 290.00
B. Electricity	Php 128,556.00	Php 124, 032.00	Php 4, 512.00
C. Employee	Php 268, 920.00	Php 268, 920.00	Php 0.00
Total	Php 415, 208.00	Php 399, 406.00	Php 15, 802.00
Development cost			Php 10,000.00
Benefit			Php 5,802.00

Payback/Return on Investment (ROI)

Payback = Cumulative Benefits – Cumulative Cost

ROI = Cumulative Benefits / Cumulative Cost * 100

Table 6 shows the payback/return of investment of the beneficiary for implementing the proposed system.

Table 6: Payback/Return of Investment

	Cumulative Cost	**Cumulative Benefits**	**Payback**	**ROI**
	Php 10,000.00	Php 5,802.00	Php -4,198.00	58.2%
	Php 10,000.00	Php 11,604.00	Php 1,604.00	116.3%

Payback Period

The project will recover its initial investment in **1.57 years**

$$= \text{Last Year with negative cash flow} + \left(\frac{\text{Absolute value of NCF in that year}}{\text{Total Cash Flow in the following year}} \right)$$

$$= 1 + \left(\frac{₱\text{-}4{,}198.00}{₱1{,}604.00} \right)$$

$$= 1.57 \text{ years}$$

Figure 6: Payback Period

Figure 6 shows the payback period of the project. The return of investment (ROI) is on 1.57 years.

Chapter 5

CONCLUSION AND RECOMMENDATION

In this chapter, the researchers discuss the conclusion and recommendations regarding the Proposed System.

Conclusion

This chapter discuss the conclusion and recommendations about the study and proposed system. Based on the beneficiary specifications, the cost benefit analysis, the researchers concluded that the proposed system is beneficial to the kitchenette because it lessens the materials used in manual system like writing transactions in a record book. The admin will able to monitor the sales income and make changes to the proposed systems in terms of adding a menu of the kitchenette. The proposed system can generate instant total of adding up of orders.

Recommendations

The researchers recommend to the beneficiary to use at least the minimum required software and hardware specifications. To the future researchers, improve the client interface, add extra catches if vital relying upon the requirements/extra task or administrations offered by the business. Make the interface more user friendly. Explore and enhance the usefulness of the system. The beneficiary can also limit the people who would have access to the system for extra safety efforts so the intruders could not alter and destroy the system.