WEB-BASED POINT OF SALES WITH FORECASTING
ANALYTICS FOR JC TRADING

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SANTA MARIA, ILOCOS SUR

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FEBUARY 2023

Bachelor of Science in Information System

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Chapter 1

INTRODUCTION

Background of the Study

A point-of-sale system (POS) is a software-based business solution that is used to simultaneously track sales activity and inventory. Both manufacturers and trade resellers profit from a comprehensive solution, where a single transaction entry records all pertinent information on the customer, the products purchased, the price, and the date while also updating inventory levels.

According to Peaver (2017), a POS System and Inventory Management is a step up from the use of a cash register. Small start-up businesses that sell services and not products can survive with just a cash register and a simple accounting system. If the business is product-based, there will be chances that it eventually switches to at least a basic point-of-sale inventory system. With a point-of-sale system, they don't have to worry about how much inventory they have on hand the point-of-sale system keeps track of that and you have the information at a glance.

A point-of-sale inventory management system enables a business owner to manage inventors effectively at multiple locations without physically being there. There are no longer any concerns regarding employee theft or inconsistent pricing between locations. The employer need not worry about employee theft while they are away. Employee productivity can be preserved. Systems at the point of sale handle issues that arise while management is not present.

According to Aldrich (2017), these systems have grown in popularity over conventional cash registers because they don't just ring up sales. They amass vital, real-time information about your inventory and customers.

The ability to acquire a rapid current and accurate analysis of your inventory is without a doubt the biggest benefit. The items you ring up for a customer are immediately deducted from your inventory list, which is kept on the system's hard disk, each time you check out a customer.

The ability to establish an alert that notifies you when a certain item is at the re-order point on a decent POS system might be helpful. Some POS systems let you know the most recent price you paid as well as the average price you've paid in the past when it's time to place a new order. Both can aid in your pursuit of the greatest possible supplier agreement. You can run a report after hours that shows you the days, weeks, or months' worth of inventory activities. Some POS systems let you track your inventory year over year so you can compare this year's orders with last year's orders to get the larger picture. By doing this, you can plan where you wish to go in the upcoming months.

Meanwhile, JC Trading is a one-star business that sells products with no accounting system and uses a manual accounting process with the use of notebooks as a record.

The process of JC Trading in determining the point of sales for the past few years is difficult and can easily be dispatched as it is done manually and recorded in a notebook or paper. The records of product payments, orders, and sales are recorded manually which is easy to erase and change the data and they have difficulty in tracking their monthly and yearly sales. This indicates that determining the point of sales requires a more efficient method.

This project aimed to provide a more dependable Web-based point of sale for JC Trading. It was created to simplify and ease the workload for both the owner and employees.

Conceptual Framework

Figure 1 shows the conceptual framework of the study. it will serve as the outline of how the researchers will conduct the study.

INPUT	PROCESS	OUTPUT
• List of products • Customer Order Payment • Non-functional Requirements • Customer data	Web-Based Point of Sales with Forecasting Analytics for JC Trading	• Print out receipt • Customer Information • Generate Report • Check and Monitor Daily, Monthly, Yearly Sales
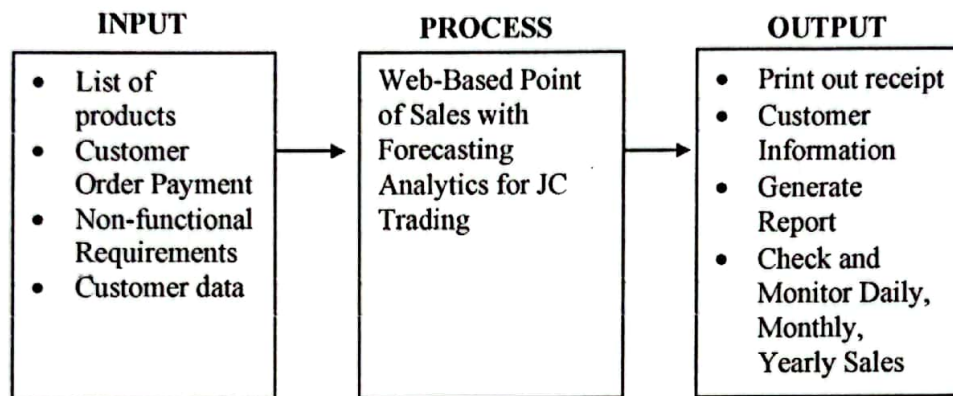
Figure 1. Conceptual Framework of the Study

In the conceptual framework, the input includes the list of products, customer order payment, functional requirements, and the customer data needed for the proposed system. The process is the developed Web-based Point of Sales with Forecasting Analytics for JC Trading. On the other hand, the output includes the printing out of receipts, Customer Information, and Generate Reports. Lastly, they can check and monitor daily, Monthly, and Yearly Sales

Objectives of the Project

This study generally aimed to develop a Web-based Point of Sales With Forecasting Analytics for JC Trading.

Specifically, it sought to:

1. To determine the existing processes in point of sales at JC Trading.

2. To determine the functional and non-functional requirements of the proposed system

3. To test the acceptability of the developed system.

Scope and Limitation

The Owner/Admin can access the database by logging into the system and users can add, search for, and edit items, suppliers, and employees. The Administrator can also see the item's critical levels, as well as their stocks. Print sales and purchase order report so that the cashier cannot access the administrator's area of the system. The seller can also access and connect to a unique account that has limited system access. The product's critical level, stock, and other information can be viewed and searched for by the seller in the database. The seller accepts the customer's payment, makes changes, and prints out the receipts.

Importance of the Study

This study aimed to develop a Web-based Point of Sales With Forecasting Analytics for JC Trading and provide a faster way to predict analytics sales forecasting.

The following were expected to be benefited:

The **Company** will have their work done faster than usual. It will also make their work easier in recording and tracking their important transactions and sales.

The **Researchers** were able to demonstrate and apply their knowledge.

Future Researchers will use this study for their future reference.

Chapter 2

METHODOLOGY

The software model and its phases, the project strategy, the procedures for gathering data, the instrumentation, and the data sources are all covered in this chapter.

Research Design

This study employed the descriptive-developmental research approach. The Web-Based Point of Sales with Forecasting Analytics for JC Trading was built using the results of the descriptive developmental form of study that the researchers used to organize the presentation, prescription, and interpretation of the data. Gay (1992) claims that descriptive research involves collecting data to test hypotheses or to answer questions concerning the current status of the subject of the study. Descriptive research establishes and documents the state of the world. When conducting descriptive research, researchers should not try to change the subject of the study to identify cause-and-effect links. The researchers used the method to gather data about the Point of Sales from the year 2016 to 2022 and the issues encountered in terms of record and file management. The researcher formulated and developed the system through analysis, interpretation, and determination of its flaws. It was used to observe the processes and analyze the papers, particularly the forms that the JC Trading Staff was required to complete. The system incorporated all of the information acquired using this method after analysis, interpretation, and integration.

Software Model

The developers of this project utilized Dilts's (2018) Rapid Application Development (RAD) methodology to develop a Web-based Point Sales with Forecasting Analytics for JC Trading.
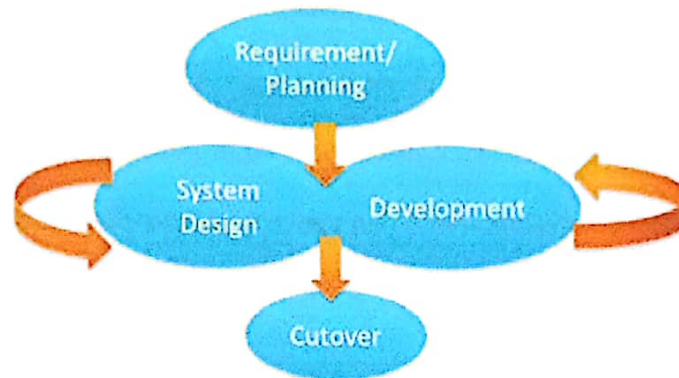

Figure 2. Rapid Application Development Model

Rapid Application Development (RAD) was implemented in four phases as wit:

Requirements planning phase- Development planning is created during this stage using data gathered from multiple initiatives. The owners and employees were interviewed briefly by the proponents. The developers and team members communicated at this stage to identify the objectives and standards for the project as well as any current or potential problems that would need to be fixed during the build. In this stage, the project's needs were finalized with the agreement of all stakeholders after the existing problem has been thoroughly researched.

System design phase- To ensure that demands were addressed in every stage of the design process, the developers and team members collaborated closely. Through an iterative process, all the problems and problems are brought out. The proponents utilized Visual Studio Code in building the system. The developer created a prototype,

the team members test it, and the proponents then gathered together to discuss what worked and what didn't. They also often consult with the Capstone Adviser.

Development phase – The system was created and revised by the proponents. Together, the developer and testers made sure that everything run well and that the end product met the user's goals and expectations. This phase included the system development, coding, testing, and preparation for development.

Cutover phase- The launching of the finished product took place in this phase. While the coders and team members continued looking for system issues, all final adjustments were completed.

Project Plan

The Gantt chart was used to display the timetable of tasks the researchers had to complete. This illustration demonstrates a timeline used as a project management technique to highlight the development of JC Trading's Web-based point of sale with forecasting analytics. It also shows the sequence and duration of the four RAD Model phases.

Activities	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Requirements/ Planning	███	███						
Design		███	███					
Development		███	███	███	███			
Cutover						███	███	███

Table 1. Project Schedule

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Project Assignments

Table 2 shows the team members' roles and responsibilities in the project system, Web-Based Point of Sales with Forecasting Analytics for JC Trading.

Roles	Names	Functions
Project Manager	Kimberly D. Gallo	• Responsible for coordinating with the project team. • Maintain open communications with all the members
System Analyst	Ica Corpuz April Joyce Queddeng	• Responsible for maintaining software systems; performing system problem solving, meeting with users to define business needs
Programmer	Mark Angelo Mora	• In charge of coding as well as providing software support.
QA/Tester	Marc Levi Caliboso Mark Angelo Mora	• In charge of monitoring the project's debugging queries. • In charge of examining and evaluating the system specification • Responsible for reviewing results.
Document/Technical Writer	Marc Levi Caliboso April Joyce Queddeng	• responsible for writing documentation that explains the system's features and advantages.

Table 2. Project Assignment

Population and Locale of the Study

The researchers utilized purposive sampling to helped determined the distribution of respondents, which will involve 20 staff members of JC Trading.

Table 3 shows the distribution of the selected respondents who participates in the acceptability of the proposed system.

Respondents	N
OWNER	1
STAFF	19
Total	20

Table 3. Distribution of Respondents

Research Instruments

Survey questionnaires, observation, and interviews were the instruments used in the study, which also involved the owner and staff members where the proposed system will be implemented. To gauge how usable the created application was, the researchers employed the WAMMI. By asking website users to compare their expectations with what they encounter on the site, WAMMI gauges user satisfaction. statements total were used by the researchers in the WAMMI questionnaire. Each claim is rated on one of five (5) scales: 5- Very Strongly Agree, 4- Strongly Agree, 3- Neutral, 2-Moderately Disagree, and 1- Strongly Disagree.

Data Analysis

Data was gathered through surveys, observations, and interviews. The required data had to be treated with Mean, Frequency Count, and the following indicators—ease of

use, satisfaction, utility, and ease of learning—to determine the usability of the proposed system Web-Based Point of Sales with Forecasting Analytics for JC Trading.

The descriptive interpretation of the proposed system's level of acceptance is displayed in Table 4.

Point Value	Mean Range	Descriptive Rating	Descriptive Interpretation
5	4.21-5.00	Strongly Agree	Very Highly Acceptable
4	3.41-4.20	Moderately Agree	Highly Acceptable
3	2.61-3.40	Neutral	Moderately Acceptable
2	1.81-2.60	Moderately Disagree	Slightly Acceptable
1	1.00-1.80	Strongly Disagree	Not Acceptable

Table 4. Descriptive Interpretation on the Level of Acceptability of Web-Based Point of Sales with Forecasting Analytics for JC Trading

The collected data was rated on a scale ranging from Not Acceptable to Very Highly Acceptable. A mean score of 1.00-1.80 indicates a Strong Disagree and is interpreted as Not Acceptable, 1.81-2.60 indicates Disagree and is interpreted as Slightly Acceptable, 2.61-3.40 indicates a Neutral and is interpreted as Moderately Acceptable, 3.41-4.20 indicates Agree and is interpreted as Highly Acceptable, and 4.21-5.00 indicates Strongly Agree and is interpreted as Very Highly Acceptable. The descriptive interpretation of the suggested system's level of acceptability was shown in Table 1.

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REFERENCES

Web Document

Aldrich, (2017), *QuickBooks Point of Sale and Inventory*

https://www.coursehero.com/file/pv8dl79/21-FOREIGN-

LITERATURE-According-to-Rosemary-Peaver-Oct-2017-A-POS-

System-and/

Bhat (2023). *Descriptive Research: Definition, Characteristics, Methods, Examples, and Advantages* | Question Pro Retrieved (2023) from Bhat Website:https://www.questionpro.com/blog/descriptive-research/

McCombes, S. (2022). *Descriptive Research* | *Definition, Types, Methods & Examples*. Scribbr. Retrieved: December 26, 2022, from: Shona McCombes,Website:https://www.scribbr.com/methodology/descriptiv e-research/

Peaver (2017), *A POS System and Inventory management*

https://www.coursehero.com/file/pv8dl79/21-FOREIGN-

LITERATURE-According-to-Rosemary-Peaver-Oct-2017-A-POS-

System-and/