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SALES APPLICATION FOR REYES ULEP PHARMACY

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Chapter 1

INTRODUCTION

Background of Study

Computers have become a commonplace element of life. Most institutions in the nation still do not use advanced technologies. Daily transactions, inventories, and sales records are written on paper, particularly in pharmacies. People know that modern pharmacies are running at a high pace, attempting to serve as many consumers as possible to the best of their abilities. Yet as time passes, more and more situations occur that make the manual way of keeping track of inventories, updating sales, and handling client transactions impractical. This study aims to create a fully automated, user-friendly, time-effective, and efficient system that minimizes human labor and allows owners to update inventory easily. The pharmacy owner is aware that running a pharmacy can get more challenging as the number of customers grows, especially if everything where done manually, like taking an inventory through manual counting and writing, also the customer needs to be physically present, unlike in the system that it has a programmed inventory so that the pharmacy workers didn't have to work on the inventory their only work to do is they will be monitoring the sales and packing the customer's order.

The researchers planned to develop a system that makes the work in the Pharmacy easier and simpler by providing details and inventory reports about the goods that are purchased, sold, and stored. Also, the system tries to offer receipts generated by the new approach to demonstrate the value of updating the business's present system. The accuracy and effectiveness of the company's process are likely to improve thanks to this technology. The ease of use of this new system help market the business and make



work for the employees easier to improve the system process. It gives a very convenient service for its consumers by being able to save the item in their shopping bag or cart and buying it later or in their free time.

Quick and secure delivery Whenever someone orders a prescription drug online, staff process, package, and deliver the item as soon as feasible. Additionally, in the context of the pandemic, customers reduce their risk of contracting an infection by placing their order at home or work because there is less time spent in close contact with other people. The more important because the Covid-19 virus produces different variants and affects everyone's daily lives.

Impenetrable privacy Because they can protect their personal information and avoid having their order shared with others, as is frequently the case in physical pharmacies, many consumers find it more comfortable to order their medications online.

More options, particularly when it comes to pharmacy apps. With so many available items, clients may choose the best drug for their needs or, more likely, locate a rare one.

Products such as medicine online Pharmacies are frequently cheaper than in traditional or physical stores, but they can also receive discounts, promotions, and other advantageous offers. Furthermore, some people can compare prices between various selling points. Medication instructions and other relevant information are readily available to online pharmacy customers, eliminating the need for additional research.

Using a web-based sales application and inventory systems, according to Alar, and Ben (2020), enables much better stocking and product management precision. As transactions are completed, and items flow from the firm to the consumer, the owners encourage ease of communication between workers and customers. The digital sales



app makes it possible to determine the most popular products. It also enables improved marketing, inventory management, and sales target control.

According to Jenkins A. (2021), Web-based sales applications and inventory systems save businesses time by accelerating transactions while improving accuracy. This increases accounting confidence and accountability among employees because verifying how much money was exchanged and when transactions occurred is simple. They also permit consistent customer service experiences. People know there is always a constant interaction at the register that necessitates tendering payment, accepting a receipt, and transferring ownership of goods and services. This builds trust in a company and ensures that business owners and customers maintain their relationships.

Moreover, according to Glib O. (2022), Amazon Pharmacy is one of the most popular online pharmacies. Amazon Pharmacy's operations are based on a web-based sales application. To Amazon Prime members, the company provides free two-day home delivery of prescriptions. Amazon Pharmacy requires customers to create a secure pharmacy profile to manage insurance and medical information. Amazon Pharmacy's operations were initially restricted to the United States. Amazon Pharmacy announced at its launch that it would provide a helpline staffed by pharmacists and a discount program for uninsured customers. Amazon Pharmacy's challenges include the need for customers to ask doctors to redirect prescriptions, customer habits of using nearby brick-and-mortar drug stores, and customer desire to speak in person with a pharmacist.

Additionally, according to Tamrazyan, G. (2022), various online stores in the Philippines sell medicines and hospital supplies. Shopee and Lazada are two online marketplaces that sell a variety of products. Shopee is an online platform that provides



services worldwide, while Lazada is a company owned by Alibaba Group that provides goods and clothing worldwide. Shopee is owned by a Chinese company, Sea Group, and was founded by Forrest Li. Shopee was launched in the Philippines in 2015, and since then, the Shopee online selling application has grown in popularity. Some people have started businesses through these platforms, particularly during the pandemic, which is the reason for the circumstance.

According to Joskie (2022), web applications in the corporate world have become a dominant trend in practice, causing a rush of research in the recent literature. The Internet, a collection of interconnected computer networks, allows for the free exchange of information. Over a million machines and over four hundred thousand networks now communicate with one another throughout the world. As a result, the Internet, also known as e-business or e-commerce, has evolved into a vital conduit for advertising, contact, and new business opportunities. With a better web presentation of their products, small businesses may now compete with industry titans in this new e-business or e-commerce virtual marketplace. Online shoppers benefit from a broader selection of goods and services, more affordable costs, and the ability to purchase their preferred goods from vendors situated thousands of miles distant under the same wave. It facilitates communication between customers and businesses, and through electronic data interchange, or EDI, buyers and sellers can easily exchange standard business documents like invoices and purchase orders.

Every company or business is unique, meaning each uses a sales application differently. The best web applications are tailored to the company's business model and sales process. A good sales web application also gives an opinion on whether to have more or fewer features based on the needs of the customers, so it cannot be forced to



purchase packages that include functions that are not used. A web application is a client-server application. It has both a client-side and a server-side. It is a component of the client-server environment in which many computers communicate information. In the case of a database, for example, the client is the application through which the user inputs data. The server is the program that stores the data. Web apps have become crucial assets in modern society, which relies on them in fields such as business, health care, and government administration.

According to Alex P. (2021), testing is The most widely used and effective method for ensuring the quality and dependability of software, including web applications. On the other hand, web applications are distinct from traditional software in that they involve dynamic code creation and interpretation and the implementation of a specific interaction mode based on the web application's navigation structure.

In the current workflow of the Reyes Ulep Pharmacy, specific tasks are performed, as well as a general overview of the activities that occur. For example, in prescription intake, the pharmacists or nurses in charge of the Pharmacy received prescription orders from walk-in customers, patients, physicians, and other healthcare providers. In prescription verification, the pharmacists or nurses in charge review the prescription to ensure accuracy and completeness, look for potential drug interactions, and ensure that the medication is appropriate for the patient or customer. During medication preparation, pharmacists or nurses retrieve the necessary medicines from the Pharmacy's stock and preparing for dispensing.

In in-patient counseling, pharmacists or nurses provide information and instructions to patients about their medications, such as how to take the drug, potential side effects, and any special precautions. In dispensing, pharmacists or nurses dispense the



medication to the patient, either directly to the patient or to customers. Nurses keep accurate and up-to-date records of all medications for their patients in case any patients or customers forget to bring their prescriptions for their medication. When the nurses in charge of inventory records and stocks record the distributed medicines and supplies, they place their reports in a recording book. They are currently using a manual recording of the distributed products sold daily.

Based on Ms. Prodencia Foronda, the administrator of Reyes Ulep Clinic and Hospital, one of their struggles is increasing their sales. In dispensing their medicines and medical supplies, they were accepting walk-in customers and supplying drugs and medical supplies in the hospital; during and after the pandemic, dispensing their products was the same as before the pandemic. It was too risky for the one that entertained the customer and the customers.

Hence, the system can give much convenience to the Pharmacy and also to the customers. The Pharmacy owner and the customers can provide faster transactions using the system. A system feature allows the pharmacy owner to monitor the record of ordered products and inventory records so that when he needs a report of sales and inventory, he can easily access the developed system. In the customer's access in registering an account in the developed system, they can get an Email verification. Email verification is a security measure used when registering a statement to confirm that the email address provided belongs to the user reporting the account. It helps prevent fraudulent activity and ensures the user is a natural person, not a bot or spammer. This verification process also protects the user's personal information from being accessed or used by unauthorized individuals. Overall, email verification helps



maintain the integrity of the user database and provides a more secure and trustworthy platform for customers.

Conceptual Framework

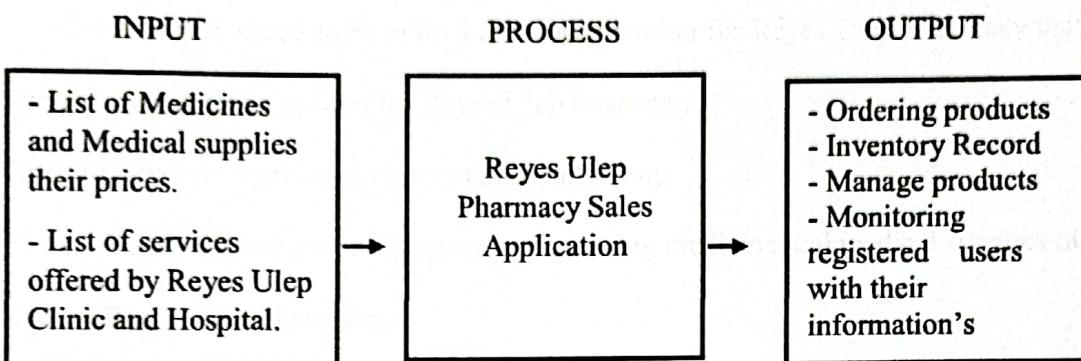


Figure 1. Conceptual Framework

The List of Medicines and Medical Supplies, prices, and the List of Offered Services of the Hospital are used as input in developing the sales application to streamline the sales process and make it more efficient. By including this information in the sales application, the pharmacy employees can easily access the details of the products they are selling, such as their prices, availability, and any other relevant information. This information can help sales representatives provide accurate pricing information. It can also help to ensure that the customer is aware of any changes in pricing or product availability, which is vital for making informed decisions. In developing the Sales Application for Reyes Ulep Pharmacy, the recommendation from the findings upon an interview with the client is used to process the development of the developed system.

The system output enables customers to browse quickly, discover what they wish to buy, add, delete, and adjust the quantity options in their cart. When a user places an order for products, the system also computes the total cost of all the things in their basket. An inventory report in the admin part allows the admin to track the sold items and the number of products available in the created system. There is also a tool that



enables administrators to add and change goods. A function in the admin section allows the admin to monitor the user's information and display the ID image.

Objectives of the Study

This research aimed to develop a Sales Application for Reyes Ulep Pharmacy that serves as an ordering system for Reyes Ulep Pharmacy.

Specifically, this significant answer to the following:

1. Determine the current process in dispensing medicine and medical supplies of Reyes Ulep Pharmacy.
2. Determine the functional and non-functional requirements of the proposed system.
3. Evaluate the acceptability of the Sales Application for Reyes Ulep using Website Analysis and Measurement Inventory (WAMMI).

Scope and Limitation of the Study

The proponents focused on developing a Sales and Inventory System conducted at the Reyes Ulep Clinic and Hospital. The proposed system can store, view, update, and edit the current stock of the Reyes Ulep Pharmacy and can also generate a list of available items, which is the medicines and hospital supplies. It can inquire about availability and provide a sales report, inventory, and sales reports. The system can automatically compute the total sales of the outlet, which had used to manage the stocks. It also provides the capability to record, modify and remove an inventory stock with data sorting and browsing capability. It has a secure login for authorized personnel only.

The pharmacy owner has a server to monitor the registered customers or buyers, and the owner can also manage the uploaded products on hand and manage the sales using



the developed web application. The web application can manage product information, including its details and price. There is also a Senior Citizen and PDW for the discount deducted upon shipping to validate whether the ID was valid; when ordering the fill-up form, there is a section where the ID number for the Senior Citizen and PWD be placed.

The scope of the delivery is limited around Sta. Maria, Ilocos Sur, if Reyes Ulep Pharmacy wants to expand its business shortly, it can supply a broader range of areas if they're going to extend its delivery service. The developed system doesn't have an additional 30 pesos of the shipping charge, so upon delivery, the 30 pesos delivery fee is added to the final amount of the customer order for the delivery or mailman that the Reyes Ulep Pharmacy is in charge of delivery.

Importance of the Study

The study is beneficial to the following:

The Pharmacy Owner can easily monitor the users, inventory reports, insert and manage products by the use of the developed system, which is the sales application for Reyes Ulep Pharmacy.

Customers can order a product such as medicines and hospital supplies; by using the sales application, they can easily find the medication and supplies they want to buy in the system.

The Researchers enhance their knowledge and skills in web application design.

Future Researchers use the results of this study and can continue developing the developed system by continuously completing the recommendation written in Chapter 3 of this study. Future researchers who want to continue this study's development can contact the developers to get the credentials to access the developed system.



Chapter 2

METHODOLOGY

This chapter presents the research methodology, which includes the research design, software model, sources of data, instrumentation and data collection, and tools for data analysis.

Research Design

This study used the descriptive and developmental research design. According to Shona McCombes (2022), the developmental research design is a type of research that examines changes that occur over time in various aspects of development, such as physical, cognitive, social, and emotional development; in this study, the developmental research design is used to examine the changes occur during the creation of the sales application. This type of research design is commonly used in the field of developmental psychology to study how individuals grow and change throughout their lives, from infancy to old age; like in human form, the users can identify that the process of creating the website there is the process of development from the typical website through the presentable and functional website.

The descriptive research design is used in this study to describe the features of the developed system and the analyzed data from the gathered information from the client without manipulating any variables. In website development, according to Shona McCombes (2022), descriptive research design typically involves data collection via various methods such as surveys, user testing, website analytics, and focus groups. Data collected may include user demographics, website usage patterns, website design and feature preferences, and feedback on specific aspects of the website. It is also used to understand better the target audience's needs, preferences, and behavior. This research



design entails gathering and analyzing data about the website's users, behavior, and intentions to improve its design, functionality, and user experience. In short descriptive research design can be a valuable tool in website development, helping developers create user-friendly, engaging websites that meet the needs and preferences of the target audience.

Software Model

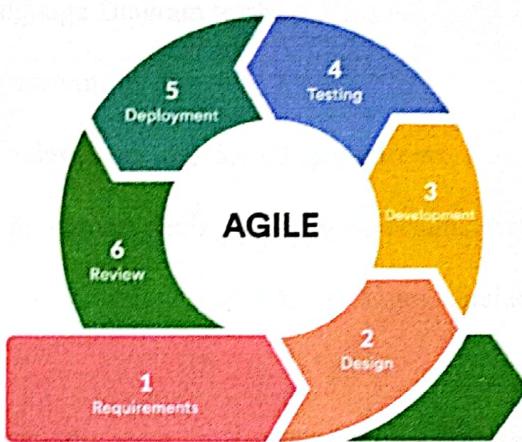


Figure 2. AGILE SDLC

This study uses the agile software development life cycle as a quality assurance and testing model because agile is one of the methods used in developing web applications. Agile Software Development is a blanket term and includes various frameworks and methodologies, all based on the developers' beliefs and thoughts regarding how exactly software was designed and developed. According to Olha Anurina (2022), the model encourages software development in small, quick steps. The agile software development life cycle was created to help with ongoing software deliverables, continuous project improvements, real-time updates, and rapid development. The agile methodology is based on software iterations allowing companies to update users regularly.



Requirements gathering and analysis. In this phase, the researchers must define the criteria. The researchers should explain business opportunities and plan the time and effort needed to build the project. Based on this information, the researchers can evaluate technical and economic feasibility.

Design. The researchers have identified the project and worked with stakeholders to define requirements. The researchers can use the user flow diagram or the high-level Unified Modeling Language Diagram to show the work of new features and how they apply to their existing system.

Development. The designers and developers start working on their projects. The aims of designers and developers deploy the working product within the estimated time. The product undergoes various improvement stages, including simple, minimal functionality.

Testing. In this phase, the team issues a product for the user's work environment. The team examined the product's performance and looked for the bug.

Deployment. After agreeing on the plan with the administrator, the researchers, and the product web application itself. The product is delivered in stages, in separate sprints, each designed to improve the developed web application. The initial release was likely to undergo many changes to improve functionality and features.

Review. After releasing the product, the last step is feedback or review. In this step, the developers develop the web application according to the client's feedback and reviews.



Project Plan

The Project Plan depicts the study's life cycle. Gathering information on all the crucial ideas has to be utilized in creating the project web application. It requires effort to survey how and what are the errors and functionality of the web application. The agile software development cycle phases were used as a basis for project planning.

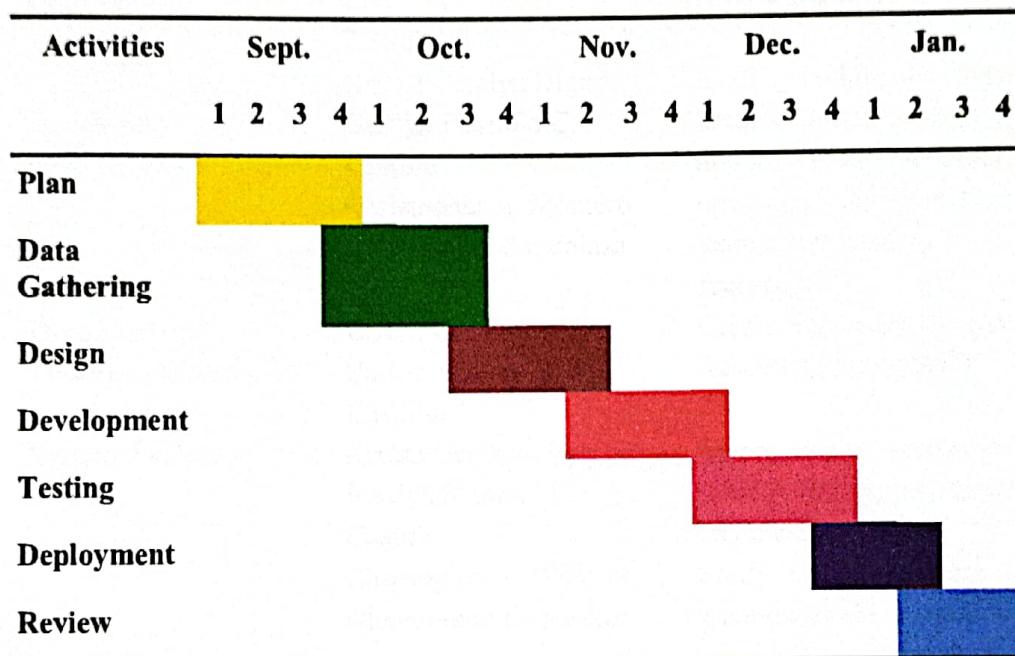


Table 1. Project Plan for Designing and Developing Sales Application for Reyes

Ulep Pharmacy

Legend:





Project Assignment

The project team members' roles and responsibilities in the developed system, the Sales Application for Reyes Ulep Pharmacy, are shown below.

Roles	Names	Functions
Project Leader	Krizza Geralyn Diga	Led team report status
Core Team	Bertlyn Petronio C. Castillo	review and ensured quality
Developer	Krizza Geralyn Diga Bertlyn Petronio C. Castillo Christopher A. Montero Glennmoore Ibardolaza	Lead by nothing decision creating documentation and performing any other operational duty then the team needs to stay focused.
Document-er / Technical Writer	Krizza Geralyn Diga Bertlyn Petronio C. Castillo	Create framework content. Research writing skills.
System Analyst	Krizza Geralyn Diga Bertlyn Petronio C. Castillo Christopher A. Montero Glennmoore Ibardolaza	System analyst provides critical data support to the technical team. They notify the entire project team about abnormalities or variances and evaluate and monitor the overall project.
QA/ Tester	Krizza Geralyn Diga Bertlyn Petronio C. Castillo Christopher Montero Glennmoore Ibardolaza	Test and evaluate the performance of the sales application. Quality assurance is a critical part of proper web development, and the tester may work on the application through several iterations of its design and performance.

Table 2. Role Requirements and Responsibilities



Population and Locale of the Study

The researchers utilized purposive sampling that helped them determine the respondents' distribution, which involves the pharmacy owner of Reyes Ulep Pharmacy, the administrator, some nurses of Reyes Ulep Clinic and Hospital, 5 IT experts, and some undergraduates of ISPSC Sta. Maria Campus.

Respondents	N
Reyes Ulep Clinic and Hospital Nurses, Hospital Administrators, including the Pharmacy owner	12
IT experts	5
TOTAL	17

Table 3. Distribution of Respondents

Research Instruments

Interview, documentary analysis, internet research/library research, and survey questionnaire were the tools used in the study, which also involved the participation of the Reyes Ulep Clinic and Hospital's Director, their administrator, and their employees from September 2022 to February 2023.

WAMMI refers to using techniques and technologies to create interfaces that allow users to interact with software applications using multiple modalities, such as speech, gestures, touch, and gaze. WAMMI can make the application more user-friendly, accessible to a broader range of users, and provide a better user experience. The goal of WAMMI in programming is to improve the overall usability and effectiveness of software applications by creating more intuitive and natural interfaces (Xianian O. 2021).



Data Analysis

Questionnaires and interviews served as tools for gathering the data. Mean used to get the total mean for the satisfaction, usefulness, and ease of learning were needed to treat the data required to identify the usability of the proposed system Sales Application for Reyes Ulep Pharmacy.

Table 4 shows the descriptive interpretation of the proposed system's level of acceptability.

Point Value	Mean Range	Descriptive Rating	Descriptive Interpretation
5	4.21-5.00	Strongly Agree	Very Highly Acceptable
4	3.41-4.20	Agree	Highly Acceptable
3	2.61-3.40	Neither Agrees	Moderately Acceptable
2	1.81-2.60	Disagree	Slightly Acceptable
1	1.00-1.80	Strongly Disagree	Not Acceptable

Table 4. Descriptive Interpretation on the Level of Acceptability of Sales

Application for Reyes Ulep Pharmacy

The data gathered were categorized from Not Acceptable to Very Highly Acceptable. Mean ranges from 1.00-1.80, described as Strongly Disagree and interpreted as Not Acceptable; 1.81-2.60, described as Disagree and analyzed as Slightly Acceptable; 2.61-3.40, described as Neither Agree and interpreted as Moderately Acceptable; 3.41-4.20 described as Agree and interpreted as Highly Acceptable, and 4.21-5.00 described as Strongly Agree and interpreted as Very Highly Acceptable.