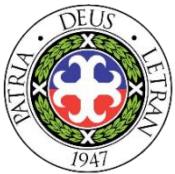


EXECUTIVE SUMMARY| 1

EXECUTIVE SUMMARY

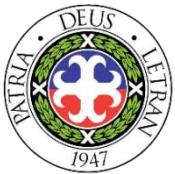
This project seeks to establish a robust, user-friendly web-based tracking system tailored for infants and children from birth to 1 year old residing in Barangay Babasit. With focus on bolstering essential vaccine coverage, the initiative aims to revolutionize how immunization data is managed and utilized within the community. By harnessing the power of digital technology, the project endeavors to achieve multifaceted objectives, including optimizing immunization tracking mechanisms, heightening parental or guardian awareness regarding vaccination schedules, and furnishing indispensable data insights for local health authorities.

At its core, the project is propelled by a steadfast commitment to advancing public health outcomes. Through meticulous attention to detail and innovative solutions, the ultimate goal is to catalyze tangible improvements in immunization coverage rates. By cultivating a more efficient and transparent data management framework, the project aspires to streamline processes, mitigate logistical challenges, and fortify the infrastructure supporting immunization efforts. Moreover, by empowering parents and guardians with accessible information and reminders, the project aims to foster a culture of proactive healthcare engagement, ensuring that every child receives timely and appropriate vaccinations.



EXECUTIVE SUMMARY | 2

The significance of this undertaking reverberates throughout the community, underscoring its pivotal role in safeguarding the well-being of infants and children. Beyond the immediate benefits of bolstered vaccine coverage, the project stands as a testament to the collective resolve to confront and mitigate critical health challenges. By fostering collaboration among barangay health workers and leveraging technology as a force for positive change, this initiative embodies the spirit of community-driven progress. Ultimately, its success will be measured not only by statistical metrics such as increased immunization rates but also by the enduring impact it has on the health and vitality of future generations in Barangay Babasit.



APPROVAL SHEET | 3

APPROVAL SHEET

This research proposal entitled "**WEB-BASED IMMUNIZATION MONITORING AND SCHEDULING SYSTEM WITH SMS NOTIFICATION FOR INFANTS AND CHILDREN IN BARANGAY BABASIT**", prepared and submitted by **Marie Joy S. Cendaña, Kristine Rose T. Evangelista, Wilson Laurence V. Hizon, Christian Nicole A. Isip, Joan May C. Laca, and Justin H. Martin** in partial fulfillment of the course requirements for the degree of **BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**, has been examined and recommended for acceptance and approval for Oral Defense.

MR. EUGENE AQUINO ESTACIO

Adviser

Approved by the Committee on Oral Examination with a grade of _____.

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Accepted and approved in partial fulfillment of the requirements for the degree of
STATE COMPLETE NAME OF PROGRAM.

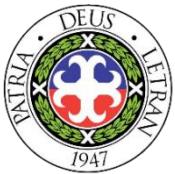
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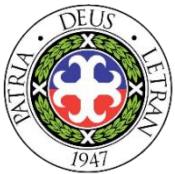
To **Mr. John Ivan S. Cleofe** Vice President for Academics/Dean of Colegio de San Juan de Letran - Manaoag, College Department, for acceding the researchers to conduct this study.

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ACKNOWLEDGMENT | 5

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Above all to the Great Almighty, the Author of knowledge and wisdom, thank you for the countless love, ability, skills, and power of the mind.

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CHRISTIAN NICOLE A. ISIP

JOAN MAY C. LACA

JASTIN H. MARTIN



DEDICATION| 6

DEDICATION

With profound gratitude and heartfelt appreciation, we dedicate this research endeavor to our cherished parents, whose unwavering love, support, and sacrifices have been the guiding light illuminating our path to academic achievement. Your boundless encouragement, selfless devotion, and tireless efforts have instilled in us the values of diligence, resilience, and perseverance, shaping us into the individuals we are today. This work stands as a testament to the profound impact of your nurturing presence in our lives.

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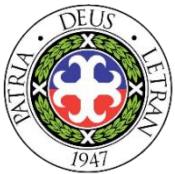


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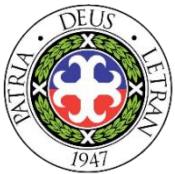


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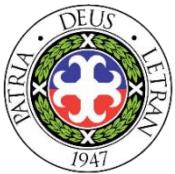


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CHAPTER I

INTRODUCTION

Introducing a solution for modernizing vital healthcare processes, this study addressed the stark contrast between traditional and contemporary approaches in managing infant and child vaccination records. While businesses of the past grappled with manual record-keeping and limited outreach strategies, today's technological landscape offers unprecedented opportunities for efficiency and connectivity.

In the digital age, web applications have become indispensable tools, reshaping industries and daily interactions. The absence of a robust online presence could significantly hinder a company's competitiveness in an increasingly digital marketplace. Similarly, mobile applications have revolutionized the way we live, providing seamless access to services and information at our fingertips.

Building upon this digital evolution, our project proposed a comprehensive web-based tracking system tailored to monitor and manage essential vaccine statuses for infants and children in our community. By harnessing the power of web technology, we aimed to streamline healthcare processes, ensuring timely vaccinations and empowering parents and guardians with real-time information and reminders.

This innovative solution not only addressed the immediate need for efficient vaccine tracking but also offered scalability, data-driven insights, and enhanced



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public health outcomes. Through user-friendly interfaces, our project exemplified the transformative potential of digital solutions in healthcare management.

In summary, this study represented a pivotal step towards modernizing healthcare practices and leveraging technology to improve accessibility, efficiency, and overall well-being. By embracing digital innovation, we paved the way for a healthier and more connected community.



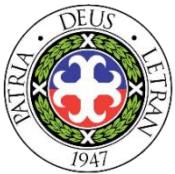
PURPOSE AND DESCRIPTION OF THE PROJECT | 14

1.1 PURPOSE AND DESCRIPTION OF THE PROJECT

This project aimed to develop a web-based system to improve vaccine monitoring for infants and children in Barangay Babasit. The system was designed to track the immunization status of children for the following vaccines: BCG vaccine, Hepatitis B vaccine, Pentavalent vaccine (Diphtheria, Tetanus, Pertussis, Haemophilus influenza type b, and Hepatitis B), Oral Polio vaccine (OPV), Inactivated Polio vaccine (IPV), Pneumococcal Conjugate vaccine (PCV), and MMR (Measles, Mumps, Rubella vaccine). The system provided a user-friendly platform for parents and guardians to access and update vaccination records, receive automated reminders for upcoming immunizations, and communicate with healthcare providers. By leveraging digital technology, the project sought to enhance the efficiency, accuracy, and accessibility of vaccine monitoring, ultimately contributing to better public health outcomes.

1.2 STATEMENT OF THE PROBLEM

This study aimed to develop a vaccine monitoring system to improve the monitoring of the immunization status of children and infants and to notify the parents via SMS about the vaccines that needed to be administered to their children and notify them of upcoming vaccination schedules at Barangay Babasit. This study also aimed to make data gathering and information storage of Barangay Babasit efficient and safe. It was intended to respond to the following questions:



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1. What limitations do the current methods of vaccine monitoring and record-keeping in Barangay Babasit present, particularly in terms of accuracy and accessibility of data?
2. What system can improve the efficiency of monitoring and notifying parents about their child's vaccination schedule?
3. What features can a digital vaccine monitoring system provide to address the needs of both health workers and parents in improving vaccination coverage and compliance?
4. How does the implementation of this system affect the compliance rate of parents and guardians in adhering to the vaccination schedule?

1.3 OVERVIEW OF THE CURRENT STATE OF TECHNOLOGY

Barangay Babasit currently relied on manual methods, using pen and paper for data gathering from children and their parents, along with logbooks and file folders for record-keeping. However, this traditional approach was labor-intensive, error-prone, and vulnerable to damage from pests or natural elements. Moreover, the accessibility of physical documents increases the risk of unauthorized access or information leakage. By implementing a modern web-based tracking system, Barangay Babasit could significantly improve its data management processes. The system would offer digital storage, reducing the risk of data loss due to physical damage and enhancing accessibility and security through user authentication and



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encryption features. Automated reminders and notifications would ensure timely immunizations, while real-time data updates would facilitate efficient tracking and monitoring of vaccine statuses. Overall, the system would streamline operations, improve accuracy, and enhance data security within the barangay.

1.4 OBJECTIVES

1.4.1 GENERAL OBJECTIVE

The general objective of the study was to develop a Web-based Immunization Monitoring System for Infants and Children in Barangay Babasit. Making the monitoring and tracking of the immunization of infants and children in Barangay Babasit more efficient and accurate.

1.4.2 SPECIFIC OBJECTIVES

The specific objectives of this proposed study are as follows:

1. To determine the limitations that the current methods of vaccine monitoring and record-keeping in Barangay Babasit present, particularly in terms of accuracy and accessibility of data.
2. To determine the system that improve the efficiency of monitoring and notifying parents about their child's vaccination schedule.



3. To determine the features that a digital vaccine monitoring system can provide to address the needs of both health workers and parents in improving vaccination coverage and compliance.
4. To measure the impact of the web-based system on immunization compliance.

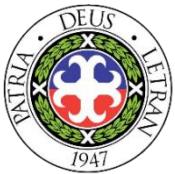
1.5 SCOPE AND LIMITATION

1.5.1 SCOPE

This project focused on implementing the Web-Based Vaccine Monitoring System for Infants and Children in Barangay Babasit. The system would encompass the complete management of infant/children profiles and their vaccination status as well as the profiles of their parents.

Back-End Scope

1. Set up a secure login system with role-based access control for administrators and BHW.
2. Create a MySQL database to store comprehensive infant/children and their respective parents' data, such as personal information, and vaccine status.
3. Implement CRUD operations (Create, Read, Update, and Delete) for infants/children records to ensure efficient data management.



4. Incorporate robust security measures, including encryption and secure coding practices.
5. Create a notification system to inform parents of vaccination schedules and drives.

Front- End Scope

1. Create an intuitive and responsive web interface that works with a variety of devices and screen sizes to make navigation easy.
2. Create a user-friendly query interface, allowing for quick retrieval of infant/children information.
3. Create a form that is easy to use for entering data into the database.
4. Integrate intuitive controls and interactions to improve the overall user experience.

1.5.2 LIMITATIONS

The system's current scope is limited to monitoring vaccines for children aged from birth to 1 year old. A notable limitation in the system's design is the requirement to return to the homepage after every data entry or modification. Non-admin users have restricted access, limited to viewing child information and making basic edits. This restricted access, while necessary for security, may limit the system's flexibility and usefulness for certain users. Additionally, the system's compatibility is primarily focused on Windows and Android platforms, with potential performance or usability



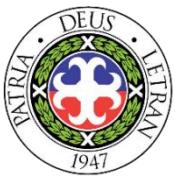
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issues on other operating systems like Linux and macOS. This limitation may restrict the system's accessibility to users who prefer or require different operating systems.



CHAPTER II

REVIEW OF RELATED LITERATURE/STUDIES

The review of related literature provides a critical examination of existing research and studies relevant to the development of a web-based tracking system for monitoring the essential vaccine statuses of infants and children in Barangay Babasit. This section aims to contextualize the project within the broader landscape of healthcare informatics, immunization tracking systems, and technology applications in public health. By synthesizing findings from previous research, the review seeks to identify gaps, challenges, and best practices that can inform the design, implementation, and evaluation of the proposed scheduling and monitoring system. Additionally, it serves as a foundation for understanding the theoretical frameworks, methodologies, and technological innovations that underpin the development of effective vaccine monitoring solutions. Through a comprehensive review of related literature, this section aims to provide insights and recommendations for advancing the project's objectives and contributing to the body of knowledge in the field of healthcare technology and public health interventions.



2.1. RELATED STUDIES AND/OR STUDIES

2.1.1 Foreign

A. Assessment Of Immunization Coverage and Factors That Determine Dropout Rate Among Children 0-23 Months Of Age, In Esan Central LGA, Edo State, Nigeria

The study conducted by J. I. Oboh, R. N. Osagie, A. A. Ayobami, S. O. Okijiola, A. Egbeleke Tawakalit, and A. O. Ayinde (February 2024) reveals low vaccination rates and dropout rates in the Esan Central LGA, where vaccination is frequently started at birth. Obstacles that have been identified include the attitudes of healthcare professionals, inadequate prenatal and postnatal care, a lack of vaccines, low maternal education, and a staffing shortage. Comprehensive community programs involving stakeholders, training to change the attitudes of healthcare workers, bolstering community-based care, reviewing vaccine procurement policies, regular audits, and training healthcare workers in practical skills are all recommended to improve immunization outcomes.

B. Integrated Immunization Information System in Indonesia: Prototype

Design Using Quantitative and Qualitative Data

In this research, M. A. W. P. Rahmadahn and P. W. Handayani (December 2023) investigated the design of an Integrated Immunization Information System



(IIS) prototype for Indonesia. Employing a mixed-methods approach, they developed separate interfaces for the public and health workers, encompassing functionalities like immunization history, schedule, reminders, and adverse event reporting. The evaluated prototype demonstrated good usability and potential for improving immunization data management in Indonesia.

D. Effect of Mobile Phone Text Message Reminders on Routine Immunization Uptake in Pakistan: Randomized Controlled Trial

Kazi et al. (2018) conducted a randomized controlled trial in Pakistan to investigate the effectiveness of text message reminders for improving routine immunization uptake in children. They found that while reminders did not significantly increase overall vaccination coverage, they led to a higher proportion of children receiving their vaccines on time, especially at the 6-week visit. These findings suggest the potential of mobile health interventions in promoting timely immunization in low- and middle-income countries.

E. Development of Automated Text-Message Reminder System to Improve Uptake of Child Vaccination in Ethiopia

Mekonnen et al. (September 2019) explored the potential of using an automated text-message reminder system to combat low childhood vaccination rates in Ethiopia. Recognizing the contextual nuances of the region, they developed a system tailored to local language, infrastructure, and cultural



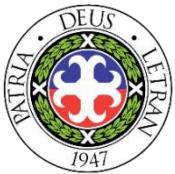
sensitivities. The system functioned through a web application for registration and scheduling reminders, integrated with an SMS application for message delivery. A pilot test involving 30 participants demonstrated successful message delivery with 100% coverage, suggesting the system's potential to improve communication and awareness around vaccination schedules, ultimately contributing to increased immunization uptake.

F. Piloting an E-Registry & SMS Reminder System for Routine

Immunization in Kuje, FCT, Nigeria: Baseline Evaluation

David et al. (March 2023) conducted a baseline evaluation before piloting an electronic registry and SMS reminder system for routine immunization in Kuje, Nigeria. They aimed to understand the existing challenges and reasons for incomplete vaccination coverage. Their findings revealed a high caregiver understanding of immunization benefits but identified long waiting times as a significant barrier. This research highlights the potential of technology-based interventions like the proposed system to address these challenges and improve immunization uptake in Nigeria.

G. Vaccination Coverage by Age 24 Months Among Children Born in 2015 and 2016 — National Immunization Survey-Child, United States, 2016–2018



In the research conducted by H. A. Hill, MD, PhD, J. A. Singleton, PhD, D. Yankey, PhD, L. D. Elam-Evans, PhD, S. C. Pingali, MPH, MS, and Y. Kang, MPH (October 2019), in order to account for children who were younger than 24 months on the day the vaccination status was evaluated, the vaccination coverage by age 24 months was estimated using Kaplan-Meier (time to event) analysis. Because the second dose of the Hepatitis A vaccine (HepA) can be given as late as 41 months according to the current schedule, coverage with ≥ 2 doses of the vaccine was evaluated at 35 months, the highest age included in the survey. The 2018 switch from a dual landline and cellular telephone sample frame to an exclusively cellular telephone sampling frame required adjustments to the previous NIS-Child weighting methods in order to optimize estimation by birth year. Differences in coverage estimates were assessed using t-tests on weighted data; p-values of <0.05 were deemed statistically significant. Examinations were conducted using SUDAAN (version 11.0.1; Research Triangle Institute) and SAS (version 9.4; SAS Institute). There was no indication of a shift in survey accuracy between the survey years of 2017 and 2018.

H. The Digital Immunization System of the Future: Imagining a Patient-Centric, Interoperable Immunization Information System

Atkinson et al. (October 2020) envision a future where individuals have secure access and control over their immunization records through a patient-



centric and interoperable system. This vision aligns with the growing emphasis on patient empowerment and data ownership in healthcare. Their proposed system features real-time data analysis and proactive reminders, which could significantly improve immunization coverage and timeliness. However, they acknowledge challenges regarding data privacy and security, requiring collaboration between stakeholders to ensure responsible implementation. This future-oriented perspective highlights the potential for technology to transform immunization practices and promote individual and public health.

2.1.2 Local

I. Implementation of Lot Quality Assurance Sampling Using Mobile Data Collection Tools to Assess Vaccination Coverage After Synchronized Polio Vaccination in the Province of Camiguin, Philippines

Gonzales (March 2020) investigated the effectiveness of Lot Quality Assurance Sampling (LQAS) and mobile data collection tools in assessing vaccination coverage after a synchronized polio campaign in the Camiguin province of the Philippines. Employing a multi-stage clustered survey with 60 participants per municipality, the study utilized the KoBo Toolbox for efficient data collection. Findings revealed high vaccination coverage in Camiguin and highlighted the efficacy of LQAS for rapid post-campaign assessments. Additionally, the research emphasized the benefits of mobile data collection in



ensuring real-time data validation, analysis, and reporting. This study suggests the valuable role of LQAS and mobile tools in improving future vaccination campaigns and microplans within municipalities, while also emphasizing the need to address concerns regarding unvaccinated children and enhance risk communication strategies for optimal campaign effectiveness.

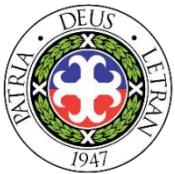
J. Assessment of Online Maternal and Newborn Immunization Schedule

Records Management System

"Assessment of Online Maternal and Newborn Immunization Schedule Records Management System" by A. C. Reyna (2023) investigated the effectiveness of an online system for managing immunization records. The study found the system improved accuracy, tracking, and communication, suggesting potential benefits for healthcare delivery but highlighting the need for further research on broader impact and implementation challenges in various contexts.

K. Optimizing Vaccine Access: A Web-Based Scheduling System with Geo-Tagging Integration and Decision Support for Local Health Centers

Batoon & Piad (May 2023) explored optimizing vaccine access in their research, proposing a web-based scheduling system for local health centers. This system incorporated geo-tagging to visualize vaccine distribution, decision



support recommending necessary immunizations, and online appointment scheduling, aiming to streamline the process and improve accessibility. The research found high user acceptance, suggesting the potential for this technology to enhance public health initiatives and immunization rates.

L. An Assessment of the Expanded Program on Immunization (Epi) in the Philippines: Challenges and Ways Forward

While acknowledging success in reducing vaccine-preventable diseases, V. G. Ulep and J. Uy (2021) highlight a coverage gap and identify challenges including vaccine hesitancy and supply chain issues. The research proposes solutions like improved governance, communication strategies, and healthcare worker training. This research underscores the complexity of achieving high immunization coverage and the need for addressing both demand and supply-side challenges.

M. Vaccination Coverage and Factors Associated with Incomplete Childhood Vaccination Among Children Aged 12-59 Months in Miagao, Iloilo, Philippines

Malecosio Jr. et al. (July 2020) explored childhood vaccination coverage in Miagao, Iloilo, Philippines, finding only 28.7% of children fully vaccinated. Home births and mothers with fewer postnatal visits were significantly associated with incomplete vaccination, suggesting the importance of



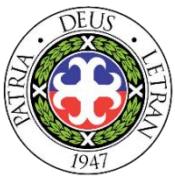
addressing maternal healthcare factors. While specific to a region and needing further exploration of contributing factors, this research highlights the need for targeted interventions to improve vaccination coverage and child health in the Philippines

N. Information on Mapping and Vaccination Data in a Locality System

Raganas et al. (September 2023) propose a system that combines a database for vaccination records with mapping functionalities to enhance local public health efforts. The system offers a centralized and secure platform to store vaccination data within a specific locality. More importantly, it utilizes maps to visually represent vaccination coverage across different areas. This allows health officials to pinpoint locations with low vaccination rates and strategically allocate resources. By having organized data and clear visualizations, the system can potentially streamline vaccination programs and improve healthcare worker efficiency.

O. Bargaining and Gendered Authority: A Framework to Understand Household Decision-Making About Childhood Vaccines in the Philippines

Wachinger et al. (September 2022) explore household decision-making around childhood vaccines in the Philippines through a "bargaining and gendered authority" framework. They found diverse stakeholders (parents,

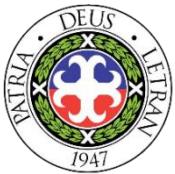


grandparents, etc.) influence decisions, often shaped by gender roles and access to resources. Bargaining strategies, information, and physical presence during discussions impact individual bargaining power. This research highlights the complexity of vaccine decision-making and the need for interventions considering both individual agency and gendered social contexts. While specific to one region, it offers a valuable framework for understanding such dynamics in the Philippines.

2.2 SYNTHESIS

2.2.1 Previous Related Works

In the field of vaccination data management, research by Raganas et al. (2023) explored a locality-based system integrating data with mapping functionalities. While their focus was on data visualization for a wider area, it highlights the need for centralized and accessible vaccination data. Our capstone project complements this area by developing a web-based vaccination system specifically for infants and children in Barangay Babasit. This system offers centralized data storage, improved data management for healthcare workers, and SMS notification functionality for parents, promoting adherence to vaccination schedules. By focusing on a specific population and geographic area, our project provides a targeted solution for streamlining data management

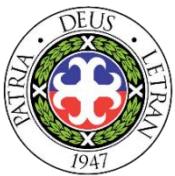


LIMITATION OF PREVIOUS WORK | 30

and potentially increasing local vaccination rates, building upon the concept of centralized data storage identified by Raganas et al. (2023).

2.2.2 Limitation of Previous Work

- **Focused on the COVID-19 vaccine:** The research by Raganas et al. (2023) presents a valuable concept for a locality-based vaccination data system. However, their focus on a broader application, potentially for monitoring COVID-19 vaccination status, presents a limitation in addressing the specific needs of our project. Our project is designed for a web-based system specifically focused on managing essential vaccinations for newborn infants and children in our barangay. While their system offers functionalities like centralized storage and data visualization, it might not be tailored to the specific immunization schedule and data requirements for routine childhood vaccinations.
- **Locality-specific:** Raganas et al.'s research from 2023 offers a viable method for managing vaccination data based on location. When taking into account the particular requirements of a barangay setting, their emphasis on an application at the municipality level poses a limitation. Although their system has features like data visualization and centralized storage, it may be built to handle more data and a wider geographic area. This may make it more difficult to modify for a more constrained setting, such as a barangay.



STRENGTH OF PREVIOUS WORK | 31

- **SMS notification:** Raganas et al.'s (2023) approach lacks one feature that can directly address missed vaccinations: SMS notification reminders. While their emphasis on data visualization and centralized storage is admirable, it does not address the difficulty of keeping parents and guardians informed of forthcoming immunization regimens. This can result in missed vaccines and incomplete immunization coverage.

2.2.3 Strength of Previous Work

The research by Raganas et al. (2023) on a locality-based vaccination data system with mapping functionalities presents several strengths that could significantly improve vaccination program efficiency. By proposing a centralized database for storing vaccination records, the system eliminates the need for healthcare workers to search through scattered paper records, saving them valuable time and effort. This centralized storage also simplifies data management, potentially offering functionalities for easy data entry, tracking, and retrieval. Furthermore, the system's integration with mapping functionalities offers a powerful visualization tool. By presenting vaccination coverage data visually on maps, health officials can quickly identify areas with low vaccination rates. This allows them to prioritize their efforts and target resources more effectively toward these areas, leading to a more strategic and impactful approach to vaccination campaigns. Ultimately, the strengths of this research lie in its potential to streamline data management for healthcare workers,



improve decision-making for resource allocation, and pave the way for more targeted vaccination campaigns. This could lead to significant improvements in public health efforts, particularly when considering the potential for adapting the locality-based system to wider geographical areas.

2.3 Bridging the Gap

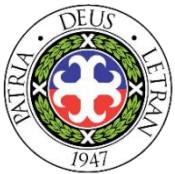
In Barangay Babasit, ensuring complete vaccination coverage for infants and children faced challenges due to inefficient data management practices. Paper-based records were not only cumbersome to manage but also prone to loss or damage. This lack of centralized storage made it difficult for barangay health workers to track vaccination schedules effectively, potentially leading to missed vaccinations and incomplete coverage. While research by Raganas et al. (2023) explored a promising concept of a locality-based vaccination data system with mapping functionalities, its focus lay on data visualization for a wider geographical area. This valuable research didn't directly address the specific needs of a barangay setting, where targeted interventions and streamlined data management for a smaller population were crucial.

This capstone project bridged this gap by developing a web-based vaccination system specifically designed for infants and children in Barangay Babasit. Our system offered a centralized database, eliminating paper records and improving accessibility for barangay health workers. This centralized storage streamlined data management



BRIDGING THE GAP | 33

by offering functionalities for easy data entry, tracking, and retrieval. Furthermore, the system incorporated an SMS notification feature, tackling the challenge of missed vaccinations by reminding parents or guardians about upcoming schedules. This targeted approach allowed barangay health workers to identify children who might miss vaccinations and conduct outreach efforts in those specific cases. By bridging the gap between paper-based systems and a web-based solution with targeted functionalities, this project had the potential to significantly improve data management, promote adherence to vaccination schedules, and ultimately, increase vaccination rates within Barangay Babasit. This could have led to a healthier community for children and a reduced burden on the healthcare system.

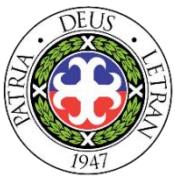


CHAPTER III

TECHNICAL BACKGROUND

3.1 OVERVIEW OF CURRENT TECHNOLOGIES TO BE USED IN THE SYSTEM

The barangay health workers who used the system were able to enter information from both infants/children and their parents. The information was stored directly in the database of parents and infants/children. The barangay health workers could perform queries to look up information about the infants/children or the parents and edit certain information if errors had been made during registration. The admin user, which was preferably the head BHW or the barangay secretary, could do all the functions mentioned earlier but with additional privileges. The admin user could add and remove user accounts into the system and choose what kind of access a certain account had in the system. The admin also had access to the delete function in the parents and infants/children database and also the SMS notification to send notification messages to parents regarding vaccination schedules.



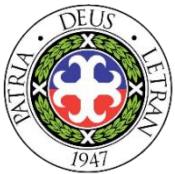
3.2 RESEARCH DESIGN

This study employed a quantitative methodology, meaning that the data was gathered, assessed, and handled with care. The researcher used this descriptive study question to identify the problems. Furthermore, the researchers employed a Likert scale to get information from survey participants utilizing printed questionnaires for BHWs and parents. This information was utilized to obtain raw data to address the research problem.

3.3 RESEARCH QUESTIONNAIRE

Vaccination among infants and children is important especially nowadays where novel viruses are surfacing at an alarming rate. The main concern of the BHWs is some parents are not always aware of vaccination schedules because they are busy with their respective work and are not home when the BHWs are making their rounds. Some parents are also not able to fully recall what vaccines are administered to their children and when it was administered. As a result, the following research questions are recognized:

- I. What is the Vaccine Monitoring System known for?
 - II. What are the ways to improve notifying the parents of upcoming vaccination drives in their barangay?
 - III. What are the ways to improve information keeping and monitoring of vaccination status of infants and children?
-



SAMPLE POPULATION AND SAMPLE SIZE | 36

3.4 SAMPLE POPULATION AND SAMPLE SIZE

80 parents and 25 barangay health workers in Babasit were the study's target sample population. The use of sampling techniques made it possible to gather the amount of data that could be gathered by gathering data from just a section of the population rather than the complete population.

3.5 SAMPLING PROCEDURE AND SAMPLING SELECTION

Because of the study's time constraints, not every parent in the barangay could be surveyed. Sampling, the process of selecting a representative sample, or small group of individuals, from a larger population in order to conduct research on the smaller group and draw accurate conclusions about the larger group based on sample data, was widely used by quantitative researchers.



3.6 CALENDAR OF ACTIVITIES

A Gantt chart was used to depict the activities on the calendar, which defined the task plan. This diagram shows the days that the developers planned to design and build our test as anticipated and chose to start this study in February.

Table 1 Gantt Chart of Activities

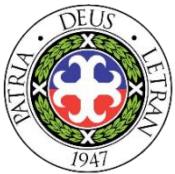
ACTIVITY/MONTH	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Title Approval											
Project Context											
Purpose and Description of the Project											
Objectives of the Study											
Significance of the Study											
Scope and Limitations											
Review of Related Literature											
Related Studies and/or Literature											
Synthesis											
Technical Background											
Finalizing Chapter 1 – 3											
Defense of Chapter 1 – 3											
Survey											
Requirement Analysis											
Requirement Documentation											
System Development											
Testing											
Implementation											
Evaluation Survey											
Finalizing Chapter 4 – 5											
Defense of Chapter 4 – 5											



3.7 RESOURCES

Table 2 Recommended Hardware/ Software Specification

Recommended Hardware Specification	Purpose
Computer with x86, x64 compatible processor running at 1 GHz or higher	For better performance of the system
Intel Core i3 or higher processor	To improve system's execution
DDR3/DDR4 4GB RAM or higher	To prevent the computer from slowing down while a browser is open
128GB – 1 TB SSD or HDD	For storing data
Keyboard	To allow users to input data
Mouse	For selecting and navigation
LCD Monitor	Display output
Smartphone or tablet with 4G or higher capability	For BHWs to access the system when they are gathering data in the field
Recommended Software Specifications	
Microsoft Windows 7 Operating System or higher	For running Microsoft Visual Studio Code
Microsoft Visual Studio Code	IDE to code HTML, JavaScript, PHP, and CSS
Google Chrome or similar browsers that support HTML, JavaScript, PHP, and CSS	For testing and running of the system
Android 5.0 or higher	To be able to use the mobile version of the system for portable use



CHAPTER IV

METHODOLOGY, RESULT, AND DISCUSSION

This chapter describes the software development methodology model used for project constraints and project assumptions. Data collection techniques to support system effectiveness.

This study employs a Waterfall software development methodology to systematically guide the development of the web-based vaccination monitoring system. The Waterfall model, a traditional approach, is characterized by its linear and sequential nature, where each phase must be completed before the next can begin. This methodology is particularly suitable for projects with well-defined requirements and minimal uncertainties, such as the development of a vaccination monitoring system. By adhering to this structured approach, the project ensures a methodical progression through the following phases: requirement gathering and analysis, system design, implementation, testing, deployment, and maintenance. This sequential process allows for a clear and organized development process, minimizing risks and ensuring the delivery of a high-quality system.



REQUIREMENT ANALYSIS| 40

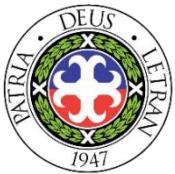
4.1 REQUIREMENT ANALYSIS

An extensive requirement analysis was carried out in order to efficiently design the web-based vaccination monitoring system. Barangay Health Workers (BHWs) were interviewed in-depth to learn about their unique requirements, problems, and system expectations. The development team learned a lot about the problems with the current manual system and the features that the new system should have by speaking with the main users directly.

In order to find inefficiencies and possible improvements, present manual processes were also observed, and existing immunization records and recommendations were analyzed. This required looking at how BHWs currently keep track of immunization records, determine which patients need to be vaccinated and interact with parents. The development team was able to pinpoint instances where automation and digitization may greatly increase accuracy and efficiency by comprehending the current workflow.

Who:

The observation that BHWs use traditional pen and paper when they go around collecting information about newborns in their barangay gave rise to the concept for this capstone project. The researchers interviewed the barangay health workers in barangay Babasit in order for this capstone project to be appropriate. What issues arise with manual information collection and storage was one of the researcher's inquiries.



REQUIREMENT ANALYSIS| 41

What:

By moving from traditional pen and paper to digital platforms where security features like password protection can be included, this capstone project seeks to enhance the collection and preservation of children's data. The system's ability to notify parents via SMS is one of its features. This feature can be used for vaccination drives and campaigns to raise awareness of the value of vaccines for children as well as to notify parents about their children's immunization schedules.

Where:

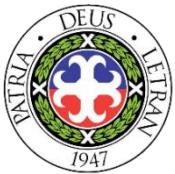
The interviews were conducted in the multi-purpose barangay hall of barangay Babasit.

When:

The researchers conducted the interview and survey questionnaire at the beginning of this capstone project and during the data-gathering process.

How:

The requirement analysis involved a combination of techniques, including in-depth interviews with BHWs and observation of current practices.



REQUIREMENT DOCUMENTATION | 42

4.2 REQUIREMENT DOCUMENTATION

The design and development phases were started by the development team, which also set the project requirements. The system's design was based on a questionnaire that the development team and BHW both agreed upon. The system was created to give BHWs an easy-to-use platform for managing immunization records and sending parents SMS reminders. User identification, child registration, vaccination scheduling, record management and SMS notifications are some of the system's primary functions.

4.3 DESIGN OF SOFTWARE, SYSTEM, PRODUCT, AND/OR PROCESS

To ensure user-friendliness, the proponents employed a Waterfall Software Development Life Cycle (SDLC). This traditional approach involved a sequential process, starting with requirement gathering and analysis, followed by system design, implementation, testing, deployment, and ongoing maintenance. By adhering to this structured methodology, the team effectively developed a reliable and efficient Vaccine Monitoring System.

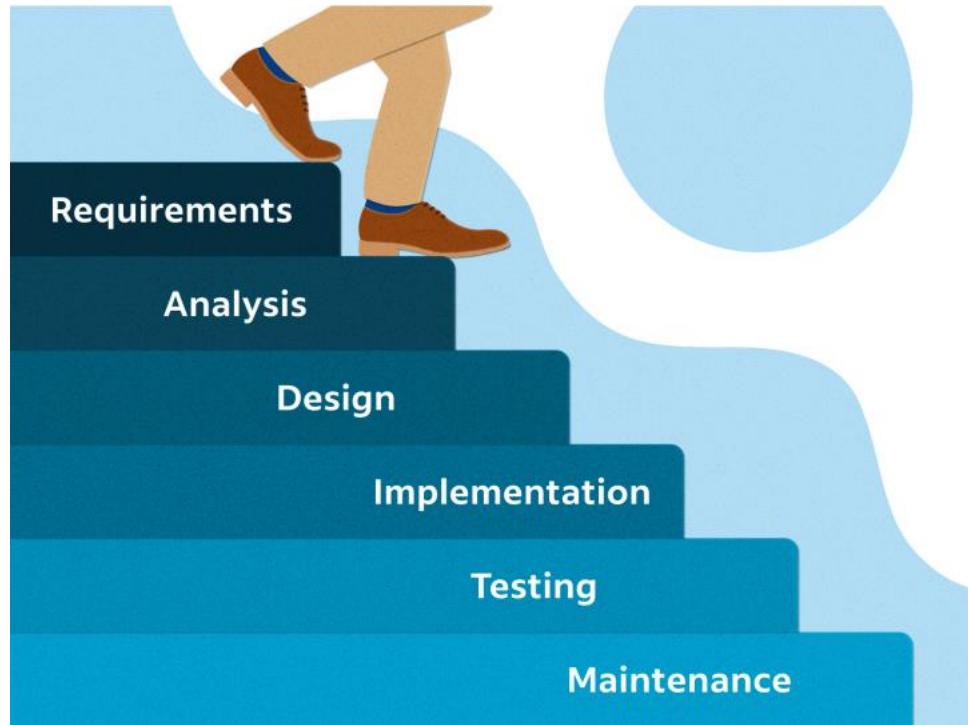
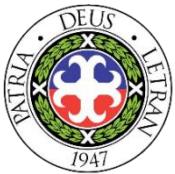


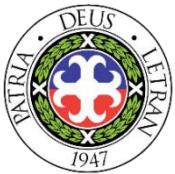
Figure 1 Waterfall SDLC

4.4 REQUIREMENTS DEFINITION AND ANALYSIS OF CONCEPT

The research team collaborated to establish a comprehensive plan for their capstone project. This involved defining the specific needs of the project's users, creating detailed flowcharts to visualize the system's processes, and setting a realistic timeline for completion. Additionally, they allocated the necessary technological resources and human resources to ensure the project's successful execution.

4.5 PLANNING OF SPRINTS

Researchers will review the backlog to identify and select the most critical tasks. They will then define clear goals for each selected task and outline the



CREATE AND IMPLEMENT | 44

necessary steps to achieve them. This process will involve drafting the system's manuscript and allocating resources for the development of new features.

4.6 CREATE AND IMPLEMENT

The researchers plan to rigorously test the system with the assistance of a dedicated system tester. This process will involve refining the codebase by removing unnecessary elements and incorporating additional features suggested by the capstone project advisor.

4.7 REVIEW AND MONITOR

The system underwent a comprehensive testing and monitoring phase to ensure its readiness for official implementation within the institution. This process involved running the system under various conditions to assess its performance and identify any potential issues.



USE CASE DIAGRAM | 45

4.8 USE CASE DIAGRAM

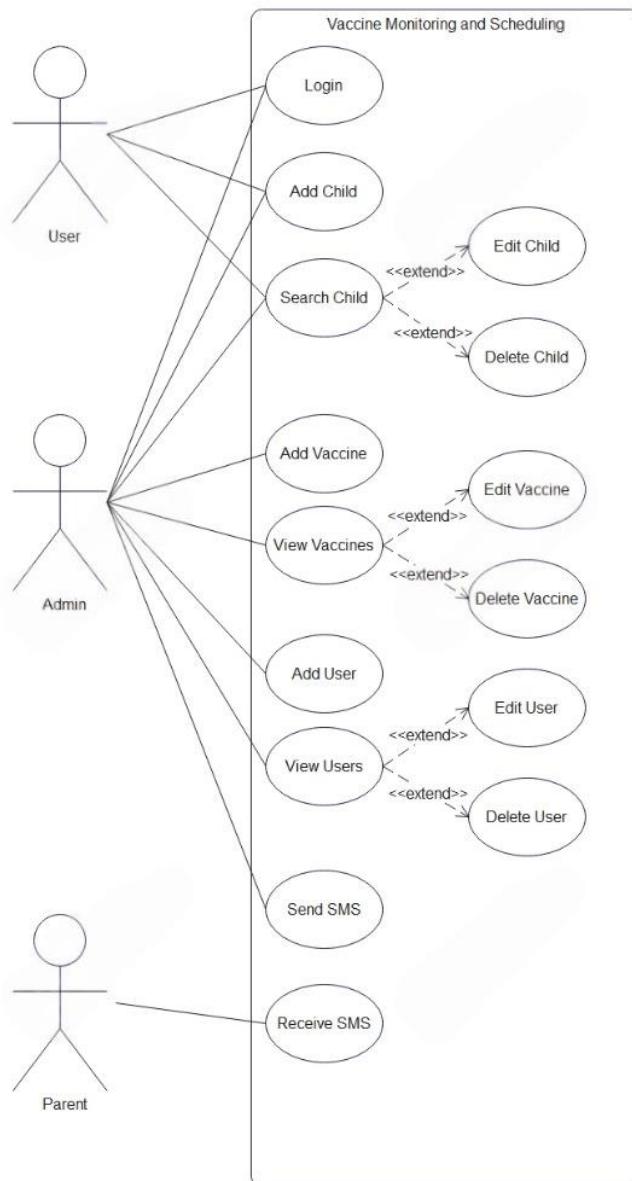


Figure 2 Use case diagram



4.9 ARCHITECTURAL FRAMEWORK OF THE SYSTEM

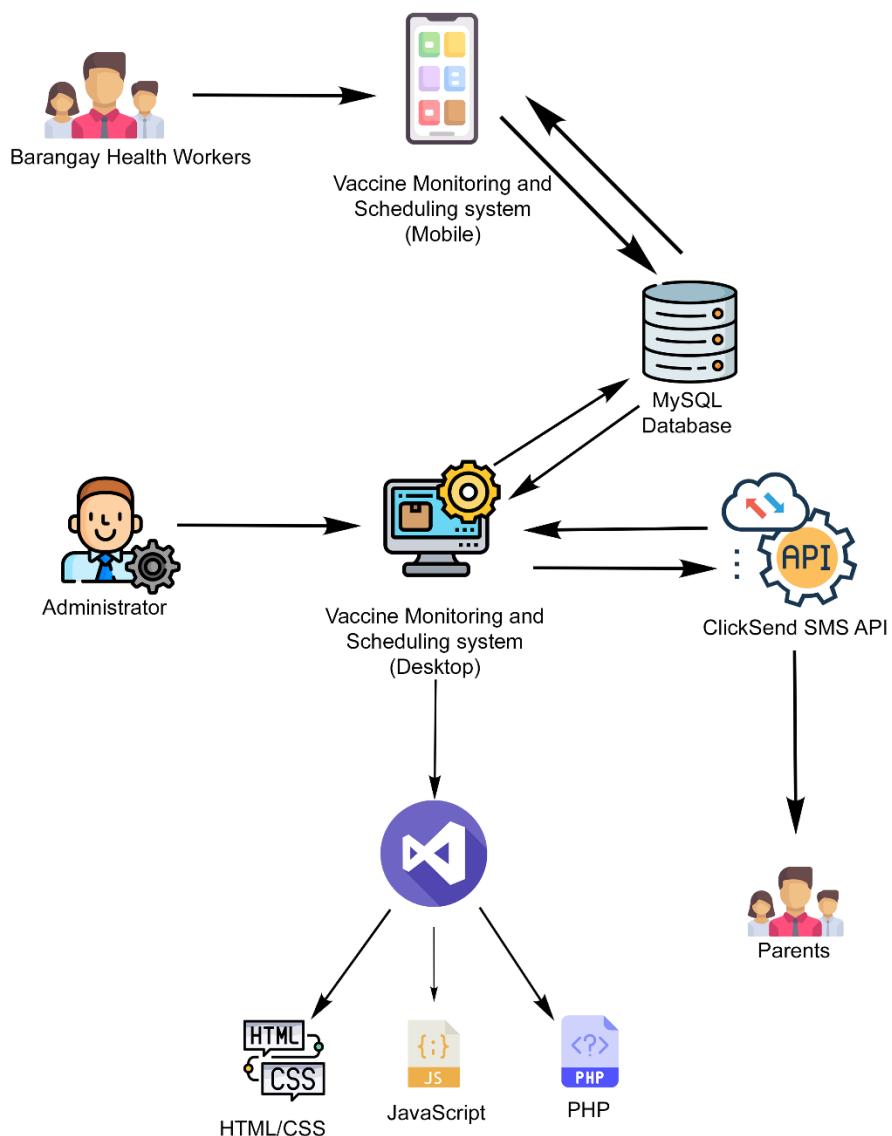
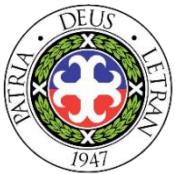


Figure 3 Architectural Framework of the System



4.10 DEPLOYMENT AND TESTING

To guarantee the project's success, the researchers thoroughly tested and assessed the Vaccine Monitoring System in order to get input and improve it into a dependable and useful platform for Barangay Babasit. These tests are carried out to confirm that it operates as intended for managing immunization schedules, creating reports, and tracking vaccines. To make sure the system works flawlessly, the development team ran a number of tests to identify and fix any possible problems. The system's effectiveness was assessed by the proponents using painstaking manual procedures carried out in Barangay Babasit.

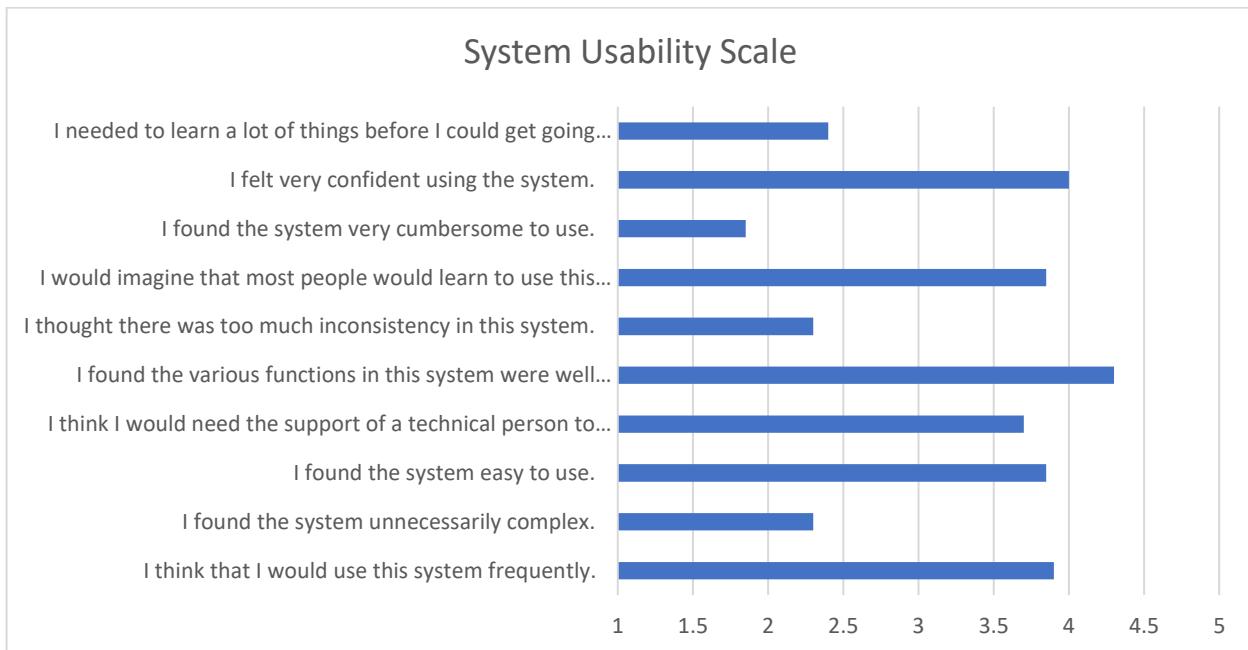
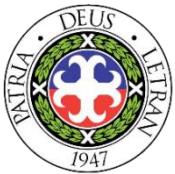


Chart 1 System Usability Scale



Analysis:

The System Usability Scale (SUS) results indicate that the system is generally user-friendly, with respondents showing confidence in using it and finding it easy to learn, as reflected in high scores for statements like "I felt very confident using the system" and "I would imagine that most people would learn to use this system very quickly." However, lower scores for items such as "I found the system very cumbersome to use" and "I thought there was too much inconsistency in this system" highlight areas for improvement, particularly in simplifying the interface and ensuring feature integration. While the overall feedback suggests a functional and accessible system, addressing these concerns could further enhance usability and user satisfaction.



PROTOTYPE DIAGRAM | 49

4.11 PROTOTYPE DIAGRAM

LOGIN PAGE

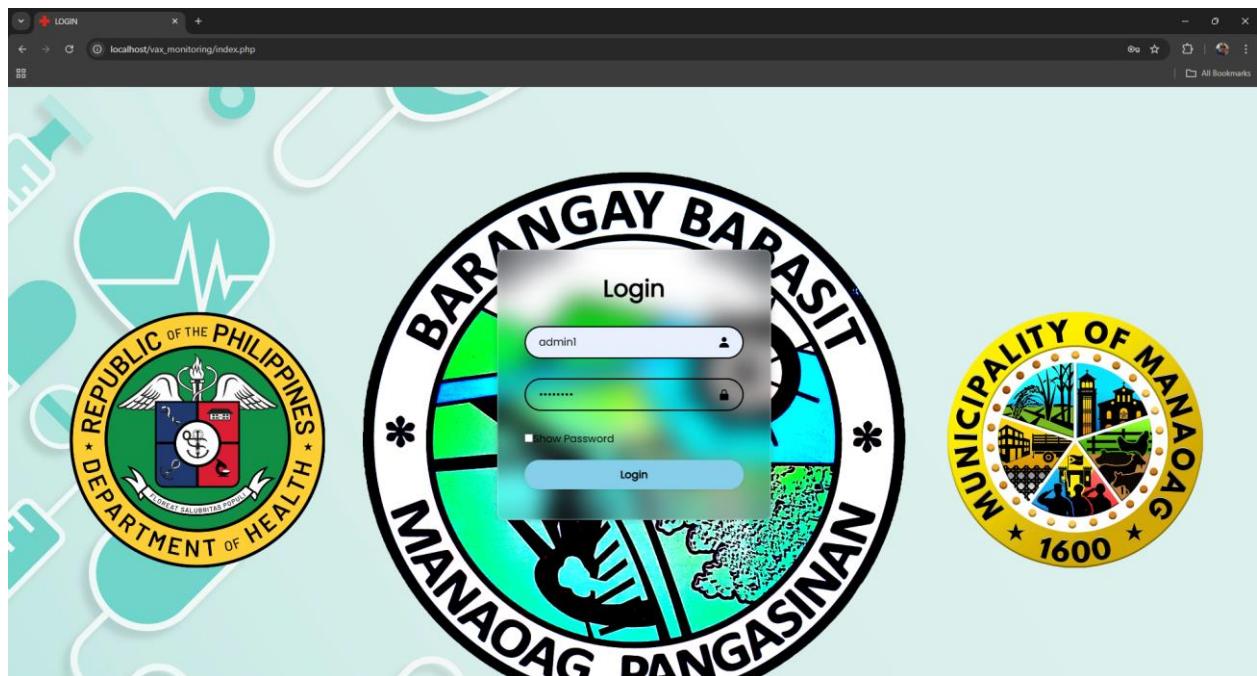


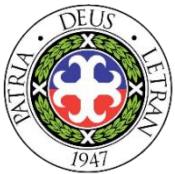
Figure 4 Login page



NAVIGATION



Figure 5 Navigation



SEARCH CHILD PAGE

Welcome, Admin admin!!

Home Search Child Add Child Admin Notifications Logout

Child Information

ID Number: 202405000001
Name: WILSON HIZON
Birth Date: 2024-01-11
Zone: 5
Father's Information
Father's Name: WILFREDO CIRIACO HIZON
Mother's Information
Mother's Name: ELIZABETH RED VELASQUEZ
Contact Number: 0909524289

Vaccination Records

Vaccine	Scheduled Date	Administered Date	Actions
BCG	2024-01-11	11 Jan 2024	<input type="button"/> Update
Hepa B	2024-01-11	11 Jan 2024	<input type="button"/> Update
Pentavalent	2024-02-26	26 Feb 2024	<input type="button"/> Update
Pentavalent	2024-03-26	dd --- yyyy	<input type="button"/> Update
Pentavalent	2024-04-26	dd --- yyyy	<input type="button"/> Update
OPV	2024-02-26	dd --- yyyy	<input type="button"/> Update
OPV	2024-03-26	dd --- yyyy	<input type="button"/> Update
OPV	2024-04-26	dd --- yyyy	<input type="button"/> Update
IPV	2024-04-26	dd --- yyyy	<input type="button"/> Update
IPV	2024-10-11	dd --- yyyy	<input type="button"/> Update
PCV	2024-02-26	dd --- yyyy	<input type="button"/> Update
	2024-02-26		

Figure 6 Search Child page



EDIT CHILD INFORMATION PAGE | 52

EDIT CHILD INFORMATION PAGE

Welcome, Admin admin!!

Home Search Child Add Child Admin Notifications Logout

Edit Child Information

First Name	WILSON
Last Name	HIZON
Birth Date	11 Jan 2024
Zone	5
Father's Information	
Father's First Name	WILFREDO
Father's Middle Name	CIRIACO
Father's Last Name	HIZON

Figure 7 Edit Child Information page



ADD CHILD INFORMATION PAGE

Figure 8 Add Child Information page



ADD NEW VACCINE PAGE | 54

ADD NEW VACCINE PAGE

Welcome, Admin admin!!

Home Search Child Add Child Admin Notifications Logout

Add New Vaccine

Vaccine Name:

Description (optional):

Schedules (Months after birth): Months after birth

[+ Add another vaccine](#)

Add Vaccine

Figure 9 Add New Vaccine page



[VIEW VACCINES PAGE | 55](#)

VIEW VACCINES PAGE

ID	Vaccine Name	Description	Actions
1	BCG	Bacillus Calmette-Guerin vaccine	Edit Delete
2	Hepo B	Hepatitis B vaccine	Edit Delete
3	Pentavalent	Diphtheria, Tetanus, Pertussis, Haemophilus influenzae type b, and Hepatitis B vaccines	Edit Delete
4	OPV	Oral Polio Vaccine	Edit Delete
5	IPV	Inactivated Polio Vaccine (2nd dose is in selected regions only)	Edit Delete
6	PCV	Pneumococcal Conjugate Vaccine	Edit Delete
7	MMR	Measles, Mumps, Rubella vaccine	Edit Delete

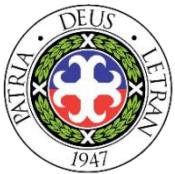
Figure 10 Add New Vaccine page



SEND SMS PAGE



Figure 11 Send SMS page



1.1 IMPLEMENTATION PLAN

The implementation strategy's main objective is to successfully monitor the vaccination monitoring system's performance and make sure that all of its functional requirements are satisfied. When used effectively, this method can enhance the entire vaccination process, expedite data collection, and improve immunization tracking. Nevertheless, despite meticulous planning, a number of issues need to be resolved during execution. Providing Barangay Babasit with a thorough immunization monitoring system for newborns and children is the project's goal. Accurate vaccination monitoring, transparent record-keeping, and simple access for barangay health workers are all guaranteed by the system's user-friendly architecture. This method ensures that the immunization procedure is dependable and effective.

1.2 IMPLEMENTATION RESULT

The particular technology employed, the security protocols in place, and the rates of user uptake all influence how the Barangay Babasit Vaccine Monitoring System is implemented. The system can improve accessibility and efficiency in scheduling vaccinations and tracking immunization records when it is properly built and secured. To guarantee the system's efficacy and credibility, issues including data privacy, possible abuse, and system dependability must be properly handled. Its long-term success depends on ongoing assessment and modifications. According to user feedback, the majority of users concur that the vaccine monitoring system makes



RESULTS AND DISCUSSION | 58

tracking vaccinations easier and increases the effectiveness of notifications, assisting parents in staying informed and assisting medical professionals in better scheduling. Compared to manual procedures, the system manages records more quickly and accurately, demonstrating its potential to improve healthcare services in the community.

4.12 RESULTS AND DISCUSSION

4.12.1 Statistical Treatment of Data

In analyzing the data collected from the survey, a five-point Likert scale was utilized to gauge the respondents' perceptions of the Barangay Babasit Vaccine Monitoring System. To interpret the results effectively, the weighted mean was computed for each survey question. This statistical approach allowed for a clear and concise summary of the responses, reflecting the overall agreement or disagreement with the statements provided. The weighted mean served as the basis for evaluating the system's usability, effectiveness, and acceptance among the respondents, providing valuable insights for assessing its impact and identifying areas for improvement.



4.12.2 Formula

Weighted Mean Formula

$$\text{Weighted mean} = \frac{\sum_{i=1}^n \text{weight}_n \times x_n}{\sum_{i=1}^n \text{weight}_n}$$

1 – Strongly Disagree	1.00 – 1.79
2 – Disagree	1.80 – 2.59
3 – Neutral	2.60 – 3.39
4 – Agree	3.40 – 4.19
5 – Strongly Agree	4.20 – 5.00

Range:

$$5 - 1 = 4$$

Interval:

$$4 \div 5 = 0.80$$

Figure 12 Weighted Mean formula

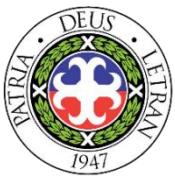


Table 3 Survey Results from BHW

STATEMENTS	SA	A	N	D	SD	S	WM	VI
1. The vaccine monitoring system is easy to navigate and understand.	11	4	10			25	4.04	AGREE
2. The layout of the system is user-friendly.	11	7	7			25	4.16	AGREE
3. I can quickly find the information I need within the system.	15	6	4			25	4.44	STRONGLY AGREE
4. The system helps me efficiently track children's vaccination schedules.	13	9	3			25	4.4	AGREE
5. The system reliably sends notifications to parents on time.	14	9	2			25	4.48	STRONGLY AGREE
6. The system operates without frequent technical issues.	13	8	4			25	4.36	STRONGLY AGREE
7. The SMS notification feature has improved communication with parents about their child's vaccinations.	17	6	2			25	4.6	AGREE
8. Parents respond positively to the SMS notifications about their child's vaccination schedule.	13	9	3			25	4.4	AGREE

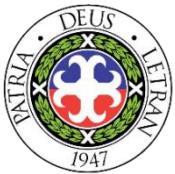


9. The system enables me to communicate vaccination schedules clearly to parents.	15	8	2			25	4.52	STRONGLY AGREE
10. The system has increased parents' engagement in keeping up with their child's vaccinations.	13	10	2			25	4.44	STRONGLY AGREE

Survey results from the 25 barangay health workers currently employed by Barangay Babasit reflect their evaluation of the vaccine monitoring system. The weighted means across the 10 statements show positive feedback, indicating the system's effectiveness and user satisfaction.

The **highest-rated statement** in the survey, with a weighted mean of 4.60, emphasizes the impact of the SMS notification feature in improving communication with parents about their child's vaccinations. This strong approval indicates that the feature is both effective and essential, addressing a critical need for timely and accurate communication in vaccination programs. The high score reflects the system's success in fostering trust and engagement between health workers and parents, ultimately promoting adherence to vaccination schedules. This result underscores the value of integrating modern communication tools in public health systems to bridge gaps in outreach and information dissemination.

The **lowest-rated statement**, with a weighted mean of 4.04, pertains to the ease of navigating and understanding the system. Although users generally agree with the statement, the relatively lower score suggests potential usability challenges.



This indicates that while the system is functional and beneficial, some users may encounter difficulties in navigating its features or understanding its layout. Addressing this area through targeted usability testing and interface improvements could enhance user satisfaction and reduce the learning curve for new users, making the system even more effective in its application.

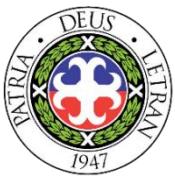
Analysis:

The overall high-weighted means demonstrate that the vaccine monitoring system meets the expectations of the barangay health workers. The areas that received "Strongly Agree" ratings reflect key strengths, such as improved communication, timely notifications, and reliable system performance. However, areas with slightly lower weighted means, such as system navigation and layout, suggest opportunities for further refinement to achieve a higher level of user satisfaction.



Table 4 Survey Results from the Parents

STATEMENTS	SA	A	N	D	SD	S	WM	VI
1. The SMS notifications received about upcoming vaccinations are clear and easy to understand.	27	41	9	1	2	80	4.125	AGREE
2. The SMS notifications provide all the necessary information about the upcoming vaccination.	26	40	11	1	2	80	4.088	AGREE
3. The SMS notifications include contact information in case I have questions.	29	34	13	1	3	80	4.063	AGREE
4. The reminders make it easier to plan and schedule vaccination appointments.	35	30	13	1	1	80	4.213	AGREE
5. The system's notifications reduce the chances of missing a vaccination appointment.	28	38	11	2	1	80	4.125	AGREE
6. I am satisfied with the SMS notifications for my child's vaccination schedule.	30	38	7	3	2	80	4.138	AGREE
7. The SMS notifications make me feel supported in keeping my child's vaccinations up to date.	36	30	8	3	3	80	4.163	AGREE
8. The notifications increase my trust in the vaccination process.	31	39	8	1	1	80	4.225	STRONGLY AGREE
9. I feel confident that the system protects my personal information.	30	37	11	1	1	80	4.175	AGREE

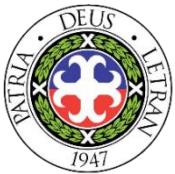


10. I appreciate the service provided by the vaccine monitoring system.	35	37	5	2	1	80	4.288	STRONGLY AGREE
---	----	----	---	---	---	----	-------	----------------

The table reflects the feedback of 80 parents from different zones of Barangay Babasit on the SMS notification feature of the vaccine monitoring system.

The **highest-rated statement**, with a weighted mean of 4.288, highlights the parents' appreciation for the service provided by the vaccine monitoring system. The positive reception likely stems from the system's ability to enhance the vaccination process through timely reminders and clear communication. This high score underscores the importance of providing reliable and user-friendly services, reinforcing trust and confidence in public health initiatives.

The **lowest-rated statement**, with a weighted mean of 4.063, pertains to the inclusion of contact information in the SMS notifications for follow-up questions. While this score still reflects general agreement, it points to a relatively minor area for improvement. Ensuring that all notifications include clear and accessible contact information could further enhance the system's effectiveness by providing parents with immediate avenues for addressing concerns or clarifying doubts. Addressing this feedback could help foster a more robust communication system and build stronger relationships between health workers and parents.



Analysis:

The results highlight a high level of acceptance and satisfaction among parents regarding the SMS notifications. The features most valued are the clarity of the notifications, their role in reducing missed appointments, and the overall support they provide for managing vaccination schedules. The highest-rated item reflects parents' overall appreciation for the system, underscoring its success in meeting their needs. However, slightly lower scores in areas such as providing contact information suggest that incorporating additional features or improving the existing ones could further enhance user satisfaction.



CHAPTER V

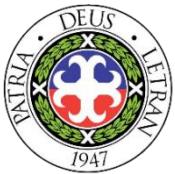
CONCLUSION AND RECOMMENDATION

1.1 CONCLUSION

The implementation of the vaccine monitoring system for Barangay Babasit has proven to be effective and well-received by its primary users—barangay health workers and parents. Both groups of respondents provided positive feedback, with the system being praised for its user-friendly design, reliable SMS notifications, and ability to enhance vaccination tracking and communication. The weighted mean results reflect high levels of agreement with statements about the system's functionality, usability, and contribution to improving vaccination compliance.

For barangay health workers, the system has simplified the process of monitoring vaccination schedules and communicating with parents, ensuring that critical information is accessible and manageable. For parents, the SMS notification feature has increased awareness and engagement and fostered trust in the vaccination process. These results highlight the system's role in bridging communication gaps and improving the overall efficiency of vaccination efforts.

While the system performed well in most areas, minor enhancements, such as incorporating additional features or improving specific functionalities, could further



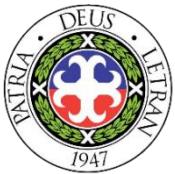
RECOMMENDATION | 67

elevate its effectiveness and user satisfaction. Overall, the vaccine monitoring system has successfully achieved its goals of improving immunization tracking, data gathering, and communication, ultimately contributing to the health and well-being of children in Barangay Babasit.

1.2 RECOMMENDATION

To further enhance the effectiveness and sustainability of the vaccine monitoring system in Barangay Babasit, the following recommendations are proposed:

1. Provide continuous training for barangay health workers to maximize their familiarity with the system's features. This will help address any usability issues and ensure consistent and effective system usage.
2. Include detailed analytics for vaccination coverage, and multilingual support to cater to diverse user needs.
3. Regularly monitor and upgrade the system to minimize technical issues and downtime. Investing in robust server support and cybersecurity measures will further ensure data security and system reliability.
4. Conduct community information campaigns to educate parents about the benefits of vaccination and the role of the system in ensuring timely immunization for their children. This can help foster trust and wider adoption of the system.



RECOMMENDATION | 68

5. Consider extending the system's implementation to neighboring barangays to broaden its impact and contribute to increased vaccination rates across the region.
6. Establish a schedule for regular system evaluations and feedback collection from users to identify areas for improvement and address concerns promptly.
7. Consider including all types of vaccines not just for infants but also for adults and senior citizens.
8. Include print table feature for better data analytics.



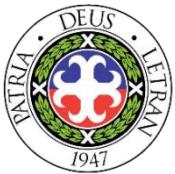
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EVALUATION TOOLS

Instructions: Please indicate your level of agreement with each statement by selecting one of the following options:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

STATEMENTS	5	4	3	2	1
1. The vaccine monitoring system is easy to navigate and understand.					
2. The layout of the system is user-friendly.					
3. I can quickly find the information I need within the system.					
4. The system helps me efficiently track children's vaccination schedules.					
5. The system reliably sends notifications to parents on time.					
6. The system operates without frequent technical issues.					
7. The SMS notification feature has improved communication with parents about their child's vaccinations.					
8. Parents respond positively to the SMS notifications about their child's vaccination schedule.					
9. The system enables me to communicate vaccination schedules clearly to parents.					
10. The system has increased parents' engagement in keeping up with their child's vaccinations.					



Instructions: Please indicate your level of agreement with each statement by selecting one of the following options:

1 = Strongly Disagree

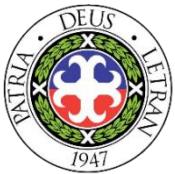
2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

STATEMENTS	5	4	3	2	1
1. The SMS notifications received about upcoming vaccinations are clear and easy to understand.					
2. The SMS notifications provide all the necessary information about the upcoming vaccination.					
3. The SMS notifications include contact information in case I have questions.					
4. The reminders make it easier to plan and schedule vaccination appointments.					
5. The system's notifications reduce the chances of missing a vaccination appointment.					
6. I am satisfied with the SMS notifications for my child's vaccination schedule.					
7. The SMS notifications make me feel supported in keeping my child's vaccinations up to date.					
8. The notifications increase my trust in the vaccination process.					
9. I feel confident that the system protects my personal information.					
10. I appreciate the service provided by the vaccine monitoring system.					



Instructions: Please indicate your level of agreement with each statement by selecting one of the following options:

1 = Strongly Disagree

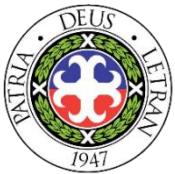
2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

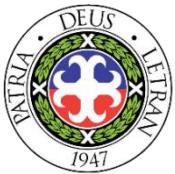
STATEMENTS	5	4	3	2	1
1. I think that I would use this system frequently.					
2. I found the system unnecessarily complex.					
3. I found the system easy to use.					
4. I think I would need the support of a technical person to be able to use this system.					
5. I found the various functions in this system were well integrated.					
6. I thought there was too much inconsistency in this system.					
7. I would imagine that most people would learn to use this system very quickly.					
8. I found the system very cumbersome to use.					
9. I felt very confident using the system.					
10. I needed to learn a lot of things before I could get going with this system.					



SOURCE CODE

index.php

```
<?php  
session_start();  
include 'db_connection.php';  
  
if (isset($_SESSION['username'])) {  
    if ($_SESSION['roles'] == 'admin') {  
        header("Location: admin.php");  
    } else {  
        header("Location: user.php");  
    }  
    exit;  
}  
  
$error = " ";  
  
if ($_SERVER['REQUEST_METHOD'] == 'POST') {  
    $username = $_POST['username'];  
    $pword = $_POST['pword'];
```



```
$username = $conn->real_escape_string($username);

$pword = $conn->real_escape_string($pword);

$sql = "SELECT * FROM users WHERE username='$username'";

$result = $conn->query($sql);

if ($result->num_rows == 1) {

    $user = $result->fetch_assoc();

    if (password_verify($pword, $user['pword'])) {

        $_SESSION['user_id'] = $user['id'];
        $_SESSION['username'] = $user['username'];
        $_SESSION['roles'] = $user['roles'];

        if ($user['roles'] == 'admin') {

            header("Location: admin.php");

        } else {

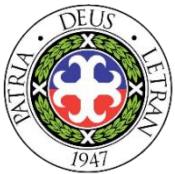
            header("Location: user.php");

        }

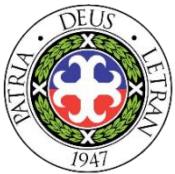
        exit;

    }

}
```



```
 } else {  
  
    $error = "Invalid username or password";  
  
}  
  
} else {  
  
    $error = "Invalid username or password";  
  
}  
  
}  
  
  
$conn->close();  
  
?>  
  
  
  
<!DOCTYPE html>  
  
<html>  
  
    <head>  
  
        <meta charset="UTF-8">  
  
        <meta http-equiv="X-UA-Compatible" content="IE=edge">  
  
        <meta name="viewport" content="width=device-width, initial-scale=1.0">  
  
        <title>LOGIN</title>  
  
        <link rel="icon" type="image/x-icon" href="redcross.png">  
  
        <link rel="stylesheet" href="style.css">
```



```
<link href='https://unpkg.com/boxicons@2.1.4/css/boxicons.min.css' rel='stylesheet'>

<link href='https://fonts.googleapis.com/css?family=Poppins' rel='stylesheet'>

<style>

body {

background: url('bg.png');

background-size: cover;

}

</style>

</head>

<body>

<div class="wrapper">

<form action="" method="POST">

<h1>Login</h1>

<div class="input-box">

<input type="text" placeholder="Username" id="username" name="username" required>

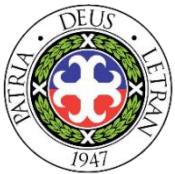
<i class='bx bxs-user'></i>

</div>

<div class="input-box">

<input type="password" placeholder="Password" id="pword" name="pword" required>


```



```
<i class='bx bxs-lock-alt'></i>

</div>

<div class="showpass">

    <label><input type="checkbox" onclick="showPword()">Show
    Password</label>

</div>

<script>

    function showPword() {

        var x = document.getElementById("pword");

        if (x.type === "password") {

            x.type = "text";

        } else {

            x.type = "password";

        }

    }

</script>

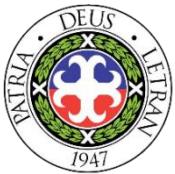
<button type="submit" class="btn">Login</button>

</form>

<?php if ($error != ""): ?>

<script type="text/javascript">

    alert("<?php echo $error; ?>")
```



```
</script>

<?php endif; ?>

</div>

</body>

</html>
```

add_child.php

```
<?php

include 'db_connection.php';

$vaccine_query = "SELECT v.vaccine_id, v.vaccine_name, vs.schedule_id,
vs.months_after_birth

FROM vaccines v

JOIN vaccine_schedules vs ON v.vaccine_id = vs.vaccine_id";

$vaccines = $conn->query($vaccine_query);

?>
```



SOURCE CODE | 80

```
<!DOCTYPE html>

<html>

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>ADD CHILD</title>

    <link rel="icon" type="image/x-icon" href="redcross.png">

    <link href="https://fonts.googleapis.com/css2?family=Material+Symbols+Outlined:opsz,wght,FILL,GRAD@24,400,0,0" />

    <link href='https://fonts.googleapis.com/css?family=Poppins' rel='stylesheet'>

    <style>

        body {

            font-family: 'Poppins', sans-serif;

            margin: 0;

            padding: 0;

            background-color: #f4f4f9;

        }

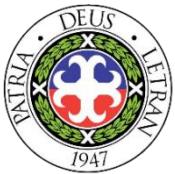
        .form-container {

            max-width: 700px;

        }

    </style>

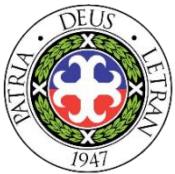

```



```
margin: 50px auto;  
padding: 20px 30px;  
border-radius: 10px;  
background: transparent;  
border: 2px solid rgba(255, 255, 255, .2);  
backdrop-filter: blur(100px);  
box-shadow: 0 0 10px rgba(0, 0, 0, .2);  
color: black;  
}  
  
h2, h3 {
```

```
text-align: center;  
color: black;  
margin-bottom: 20px;  
}
```

```
label {  
font-weight: 600;  
margin-bottom: 5px;  
display: block;  
color: black;
```



}

```
input[type="text"], input[type="date"], input[type="file"], input[type="tel"], select {  
    width: 100%;  
    padding: 10px;  
    margin: 5px 0 15px;  
    border-radius: 5px;  
    border: 1px solid #ccc;  
    font-size: 14px;  
    text-transform: uppercase;  
}  
  
table {
```

```
width: 100%;  
border-collapse: collapse;  
margin: 20px 0;  
}  
  
table th, table td {
```

```
border: 1px solid #ddd;  
padding: 8px;
```

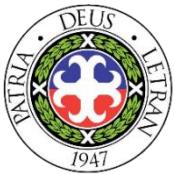


```
text-align: center;  
}  
  
table th {
```

```
background-color: #f2f2f2;  
font-weight: 600;  
color: black;  
}
```

```
.button-group {  
text-align: center;  
margin-top: 20px;  
}
```

```
button {  
width: 150px;  
padding: 10px;  
border: none;  
border-radius: 5px;  
background-color: #4caf50;  
color: white;
```

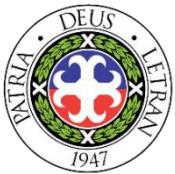


```
font-size: 16px;  
cursor: pointer;  
transition: background-color 0.3s;  
}  
  
button:hover {
```

```
background-color: #45a049;  
}
```

```
.icon {  
font-size: 24px;  
vertical-align: middle;  
margin-right: 5px;  
}
```

```
video, canvas {  
display: block;  
margin: 20px auto;  
max-width: 100%;  
border: 1px solid #ddd;  
border-radius: 5px;
```



}

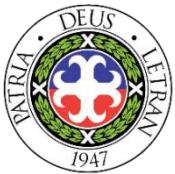
```
#captureBtn {  
    margin-top: 10px;  
    width: auto;  
    padding: 8px 15px;  
    background-color: #f58220;  
    color: white;  
    border: none;  
    border-radius: 5px;  
    font-size: 14px;  
    cursor: pointer;  
}
```

```
#captureBtn:hover {  
    background-color: #d96d1a;  
}
```

</style>

<script>

```
function toUpperCase(input) {  
    input.value = input.value.toUpperCase();
```



```
    }

</script>

</head>

<body>

<div class="form-container">

    <h2>Add Child Information</h2>

    <form      id="childForm"      action="save_child.php"      method="POST"
enctype="multipart/form-data">

        <h3>Child Information</h3>

        <label>Last Name</label>

        <input type="text" name="last_name" oninput="toUpperCase(this)" required>

        <label>First Name</label>

        <input type="text" name="first_name" oninput="toUpperCase(this)" required>

        <label>Middle Name</label>

        <input type="text" name="middle_name" oninput="toUpperCase(this)" required>

        <label>Birthdate</label>

        <input type="date" name="birth_date" required>

        <label>Zone Number</label>

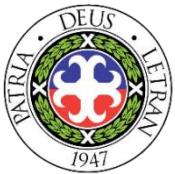
        <select name="zone_num" required>

            <option value="">-- Select Zone --</option>

            <option value="01">01</option>
```



```
<option value="02">02</option>
<option value="03">03</option>
<option value="04">04</option>
<option value="05">05</option>
<option value="06">06</option>
<option value="07">07</option>
</select>
<h3>Father's Information</h3>
<label>Last Name</label>
<input type="text" name="f_last_name" oninput="toUpperCase(this)" required>
<label>First Name</label>
<input type="text" name="f_first_name" oninput="toUpperCase(this)" required>
<label>Middle Name</label>
<input type="text" name="f_middle_name" oninput="toUpperCase(this)" required>
<h3>Mother's Information</h3>
<label>Last Name</label>
<input type="text" name="m_last_name" oninput="toUpperCase(this)" required>
<label>First Name</label>
```



```
<input type="text" name="m_first_name" oninput="toUpperCase(this)" required>

<label>Middle Name</label>

<input type="text" name="m_middle_name" oninput="toUpperCase(this)" required>

<label>Contact Number</label>

<input type="tel" name="contact_num" required>

<h3>Vaccination Records</h3>

<table>

    <thead>

        <tr>

            <th>Vaccine Name</th>

            <th>Months After Birth</th>

            <th>Administered Date</th>

        </tr>

    </thead>

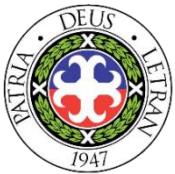
    <tbody>

        <?php if ($vaccines->num_rows > 0): ?>

        <?php while ($row = $vaccines->fetch_assoc()): ?>

            <tr>

                <td><?= htmlspecialchars($row['vaccine_name']) ?></td>
```



```
<td><?= htmlspecialchars($row['months_after_birth']) ?>
months</td>

<td>
    <input type="hidden" name="schedule_ids[]" value="<?=
$row['schedule_id'] ?>">
    <input type="hidden" name="vaccine_ids[]" value="<?=
$row['vaccine_id'] ?>">
    <input type="date" name="administered_dates[]" placeholder="yyyy-mm-dd">
</td>
</tr>

<?php endwhile; ?>
<?php else: ?>
    <tr><td colspan="3">No vaccines available.</td></tr>
<?php endif; ?>
</tbody>
</table>

<h3>Upload Photo</h3>
<input type="file" id="child_photo" name="child_photo" accept="image/*">

<h3>Take a Picture</h3>
<video id="video" autoplay></video>
<button type="button" id="captureBtn">
```



```
<span class="material-symbols-outlined icon">photo_camera</span>
Capture Photo

</button>

<canvas id="canvas" style="display:none;"></canvas>

<input type="hidden" name="photo_data" id="photo_data">

<div class="button-group">
  <button type="submit">
    <span class="material-symbols-outlined icon">save</span>
    Save
  </button>
</div>

</form>

</div>

<script>
  const video = document.getElementById('video');

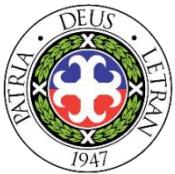
  const canvas = document.getElementById('canvas');

  const captureBtn = document.getElementById('captureBtn');

  const photoDataInput = document.getElementById('photo_data');

  const form = document.getElementById('childForm');

  const submitBtn = document.getElementById('submitBtn');
</script>
```



```
const photoInput = document.getElementById('child_photo');

if (navigator.mediaDevices && navigator.mediaDevices.getUserMedia){

    navigator.mediaDevices.getUserMedia({video:true}).then(function(stream) {

        video.srcObject = stream;

    });

}

captureBtn.addEventListener('click', function(){

    const context = canvas.getContext('2d');

    canvas.width = video.videoWidth;

    canvas.height = video.videoHeight;

    context.drawImage(video, 0, 0, canvas.width, canvas.height);

    const dataURL = canvas.toDataURL('image/png');

    photoDataInput.value = dataURL;

    alert('Photo Captured!');

});

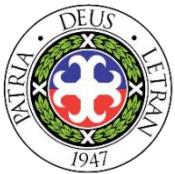
form.addEventListener('submit', function(event){

    if (!photoInput.value && !photoDataInput.value){

        event.preventDefault();

    }

});
```



```
    alert('Please upload or take photo');

}

});

<?php if ($_SERVER['REQUEST_METHOD'] == 'POST'): ?>

<?php if ($success_message): ?>

    showMessage("<?php echo $success_message; ?>");

    clearForm();

<?php endif; ?>

<?php if ($error_message): ?>

    showMessage("<?php echo $error_message; ?>");

    <?php endif; ?>

    <?php endif; ?>

</script>

</body>

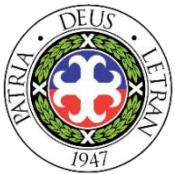
</html>

search_child.php

<!DOCTYPE html>

<html>

<head>
```



```
<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>SEARCH CHILD</title>

<link rel="icon" type="image/x-icon" href="redcross.png">

<link href="https://fonts.googleapis.com/css2?family=Material+Symbols+Outlined:opsz,wght,FILL,GRAD@24,400,0,0" /> rel="stylesheet"

<link href='https://fonts.googleapis.com/css?family=Poppins' rel='stylesheet'>

<style>

body {

    font-family: "Poppins", sans-serif;

    background-color: #f8f8f8;

    margin: 0;

    display: flex;

    flex-direction: column;

    align-items: center;

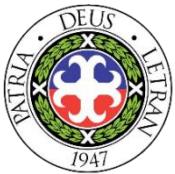
}

.header-container {

    display: flex;

    flex-direction: column;

}
```

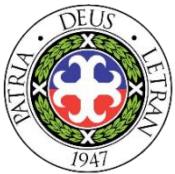


```
align-items: center;  
width: 100%;  
}
```

```
h1 {  
text-align: center;  
margin: 20px 0;  
color: white;  
}
```

```
.search-container {  
position: relative;  
width: 100%;  
max-width: 400px;  
}
```

```
.search {  
display: flex;  
align-items: center;  
padding: 10px;  
border-radius: 20px;
```



```
background: #f6f6f6;  
box-shadow: 0 0 2px rgba(0, 0, 0, 0.75);  
}
```

```
.search-input {  
    font-size: 14px;  
    font-family: "Poppins";  
    color: #333333;  
    margin-left: 10px;  
    outline: none;  
    border: none;  
    background: transparent;  
    flex-grow: 1;  
}
```

```
.search-input::placeholder {  
    color: rgba(0, 0, 0, 0.5);  
}
```

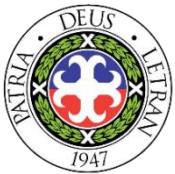
```
.search-icon {  
    color: rgba(0, 0, 0, 0.5);
```



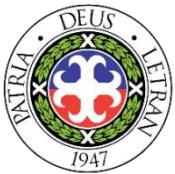
}

```
.search-results {  
    position: absolute;  
    top: 100%;  
    left: 0;  
    width: 100%;  
    border: none;  
    border-radius: 5px;  
    box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);  
    background: #fff;  
    z-index: 1000;  
    max-height: 200px;  
    overflow-y: auto;  
}
```

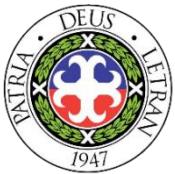
```
.search-results div {  
    padding: 8px;  
    cursor: pointer;  
}
```



```
.search-results div:hover {  
    background: #f0f0f0;  
}  
  
.child-info, .vaccination-records {  
    margin-top: 20px;  
    width: 100%;  
}  
  
.container {  
    display: flex;  
    flex-wrap: wrap;  
    justify-content: space-between;  
    gap: 20px;  
    margin-top: 20px;  
    width: 106%;  
    max-width: 1200px;  
    background: transparent;  
    border: 2px solid rgba(255, 255, 255, .2);  
    backdrop-filter: blur(60px);  
    box-shadow: 0 0 10px rgba(0, 0, 0, .2);  
}
```



```
color: black;  
}  
  
.child-info, .vaccination-records {  
    flex: 1;  
    min-width: 300px;  
    max-width: 48%;  
}  
  
@media screen and (max-width: 768px) {  
    .container {  
        flex-direction: column;  
        align-items: center;  
    }  
  
.child-info, .vaccination-records {  
    max-width: 100%;  
}  
}  
  
</style>  
<script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
```



```
</head>

<body>

    <div class="header-container">

        <h1>Search Child</h1>

        <div class="search-container">

            <div class="search">

                <span class="search-icon material-symbols-outlined">search</span>

                <input type="text" class="search-input" id="searchBar" placeholder="Search" autocomplete="off">

            </div>

            <div id="searchResults" class="search-results"></div>

        </div>

    </div>

    <div class="container">

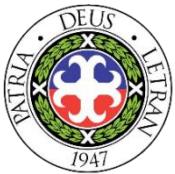
        <div id="childInfo" class="child-info"></div>

        <div id="vaccinationRecords" class="vaccination-records"></div>

    </div>

<script>

$(document).ready(function() {
```



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SOURCE CODE| 100

```
$('#searchBar').on('input', function(){

    const query = $(this).val();

    if (query.length > 1) {

        $.ajax({

            url: 'search_child_handler.php',
            method: 'POST',
            data: { query },
            success: function(data) {

                $('#searchResults').html(data);

            }
        });

    } else {

        $('#searchResults').html('');

    }
});

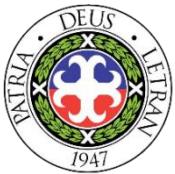

$(document).on('click', '.search-result', function () {

    const childId = $(this).data('id');

    $('#searchBar').val($(this).text());

    $('#searchResults').html('');


```



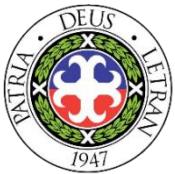
Colegio de San Juan de Letran - Manaoag

Castro St. Poblacion, Manaoag, Pangasinan, Philippines

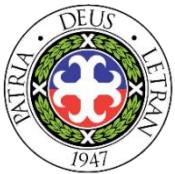


SOURCE CODE| 101

```
$.ajax({  
    url: 'fetch_child_data.php',  
    method: 'POST',  
    data: { childId },  
    success: function (data) {  
        const result = JSON.parse(data);  
        $('#childInfo').html(result.childInfo);  
        $('#vaccinationRecords').html(result.vaccinationRecords);  
    }  
});  
  
});  
  
$(document).on('click', '.update-record', function () {  
    const recordId = $(this).data('record-id');  
    const newDate = $(this).closest('tr').find('.administered-date').val();  
  
    if (newDate) {  
        $.ajax({  
            url: 'update_vaccination_record.php',  
            method: 'POST',  
            data: { record_id: recordId, newDate: newDate },  
        });  
    }  
});
```



```
success: function (response) {  
  
    const res = JSON.parse(response);  
  
    alert(res.message);  
  
    location.reload();  
  
},  
  
error: function () {  
  
    alert("Failed to update vaccination record.");  
  
},  
  
});  
  
} else {  
  
    alert("Please select a valid date.");  
  
}  
  
});  
  
});  
  
</script>  
  
</body>  
  
</html>  
  
send_sms.php  
  
<?php  
  
include 'db_connection.php';
```



```
$responseMessage = "";

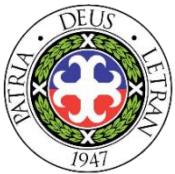
if ($_SERVER["REQUEST_METHOD"] == "POST") {

    $username = "wlvhizon1996@gmail.com",
    $password = "5F63561B-633C-68AE-FC4D-BDAA10ADCD4E";

    $to = htmlspecialchars($_POST["to"]);
    $body = htmlspecialchars($_POST["body"]);

    if (!empty($to) && !empty($body)) {
        $authHeader = "Basic " . base64_encode("$username:$password");

        $data = [
            "messages" => [
                [
                    "source" => "php",
                    "body" => $body,
                    "to" => $to
                ]
            ]
        ];
    }
}
```



```
$jsonData = json_encode($data);

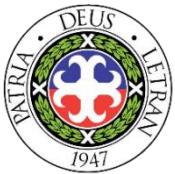
$ch = curl_init('https://rest.clicksend.com/v3/sms/send');

curl_setopt($ch, CURLOPT_RETURNTRANSFER, true);
curl_setopt($ch, CURLOPT_HTTPHEADER, [
    "Authorization: $authHeader",
    "Content-Type: application/json"
]);
curl_setopt($ch, CURLOPT_POST, true);
curl_setopt($ch, CURLOPT_POSTFIELDS, $jsonData);

$response = curl_exec($ch);

if (curl_errno($ch)) {
    $responseMessage = "Error: " . curl_error($ch);
} else {

    $responseData = json_decode($response, true);
```



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SOURCE CODE| 105

```
if ($responseData['http_code'] == 200 &&
isset($responseData['data']['messages'][0])) {

    $messageData = $responseData['data']['messages'][0];

    $message_id = $messageData['message_id'];
    $recipient = $messageData['to'];
    $status = $messageData['status'];
    $message_price = $messageData['message_price'];
    $country = $messageData['country'];
    $carrier = $messageData['carrier'];
    $queued_at = date('Y-m-d H:i:s', $messageData['date']);

    $stmt = $conn->prepare("INSERT INTO sms_history (message_id,
recipient_phone, message_body, total_price, country, carrier, status, queued_at)
VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?)");

    $stmt->bind_param("ssssssss", $message_id, $recipient, $body,
$message_price, $country, $carrier, $status, $queued_at);

    if ($stmt->execute()) {
        $responseMessage = "Message sent and stored successfully!";
    } else {
        $responseMessage = "Message sent but failed to store in the database:
" . $stmt->error;
    }
}
```



}

```
$stmt->close();

} else {

    $responseMessage      =      "Failed      to      send      SMS:      "
$responseData['response_msg'];

}

}

curl_close($ch);

} else {

    $responseMessage = "Please fill out all fields./";

}

?>

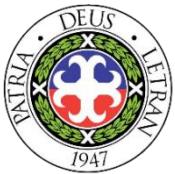
<!DOCTYPE html>

<html>

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">
```



```
<title>Send SMS</title>

<link href="https://fonts.googleapis.com/css?family=Poppins" rel="stylesheet">

<style>

body {

    font-family: 'Poppins', sans-serif;

    background-color: #f9f9f9;

    margin: 0;

    padding: 20px;

    display: flex;

    justify-content: center;

    align-items: center;

    height: 100vh;

}

.container {

    padding: 20px 30px;

    border-radius: 10px;

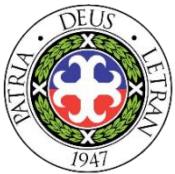
    width: 400px;

    text-align: center;

    background: transparent;

    border: 2px solid rgba(255, 255, 255, .2);

    backdrop-filter: blur(100px);
```



```
box-shadow: 0 0 10px rgba(0, 0, 0, .2);
```

```
color: black;
```

```
}
```

```
h2 {
```

```
margin-bottom: 20px;
```

```
color: black;
```

```
}
```

```
input, textarea {
```

```
width: 100%;
```

```
padding: 10px;
```

```
margin: 10px 0;
```

```
border: 1px solid #ddd;
```

```
border-radius: 5px;
```

```
box-sizing: border-box;
```

```
}
```

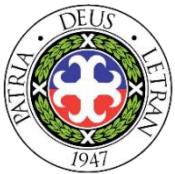
```
button {
```

```
padding: 10px 20px;
```

```
border: none;
```

```
background-color: #4CAF50;
```

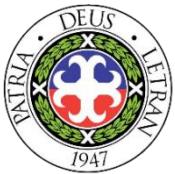
```
color: white;
```



```
border-radius: 5px;  
cursor: pointer;  
width: 100%;  
}  
  
button:hover {  
background-color: #45a049;  
}  
  
.response {  
margin-top: 20px;  
font-size: 0.9em;  
}  
  
</style>  
  
</head>  
  
<body>  
  
<div class="container">  
  
<h2>Send SMS</h2>  
  
<form method="POST" action="">  
  
    <input type="text" name="to" placeholder="Recipient's Phone Number (e.g.,  
+639XXXXXXXX)" required>  
  
    <textarea name="body" placeholder="Enter your message here" rows="5"  
required></textarea>  
  
    <button type="submit">Send Message</button>  


---


```



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SOURCE CODE| 110

```
</form>

<?php if (!empty($responseMessage)): ?>

    <div class="response"><?php echo $responseMessage; ?></div>

<?php endif; ?>

</div>

</body>

</html>
```



IMPLEMENTATION



Implementation and demonstration of the Web-based Vaccine Monitoring and Scheduling System to the Barangay Health Workers of Barangay Babasit.



Colegio de San Juan de Letran - Manaoag

Castro St. Poblacion, Manaoag, Pangasinan, Philippines



SURVEY | 112

SURVEY



Data Gathering and evaluation from Barangay Health Workers of Barangay Babasit.



Survey of parents from different zones of Barangay Babasit



APPENDIX A

February 28, 2024

Capt. Salvador Javillona

Barangay Captain

Brgy. Babasit,

Manaoag, Pangasinan

Dear Sir:

We, the Researchers, are currently working on our study with the title "**A Comprehensive Vaccine Coverage Approach using Web-based Immunization monitoring System for Infants and Children in Barangay Babasit**" in partial fulfillment for the subject **Capstone Project 1**.

In line here to, we are humbly asking for your permission to please allow us to conduct an interview among the Barangay Health Workers of Barangay Babasit. Rest assured that whatever information we gather will be treated with utmost confidentiality and it will only be used for the completion of the study. Attached with this letter is the instrumentation for the said study.

We look forward to your favorable response. Thank you and God Bless!

Respectfully yours,

Cendaña, Marie Joy Serafica

Evangelista, Kristine Rose Tequiro

Hizon, Wilson Laurence Velasquez

Isip, Christian Nicole Ayson

Laca, Joan May Casupanan

Martin, Jastin Hinaut

Noted:

MR. EUGENE A. ESTACIO

Research Adviser

Recommending Approval:

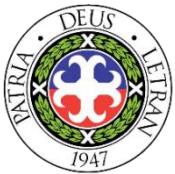
MRS. MARIA ALEXANDRIA R. DELA REYNA, LPT

OIC, Research and Publication Department

Approved:

MR. JOHN IVAN S. CLEOFE, LPT, MST

Vice President for Academics/ Dean of College



APPENDIX B

February 28, 2024

MR. JOHN IVAN S. CLEOFE, LPT, MST
Vice President for Academics/ Dean of College

Dear Sir:

Greetings in the name of the Lord!

We, the Researchers, are currently working on our study with the "**A Comprehensive Vaccine Coverage Approach using Web-based Immunization monitoring System for Infants and Children in Barangay Babasit**" in partial fulfillment for the subject **Capstone 1**.

In line here to, we are humbly asking for your permission to please allow us to conduct an interview among the Barangay Health Workers of Barangay Babasit. Rest assured that whatever information we gather will be treated with utmost confidentiality and it will only be used for the completion of the study. Attached with this letter is the instrumentation for the said study.

We look forward to your favorable response. Thank you and God Bless!

Respectfully yours,

Cendaña, Marie Joy Serafica

Evangelista, Kristine Rose Tequiro

Hizon, Wilson Laurence Velasquez

Isip, Christian Nicole Ayson

Laca, Joan May Casupanan

Martin, Jastin Hinaut

Noted:

MR. EUGENE A. ESTACIO

Research Adviser

Recommending Approval:

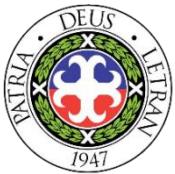
MRS. MARIA ALEXANDRIA R. DELA REYNA, LPT

OIC, Research and Publication Department

Approved:

MR. JOHN IVAN S. CLEOFE, LPT, MST

Vice President for Academics/ Dean of College



Colegio de San Juan de Letran - Manaoag

Castro St. Poblacion, Manaoag, Pangasinan, Philippines



Resource Person/s| 115

Resource Person/s:

MR. EUGENE A. ESTACIO

Capstone Adviser

BSIT – 4 Block 2

Department of Information and Computing Studies

Colegio de San Juan de Letran – Manaoag

Relevant Source Code:

PHP – Backend

HTML/CSS – Frontend

JavaScript- Functions for the button, menu bar, navigation bar, etc.

ClickSend – SMS API

MySQL & XAMPP– Database

System and Manuscript:

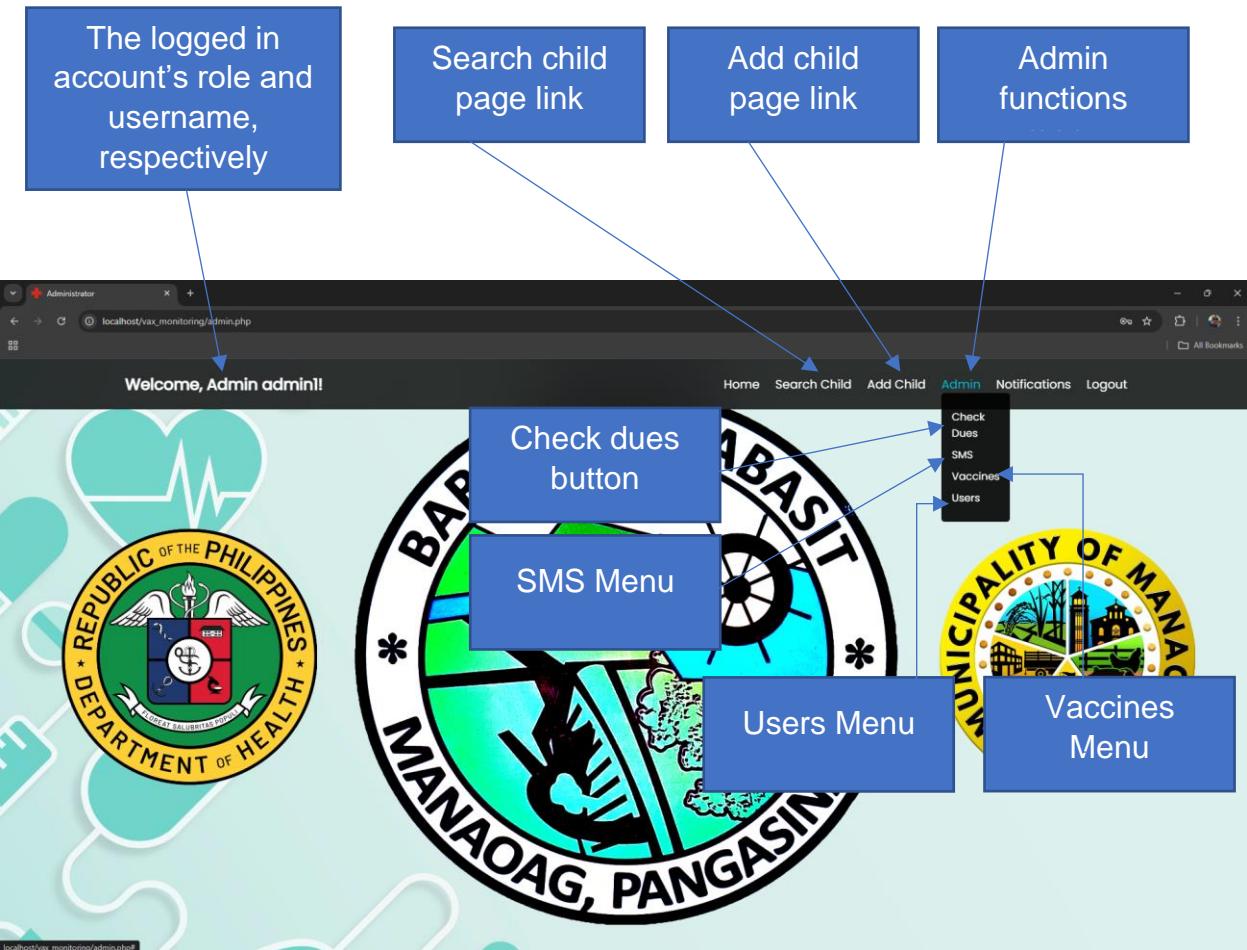
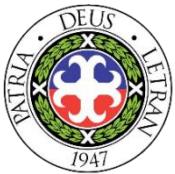
<https://github.com/wlhizon/Vax-Monitoring-and-Scheduling-System.git>



USER'S GUIDE

Users can enter their username and password in the login page

The screenshot shows a web browser window with a 'LOGIN' tab open. The URL bar displays 'localhost/vax_monitoring/index.php'. The main content area features a light blue background with various medical icons like a heart, a stethoscope, and a syringe. Overlaid on this background is a large, semi-transparent watermark of the 'BARANGAY BARASIT MANAOAG PANGASINAN' logo. This logo is circular with a green outer ring containing the text 'BARANGAY BARASIT' at the top and 'MANAOAG PANGASINAN' at the bottom, separated by an asterisk. Inside the ring is a stylized hand holding a globe. To the left of the watermark is the 'DEPARTMENT OF HEALTH' logo of the Philippines, which is circular with a green and yellow color scheme. To the right is the 'MUNICIPALITY OF MANAOAG' logo, which is also circular with a yellow and green color scheme and includes the year '1600'. A central modal window is displayed, titled 'Login'. It contains two input fields: one for 'username' with 'admin' typed in, and another for 'password' with a redacted password. Below these fields is a 'Show Password' checkbox and a blue 'Login' button.



*user only accounts have similar navigation minus the admin functions menu.



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USER'S GUIDE | 118

Search bar

Child Information

Vaccination Records with update

Child Information

ID Number: 202405000001
Name: WILSON HIZON
Birth Date: 2024-01-11
Zone: 5
Father's Information
Father's Name: WILFREDO CIRIACO HIZON
Mother's Information
Mother's Name: ELIZABETH RED VELASQUEZ
Contact Number: 09099524289

Edit Info Delete

Vaccination Records

Vaccine	Scheduled Date	Administered Date	Actions
BCG	2024-01-11	11 Jan 2024	<input type="button" value="Update"/>
Hepa B	2024-01-11	11 Jan 2024	<input type="button" value="Update"/>
Pentavalent	2024-02-26	26 Feb 2024	<input type="button" value="Update"/>
Pentavalent	2024-03-26	dd ---- yyyy	<input type="button" value="Update"/>
Pentavalent	2024-04-26	dd ---- yyyy	<input type="button" value="Update"/>
OPV	2024-02-26	dd ---- yyyy	<input type="button" value="Update"/>
OPV	2024-03-26	dd ---- yyyy	<input type="button" value="Update"/>
OPV	2024-04-26	dd ---- yyyy	<input type="button" value="Update"/>
IPV	2024-04-26	dd ---- yyyy	<input type="button" value="Update"/>

Edit Button

Delete button



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Welcome, Admin admin!!

localhost/vax_monitoring/admin.php?page=add_child

Add Child Information

Child Information

Last Name
First Name
Middle Name
Birthdate
DD --- YYYY
Zone Number
-- SELECT ZONE --

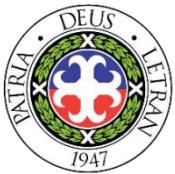
Father's Information

Last Name
First Name

Home Search Child Add Child Admin Notifications Logout

DEPARTMENT OF HEALTH
SALUDATIS PATRIA
1947

MUNICIPALITY OF MANAOAG
1600



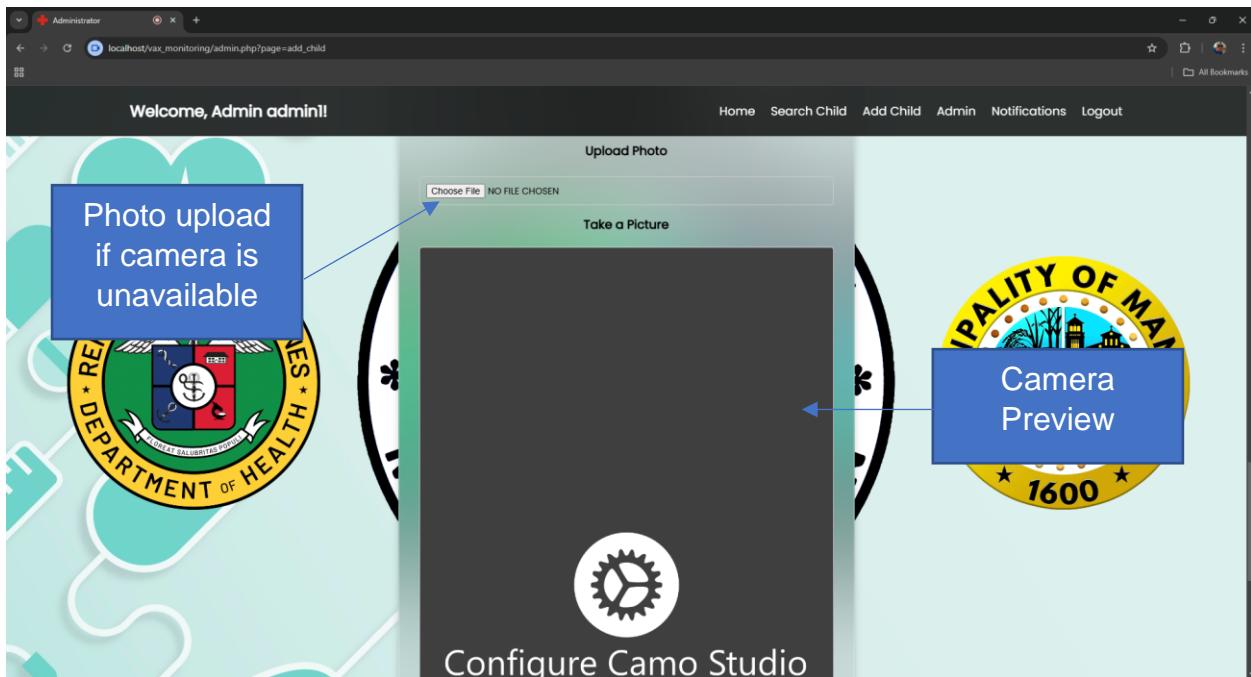
Colegio de San Juan de Letran - Manaoag

Castro St. Poblacion, Manaoag, Pangasinan, Philippines



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A screenshot of a web-based vaccine monitoring system. The page title is "localhost/vax_monitoring/admin.php?page=add_child". The header includes links for Home, Search Child, Add Child, Admin, Notifications, and Logout. A large blue callout box highlights the "Existing vaccine record entry form" section. This section contains a table with columns: Vaccine Name, Months After Birth, and Administered Date (with a dropdown menu for date selection). The table lists several vaccinations: BCG at 0.00 months, Hepa B at 0.00 months, Pentavalent at 1.50 months, Pentavalent at 2.50 months, Pentavalent at 3.50 months, OPV at 1.50 months, OPV at 2.50 months, OPV at 3.50 months, and IPV at 3.50 months. The background features a green and white design with a heart and a stethoscope.



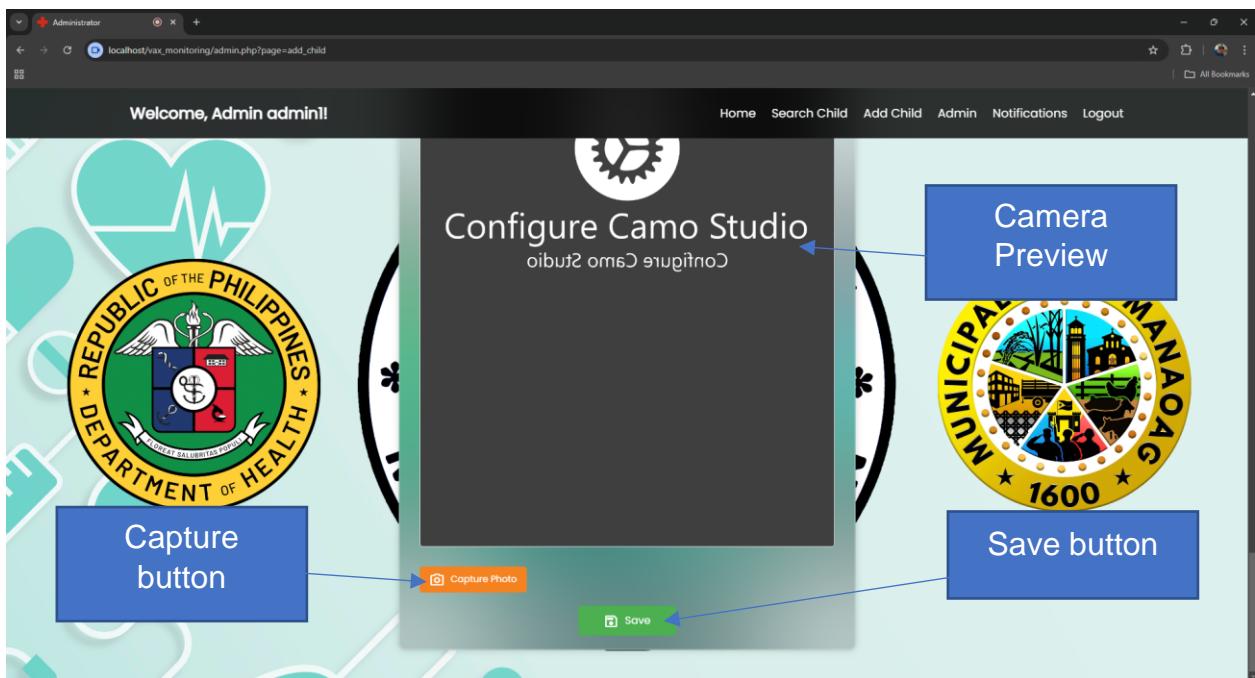


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PERSONAL TECHNICAL VITAE

Personal Technical Vitae of

CENDAÑA, MARIE JOY SERAFICA

61 Zone 3, Imelda, San Jacinto Pangasinan

09652036878

micendana@letran-manaoag.edu.ph



PERSONAL INFORMATION

Age : 24
Date of Birth : February 24, 1999
Place of Birth : Taguig City
Civil Status : Single
Nationality : Filipino

EDUCATIONAL BACKGROUND

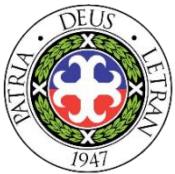
TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021- Present

SECONDARY: San Jacinto National High School
2011 - 2015

PRIMARY: Sta. Maria Elementary School
2004 - 2010

SKILLS

- Leadership
- Critical thinking and problem solving
- Good oral and written communication skills



Personal Technical Vitae of

EVANGELISTA, KRISTINE ROSE TEQUIRO

Babasit, Manaoag, Pangasinan

09958157757

ktevangelista@letran-manaog.edu.ph



PERSONAL INFORMATION

Age	:	21
Date of Birth	:	April 22, 2003
Place of Birth	:	Dagupan City
Civil Status	:	Single
Nationality	:	Filipino

EDUCATIONAL BACKGROUND

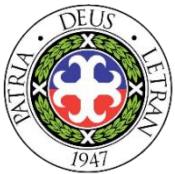
TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021 - Present

SECONDARY: Manaoag National High School
2015 - 2020

PRIMARY: Manaoag Central School SPED Center
2009 - 2015

SKILLS

- Computer Skills
- Teamwork
- Adaptability
- Active Listening
- Time Management



Personal Technical Vitae of

HIZON, WILSON LAURENCE VELASQUEZ
397 Tiong St., Poblacion, Manaoag, Pangasinan
09099524289
wvhizon@letran-manaog.edu.ph



PERSONAL INFORMATION

Age : 28
Date of Birth : January 11, 1996
Place of Birth : Quezon City
Civil Status : Single
Nationality : Filipino

EDUCATIONAL BACKGROUND

TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021 - Present

SECONDARY: Manaoag National High School
2008 - 2012

PRIMARY: Manaoag Central Elementary School
2002 - 2008

SKILLS

- Programming
- Web Development
- Web Design



Personal Technical Vitae of

ISIP, CHRISTIAN NICOLE AYSON

Baritao, Manaoag, Pangasinan

09124636111

cnisip@letran-manaoag.edu.ph



PERSONAL INFORMATION

Age : 21
Date of Birth : February 25, 2003
Place of Birth : Manaoag, Pangasinan
Civil Status : Single
Nationality : Filipino

EDUCATIONAL BACKGROUND

TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021 - Present

SECONDARY: Manaoag National High School
2016 – 2021

PRIMARY: Baritao Elementray School
2009 – 2015

SKILLS

- Knowledge in C++, Java, JavaScript
 - Knowledge in Microsoft Word, Excel and PowerPoint
 - Ability to always learn new things
-



Personal Technical Vitae of

LACA, JOAN MAY CASUPANAN

Tebuel, Manaoag, Pangasinan

09205207918

jclaca@letran-manaoag.edu.ph



PERSONAL INFORMATION

Age : 21
Date of Birth : September 3, 2002
Place of Birth : Sta. Barbara, Pangasinan
Civil Status : Single
Nationality : Filipino

EDUCATIONAL BACKGROUND

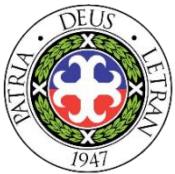
TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021 - Present

SECONDARY: Manaoag National High School
2016 - 2021

PRIMARY: Manaoag Central Elementary School
2010 - 2016

SKILLS

- Able to work under pressure
- Hardworking and always willing to learn
- General Computer Proficiency
- Dedicated and passionate to every assigned task



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Personal Technical Vitae of

MARTIN, JASTIN HINAUT

Lipit Sur, Manaoag, Pangasinan
09266436009
jhmartin@letran-manaoag.edu.ph



PERSONAL INFORMATION

Age : 21
Date of Birth : February 3, 2003
Place of Birth : Urdaneta City
Civil Status : Single
Nationality : Filipino

EDUCATIONAL BACKGROUND

TERTIARY: Colegio de San Juan de Letran-Manaoag
Bachelor of Science in Information Technology
Manaoag, Pangasinan
2021 - Present

SECONDARY: Lipit National High School
2014 – 2021

PRIMARY: Lipit Elementary School
2009 – 2014

SKILLS

- Knowledgeable in MS Office
- Photo editing
- Video editing