



## Capstone Manuscript

IT Capstone Project and Research 1 (AMA University)



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**E-RECORD: A WEB BASED MANAGEMENT SYSTEM FOR BARANGAY  
PARIAN**

**A Capstone Project  
Presented to the Faculty of  
Computer Science and Information Technology Department  
AMA Computer College**

**In Partial Fulfillment for the Degree of Bachelor of Science in  
Information Technology (BSIT)**

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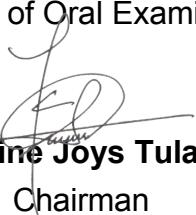
## APPROVAL SHEET

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**J. J. B. J.**

**V. P. S. C.**

**G. B. D.**



## ABSTRACT

The study entitled “E-Record: A Barangay Management System for Barangay Parian” conducted by **Jerez John Jerrick B.**, **Digamon Garry B.**, **Coralat Vince Paul S.** Helps record the management and transaction process of officials and staffs in Barangay Parian. This study is focused on developing a system that will help to improve the Barangay Parian officials’ and staff’s efficiency in managing documents and transaction services for residents on daily tasks. The researchers were able to develop a system that includes electronic record management and transaction process that has a function specifically to record Barangay Parian officials’ and residents’ information and generate certificates and Barangay identification cards. The system can also record payments by generating certificates and IDs. Additionally, the researchers offered much easier and safer availability of barangay documents through an individual accounts for each resident registered by the administrator of barangay Parian. Throughout the study, the researchers found that using technology such as a system can improve the effectiveness of Barangay Parian officials and staff in day-to-day tasks.

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## **Definition of Terms**

The following are the terms encountered during the study. In this section, the researchers used an operational definition.

**Barangay Captain** This is the head or the highest elected official of a Barangay Parian.

**Barangay Health Workers** This refer to the people who are in charge of primary health care services as well as collecting and gathering resident's information of Barangay Parian.

**Barangay officials/staffs** They are assigned to manage the funds, checks in payment of claims, ensuring all the needed reports and transaction documents are already submitted on time, monitors the utilization of appropriations and special trust funds of Barangay Parian.

**Barangay Parian** This is proposed system's client, located at Calamba City Laguna.

**Digital Record** This refers to the resident's information, reports and transaction records of Barangay Parian that stored in a computer.

**E-Record** This is an electronic record which means to any information that is created, processed and stored in a form that can only process through the use of computer.

**Electronic Document** This is a soft copy documents (pdf or doc files).

**Electronic Document & Records Management System (EDRMS)** This is software that manage the Barangay Parian documents.

**Information System** This is an organized system that will store the date of Barangay Parian residents.

**Sangguniang Kabataan Officials** The people or Sangguniang Kabataan who provides opportunity for young people to directly participate in local governance.

**Transaction Processing System** A set of information in which processes the data transaction in database system that monitors transaction programs and daily reports of Barangay Parian.

## **Chapter 1**

### **Project and its Background**

Technology turns into one of the tools that helps an individual or an organization to deal with daily works. This offers different mechanism to enhance development and to network information. Technology advances shaped people's workplace in many ways, through acquiring the tools such as internet and electronic mail for communication, presentation, word pressing and spreadsheets for office productivity. Also, there are advancements such as robots or the artificial intelligence for automation electronic database for recording, and electronic database for record keeping.

Today's digital records and electronic documents are rapidly overruling the traditional or the manual processing of paper records and other procedures that are similarly need to be managed and stored for the upcoming days. This demand is driving new theoretical recordkeeping models, some instances of national recordkeeping legislation, international electronic recordkeeping standards, and the fast development of electronic recordkeeping systems for organizations. Technology's development has given us favorable circumstances for creating a system. Information system (IS) is an integrated environment of people, software, and hardware that primarily functions to gather and process data into important information by requiring a list of procedures on data collection information is then extracted from data by information system procedures, and it also understands the distinction between data and information (Hasan, 2018).

The electronic document management and record management system (EDRMS) supports the creation, use, and maintenance of records and documents; manually and electronically to produce systematic and efficient workflows. This system provides the organizational advantage by giving fast, accurate and accessible information, as a result it reducing operating costs. Additionally, EDRMS provides accountability of the organization in generating a dynamic information management system and has a good security function in records processing for enhancing the transparency. The use of EDRMS has proven to allow several countries such as Croatia, Germany, and Australia to enhance the efficiency of document management and records in respective organizations (Aziz, et al. 2019).

The E-record: A Web Based Management System for Barangay Parian is the subject of this study. The barangay staffs are in charge of maintaining accurate records, storing and managing current data, processing daily transactions, and overseeing reports that are produced on a weekly, monthly, and annual basis. Barangay identification cards, Barangay certificates, barangay indigency, and other certificates are provided by the Parian office staffs as part of transaction processes. Barangay Parian office staffs manually handled document management and daily transactions through the use of folders and log of papers for its data handling and record keeping. As a result, the staff had trouble capturing, processing, and retrieving data, which required a time-consuming and

laborious process. This led to inadequate document management and client transaction processes.

According to Maloney (2019) organizational effectiveness is a concept that measures how positively and efficiently an organization achieves its work goals. An effective organization runs like a well-oiled and well-designed machine. Its moving parts function smoothly to produce the results that the company sets out to achieve, with minimal wasted resources or time. In contrast, researchers have offered the study to assist by offering an automated record management and a system for transaction process for structured and safe file storage, quick information retrieval, and simple document preparation. It seeks to assist the Barangay Parian in to lessen g and drawn-out procedure of accessing files and data for regular business activities.

## **Project Context**

Barangay are the smallest political units in the Philippines and serve as the primary unit of governance in local communities. They play a crucial role in providing essential services and addressing the needs of their residents. However, traditional paper-based systems often result in time-consuming processes, data inaccuracies, and difficulty in retrieving information, hindering the barangay's ability to provide efficient and responsive services.

Parian is a barangay in the city of Calamba, in the province of Laguna. Its population as determined by the 2020 Census was 25,558. This represented

4.74% of the total population of Calamba. The Barangay has a one Captain, seven Councilors, one SK Chairman and thirty other barangay workers.

Barangay Parian still lacks a system for handling documents and transactions. Processing barangay certificates such as certificate of indigency and other certificates proved to be a challenge for the staffs. In addition to mentioned problems and it causes, due to a misplaced paper or a damaged paper, the client has difficulties on retrieving the information of a single person. And because of the Barangay officials and staffs manual process, staffs are having difficulty getting tasks to be fulfilled, which is a result of timely document retrieval and unprocessed transactions.

The services needed by Barangay Parian residents such as transaction of documents like certificates, are the requirements needed for a certain purpose.

There are times that due to many workloads some of the staffs are having difficulty to cater all the clients on a short period of time. Document management and transaction processing are not the only tasks of the Barangay Parian staffs. They also handle meetings, programs, barangay activities.

Therefore, all the stated problems cause the ineffective document management and transaction process. As technology continues to evolve into more advances, record management and transaction processing system for the Barangay can impact and changed the way of traditional process. The study E-record: A Web Based Barangay Management System dedicated to Barangay Parian, is the researcher's proposed system that will help to improve the document management and transaction process offered

in the barangay, to promote the effectiveness of electronic recording of data with

a function that can automatically generate certifications. The system will benefit to the client that can acquire knowledge and solve the current problems, and also to cater the involvement of client to keep track of the barangay's performance progress in managing records and transactions for the residents.

### **Purpose and Description**

A Barangay Management System is a software application designed to facilitate the management and administration of a barangay, which is the smallest administrative division in the Philippines. The purpose of the system is to streamline and automate various barangay-related processes, improve efficiency, and enhance communication and collaboration within community.

Management system is a collection of rules, regulations, and guidelines that an organization uses to guarantee that it can carry out the duties necessary to meet its goal. A management system that works is built on structured and efficient procedures. As a result, it establishes the organization's systematic and ongoing improvement through distinct norms, roles, and processes.

The management system uses all the data acquired from the community it's serving to provide better services in a precise way. Assist the Barangay in continuously achieving its mission, vision, goals by offering all of its residents and community members the services they need. The barangay will easily and simply automate daily operations. It provides quick access to resident's data, making and finding important information simple. This program has a number of benefits,

including less paperwork, better customer services, and increased productivity.

## **Statement of the Problem**

The purpose of this study will support and manage E-record: A Web Based Management System. Specifically, this study aims to answer the following questions:

1. What are the current problems encountered by the Barangay Parian staffs on their current process on managing documents and transactions?

2. How can the proposed system assist the Barangay Parian in retaining and managing the data and records inputted on their day-to-day transactions?

3. How can the proposed system will cater the clients' need without the inconvenience of long queues?

4. How to measure the system using ISO-IEC25010 in terms of the following:

4.1. Usability            4.6. Portability

4.2. Functional Suitability            4.7. Security

4.3. Performance Efficiency            4.8. Maintainability

4.4. Reliability            4.5. Compatibility

## **General Objectives**

The researchers generally aim to develop a Web — Based Barangay Management System for Barangay Parian to offer a more convenient and smooth transactions for both barangay staffs and residents. The said system will provide support on functionality and operations of the barangay, will automate the current manual process and transactions in the barangay. It will speed up the traditional

way where the residents will request and pay through personal appearance. The researchers also developed this kind of system with the aim of avoiding risk of spreading contagious diseases especially the Covid-19 since long queues will be lessened.

### **Specific Objectives**

This study aims to address the issues and develop a system to help the Barangay Parian staffs. Specifically, the objectives of the study are:

1. To determine the current problems encountered by the Barangay Parian on their current process in managing documents and transaction process.
2. To provide them a system that will assist them in retaining and managing the data and records inputted on their day-to-day transactions.
3. To create a system that would help the Barangay Parian people speed up the documentation process.
4. Evaluate the level of acceptability of the users to the system using ISOIEC25010 in terms of:

4.1. Usability	4.5. Compatibility
4.2. Functional Suitability	4.6. Portability
4.3. Performance Efficiency	4.7. Security
4.4. Reliability	4.8. Maintainability

### **Significance of the Study**

The study E-record: A Web Based Management System for Barangay

Parian will benefit the following:

**Barangay.** The approach will aid Barangay Parian in increasing the number of residents who are satisfied with the services offered. The barangay would be able to operate more efficiently and effectively with the new method.

**Staff.** The system would lessen tasks in the staff's workload. It would be easy to handle records. The Staff would be able to retrieve and store data more efficiently and effectively if the system was in place.

**LGU.** This method would make it easy to obtain resident information or statistics, and will be pleased with quick service as well. The system makes it easier for LGU to operate in the village and would not have to wait a few days for the information they needed.

**Residents.** Residents will benefit from the system's assistance in meeting requirements in the most as effectively as possible.

**Researchers.** The researchers believe that prior experience in constructing the system will provide new knowledge. The system's creation would help gain a better understanding of the subject.

**Future Researchers.** This study could serve as a reference or a guide to assist and enhance the future researchers own study by doing and constructing a comparable study. This research could be a valuable source of extra information.

### **Scope and Limitation**

This study will focus on developing a management system for Barangay Parian, to help lessen the problems encountered by the client in sorting and finding profiles and data of the residents because this provides profile-based information

of Barangay Parian residents and a summary dashboard containing all the important data inputted. The system will also handle and keep the records of the Barangay and its residents. Additionally, the system helps to provide fast transactions in the process of issuing documents and certificates which record payments on a financial report basis, and ensure that all the records and information are updated and secured. This would enable the barangay personnel to handle transactions automatically through the system. Additionally, this offers high-quality services for file security, such as incident reporting or blotter, barangay identity cards, and other associated services that will assist reduce lengthy processing times and human errors.

The management system for Barangay Parian aims to streamline operations and improve convenience for residents. It includes several key features to facilitate efficient processes. Firstly, an online payment transaction system using Gcash with QR Code is implemented. This allows residents to make payments for various services digitally, simplifying the payment process. Additionally, an online system is established to provide residents with easy access to services and information. Through this platform, residents can conveniently interact with the Barangay office, eliminating the need for physical visits and saving time. One of the significant features of the system is the provision of user accounts for residents. These accounts enable individuals to request documents provided by the barangay such as barangay IDs, barangay certificates- certificate of indigency, barangay clearance, and the like. These individual accounts will

lessen the inconvenience of long queue and waiting time of the clients.

The residents will receive a remark whether the request is already approved or not. Moreover, residents have the right to choose the date when to get their requested document. The system has certain delimitation that need to be considered. While it provides a wide range of services for registered users and residents of Barangay Parian, there are limitations to its functionality. Residents who do not have internet access will not be able to avail of the online barangay services and must visit the barangay office in person. Furthermore, when requesting permits, clearances, or other documents, it is mandatory for residents to personally retrieve the printed files, as they require the official barangay seal. It's important to note that the system does not handle requests for business clearances. Residents in need of business clearances should approach the city government for this specific service, as it falls outside the scope of the Barangay Management System.

In summary, the management system for Barangay Parian focuses on enhancing performance efficiency for the staffs and convenience for residents through online payment transactions, an online system, and user accounts for certificate requests without omitting the traditional way of collecting data through the use of record books. However, the system does not cover business clearances, which must be obtained from the city government.

## **Chapter 2**

### **Review of Related Literature**

This chapter includes a review of related studies and literature in which the researchers have gathered the necessary data in relevant to the proposed system to be proven effective. The researcher's goal in this chapter is to present an analysis of the other studies, literature and ideas used to collect in order to support the study.

#### **Foreign Literature**

According to Siering and Janze (2019), a management information system is a "computer-based and manual system that transforms data into relevant information essential to providing the support necessary for making right decisions." A management information system is a location where "the planning and integration of systems are carried out for the collection of relevant information, transforming it into the right data that can be supplied to executives at different levels which aids at making the right decisions."

According to Tantua and Godwin-study Biragbara's from 2020, there is a strong correlation between the office productivity of the Print Media in Rivers State and the management information system. They suggested implementing information systems in print media management and operations in order to improve the company's capacity for effective operation and high profitability. The use of office automation systems like computers, websites, scanners, and other tools should be encouraged for the print media as well as other businesses and

organizations to help increase the operational effectiveness and profitability.

Additionally, Ikechukwu et al. (2019) claimed that the creation of information systems is necessary due to the world's growing need for information. It is crucial that businesses keep an eye on the information on the newest information technology business management solutions that are introduced to the market and promise to enhance operational productivity and company management practices, enhancing competitive advantage. Information systems are one of the information technology solutions that boost business productivity. Information systems gather data, organize people, markets, competitors, environments, procedures, databases, and devices to provide routine information that will help corporate managers make effective decisions that will enhance employee and organizational performance and lead to organizational success.

A transaction processing system (TPS), according to M. rianita (2020), is a system that gathers, inputs, saves, retrieves, and processes information about pertinent business activities and generates the data and documentation needed to manage a firm. The priority-based queue-oriented transaction processing architecture that Qadah (2021) suggested removes the transaction contention footprint and leverages speculative execution to improve the throughput of centralized deterministic transactions processing units.

In his study, Arslan concluded that the researchers should use a machine learning technique for smart transaction processing in the system to help with reducing the average cycle time per transaction performance parameter (2021).

Additionally, according to Karanjai et al., (2021), concluded that without relying on any triggering mechanism, the proposed transaction system separates event processing from transaction processing so that confidential event-based UTXO (unspent Transaction Output) notes (event-based UTXOs or conditional UTXOs) can be transferred freely, in complete privacy, and asynchronously with the asset values only being dependent on the linked event outcomes.

### **Local Literature**

Lalaine P. Abad asserts that the need to solve societal problems in each community is a crucial issue that requires the attention of those in positions of power. Using information and communication technology to create profiles of each family in the community could lead to excellent governance with e-government at its core. Essential information could include statistics on labor and employment, family income and spending, demographics by (population, age), water and sanitation, type of housing, and education once profile data has been aggregated. Development of an Information-Based Dashboard: Automation of Barangay Information Profiling System (BIPS) for Decision Support Toward e-Governance, (2020).

Intud, Jr. (2021) claims that creating a barangay management system Barangay data may be instantly captured, encoded, stored, and maintained by the system. It could lead to a systematized way of gathering and retrieving vital data needed for making informed judgments regarding a variety of prospective local

government difficulties. Manual techniques, such as gathering a large number of file folders containing the data of their constituents, cause delays in service delivery and may lead to incorrect task completion because of the difficulties associated with collecting data on a regular basis.

Olipas, Luciano, and Cochanco (2019) assert that Barangay plays a big part in the general development of a city, a province, or a nation. There have been several technological advances in recent years. A barangay's management system will be a progressive method for handling various procedures and activities there. Additionally, it will have a profoundly favorable effect on the way information and records are managed.

### **Foreign Studies**

Web-based application development and design In ATI, Galle, an efficient management system replaces manual labor.D.N.P. Attanayake and R.G.S. Thilanka (2020). The role of technology plays a crucial function in a firm, enabling it to manage its activities in a turbulent environment and achieve its goals more effectively and efficiently. Like in the barangay, a lot of people use a technology to help them with their daily lives. Having a website for San Dionisio will help them manage and arrange the papers that the barangay's citizens have requested.

The study, Public Health Information Systems for Primary Health Care in India: A Situational Analysis Study (Nov 2019), employed a qualitative approach to assess and comprehend different ICT-based HIS implemented at the

state/union territory (UT) level in India. In-depth interviews with key informants at different levels (programmer managers, analysts, coordinators, data entry operators, and health care providers) were conducted after initial scoping research on HIS through literature search and observation was completed in order to gain insight into the user experience of these systems. For data analysis, qualitative data were coded thematically and inductively.

Designing Temporary Resident Information Systems claims that Paula Dewanti and Putu Adi Guna Permana (2019) The first The village authority processes data about transient inhabitants on an ongoing basis. The current system still encounters issues while gathering data, researching population statistics, and producing reports for transient residents. Because it solely uses physical documents as a storage medium, the manual registration technique also causes data loss and storage media deterioration. Because of this usual system, Temporary Resident data collection procedures in the village were less effective and efficient.

## **Local Studies**

A web-based management system called the Barangay Management System, sometimes referred to as e-barangay, attempts to change the traditional, centralized barangay management model into a more inclusive, citizen-focused one. It aims to simplify current administrative processes for requesting documents, submitting complaints, and creating accurate and pertinent local data. As a result,

the barangay's current manual processes and transactions will be automated. In addition to efficient data capture and monitoring, the e-barangay can process online document requests and complaint blotters. It is backed by SMS technology. The targeted barangay's entire enrolled population is qualified (Carpio, 2020).

The majority of barangay officials have access to a personal computer both at home and at work using their mobile data and workplace internet connectivity, according to the statistics. It was found with the help of the Local Government Unit (LGU) that the majority of respondents are knowledgeable and adept computer users. In addition to their poor socioeconomic status, the study's participants continued to report slow internet bandwidth, which inhibits connection and communication, as limitations on their usage of ICT. As a result, it was found that there were no discernible disparities between the ICT abilities and restrictions of the barangay secretaries and treasurers. Conclusion: Participants in the survey opt to utilize office computers to acquire the information they need since it is convenient and there are resources available. Participants in the survey said that while they were capable of performing their professions well, their usage of ICT might be constrained by slow internet and scarce financial resources. There were also presented additional study implications (Santiago, et al., 2021).

## **Synthesis**

In this generation, technology becomes the number one tool to enhance

the process of an organization to operate fast in accessing information, provide

reliable transactions in releasing documents of an organization. The studies cited above has similarities to the proposed study in which it could be evidence to validate this study. Each study has a system which are related to the researchers proposed system such as Management Information System, Transaction Processing System, Database Information System, Electronic Record Management System and the Barangay Information system. All of the study cited are proven that the system they come up helped to enhance the efficiency of an organization. Studies of Siering and Janze (2019), Asim, (2019 and Cantos et al., (2019) stated that organization's performance improved in using technology and systems. Danlog, et al. (2020), Adeyanju (2019) and Imus et al. (2020) studies stated that there is an impact to organizations' efficiency when using systems, while Gisesa (2020) and (Carpio, 2020) claimed that the integration of technology and system to an organization had a huge help.

While Almazán et al., (2020) and Ikechukwu et al. (2021) study proved that the system enhanced and improved the organization's outcome or productivity. However, there are also differences on studies and literatures mentioned above that will stand out particularly in the function of the system. First is the separation of event processing to the transaction processing of the barangay. Second is the portal to higher government or the municipality. Thirdly, public is updated and more aware of barangay situations in terms of household, commodities, population and also organize programs, and lastly, the study does not process

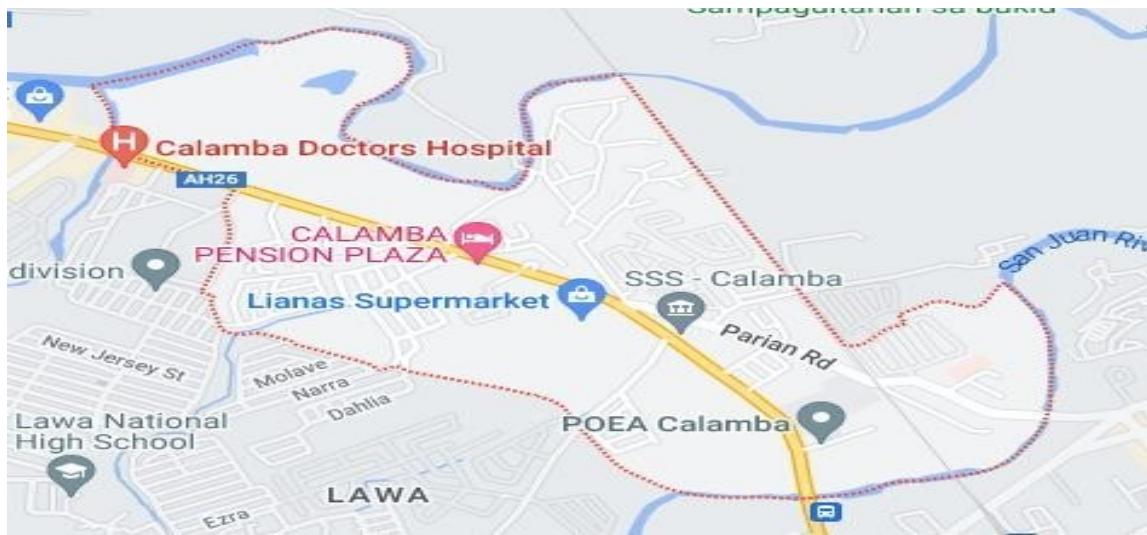
online services such as documentary request, online complaints, and online records of payment for documents provided by the Barangay.

Overall, all the said pieces of studies and literature will help the researchers study to develop a system on improving and enhancing the organizations performance.

## Chapter 3 Methodology Results and Discussion

This chapter deals with the research methods used in the study. It includes a discussion on system architecture, software and hardware details, conceptual design, and cost-benefit analysis.

### Research Locale



**Figure 1: map of barangay**

Figure 1 shows the map of barangay Parian where the barangay hall was located. Parian is a small barangay in the City of Calamba, province of Laguna, which has a total population of 25,558. This represented 4.74% of the total population of Calamba. It is composed of 9 barangay officials, 9 Sangguniang Kabataan officials and 15 other barangay workers. The Barangay Captain named Rodnie P. Perez, and other Barangay officers and worker's mission is to render excellent services for the resident's total satisfaction at all times. The researchers

developed a system with the hope to cater the common problems encountered by the barangay in terms of transactions, requests and everything the system can offer.

### **Respondents of the Study**

Population of the Study In this section, the sample of the study to be used by the researchers were discussed. In this study, the researchers used the total number of 50 respondents, 35 from the active barangay office staffs and 15 from the residents who will test the system.

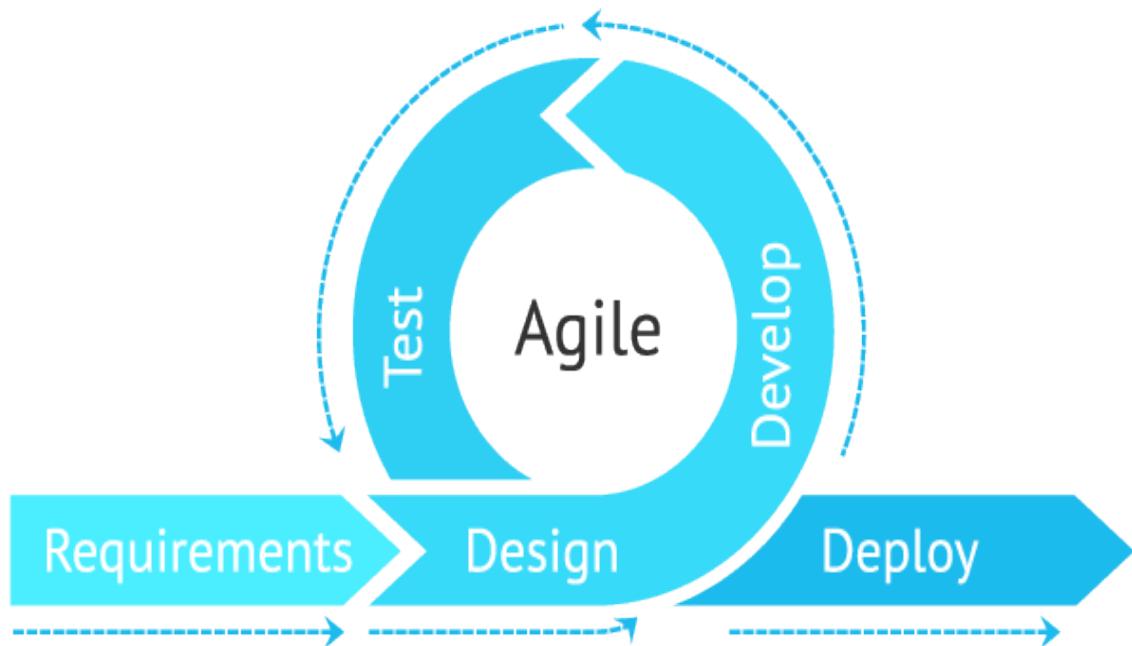
RESPONDENT	SIZE
Barangay Captain	1
Barangay Officials	9
Sangguniang Kabataan Officials	9
Barangay Health Workers	15
Barangay Secretary or Admin	1
Residents	15
<b>Total</b>	<b>50</b>

**Table 1: Respondents of the study**

Table 1 presents the respondents of the study. The researchers came up with a sample size for this study consisting of a chairman, 9 barangay officials, 9 Sangguniang Kabataan officials, 15 barangay health workers, 1 barangay secretary or admin and 15 residents with a combined total of 50 individuals from

office staffs and residents. The researchers would not use any sampling technique since it has less than 100 of total respondents, instead the researchers used the total enumeration for this study. The researchers used the above-mentioned individuals as respondents to the study since they are likely to work in the processing of documents, transactions, and recording process depending on the availability of staffs. With the use of the Likert scale in the research survey questionnaires, the researchers gathered the opinions of the respondents, which helped in categorizing and comprehending their views and perspectives. The results were evaluated using the computation of weighted mean.

### Agile Software Model



**Figure 2: Agile Software Model**

The Agile software development cycle is based on iterations, or single development cycles, which build upon one another and lead into the subsequent stage of the overall development process until the project is finished. Every iteration has a predetermined completion date and normally lasts between two and four weeks. At the end of each iteration, a usable product should be ready for release. Agile approaches aren't always the optimum solution for every project. They produce the best results when there is a strong contact between the developer, the customer, and a development team comprised of skilled team members. These approaches offer an iterative development paradigm in which the whole work is divided into many releases in order to meet the objectives set for each phase. E RECORD: A Web Based Management System for Barangay Parian, the agile software development cycle was employed for its structured and systematic approach to the development process.

The stages of the model, which may encompass requirements gathering, design, develop, testing, and deploy ensure that every aspect of the system is carefully considered and executed. The agile nature of the model enables continuous improvement and refinement of the system through incorporating feedback from stakeholders such as barangay staff and residents, resulting in a system that meets the specific needs and requirements of the barangay.

## Requirements Documentation

The documents presented below are required by the Administrator and Staffs prior to the registration of a resident into the system and claiming of documents.



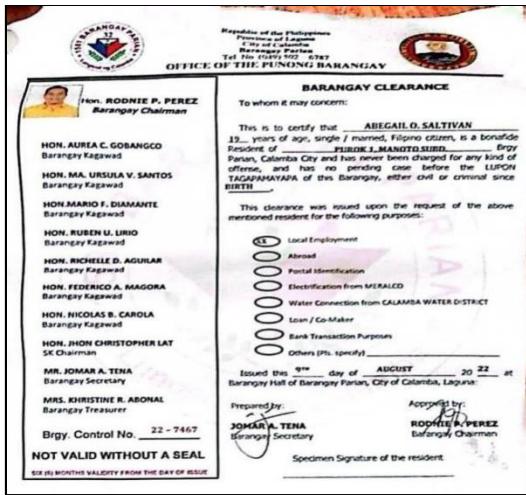
**Figure 3: Voter's Certification/ID**

A Voter's Certification/ID, issued by the Commission on Elections (COMELEC) in the Philippines, is a crucial document that serves as evidence of an individual's voter registration status. The certificate contains important details such as the individual's name, address, and voting precinct assignment. To participate in the electoral process and cast vote in elections, having a voter's certificate is a mandatory requirement for citizens in the Philippines. In the context of registering as a resident of a barangay, a Voter's Certificate serves as a valid form of identification and proof of voter registration. It can be presented to the barangay staff or administrator as part of the resident registration process.

<p><b>AUTHORIZATION LETTER (CLAIMING DOCUMENTS)</b></p>  <p>Date: June 1, 2022</p> <p>To: [FIRSTNAME] [ADDRESS] [POSTCODE] [COUNTRY]</p> <p>Subject: Authorization Letter Claiming [Documents]</p> <p>To Whom it May Concern:</p> <p>This is to authorize: [NAME AUTHORIZED PERSON] to claim a [DOCUMENTS] in your office as I am currently not able to do it myself.</p> <p>To support my claim, I have attached two of my identity cards, respectively:</p> <ul style="list-style-type: none"> <li>• [ID 1: ie COMPANY ID];</li> <li>• [ID 2: ie PASSPORT ID].</li> </ul> <p>to serve as proof that I have allowed the bearer of this letter to claim the documents on my behalf.</p> <p>Should you have any questions about the identity of the person bearing this letter, you can always call me at [PHONE NO], which is also reflected on my IDs.</p> <p>Thank you and I am hoping for your smooth cooperation.</p> <p>Yours sincerely,</p> <p>[NAME]</p> <p>[SIGNATURE]</p>
---

**Figure 4: Authorization Letter**

An authorization letter is a legal document that grants a person (the "agent") the power to act on behalf of another person (the "principal"). In the context of claiming documents, an authorization letter would allow the agent to collect or retrieve specific documents on behalf of the principal. For example, if a resident is unable to pick up barangay identification card, the resident can provide an authorization letter to a trusted friend or relative to retrieve it. The authorization letter should be written by the principal and include specific details about the documents to be collected and the identity of the agent. The agent must present a valid form of identification, such as a driver's license or passport, along with the authorization letter when claiming the documents.



**Figure 5: Barangay Clearance**

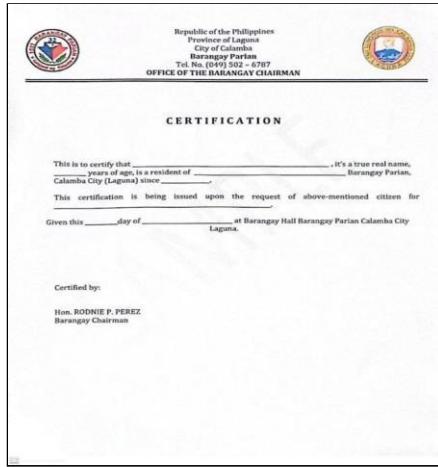
An authorization letter is a formal document that authorizes someone else to perform a specific task or act on your behalf. In the context of claiming documents such as a barangay clearance or permit, the letter is used when the resident is unable to claim the documents in person and wishes to delegate the task to another person.

The authorization letter should contain the following information:

1. Resident's name and contact information.
2. Name and contact information of the authorized representative.
3. A clear and specific description of the task being authorized, E.g. claiming a barangay clearance or permit.
4. The date the letter was written.
5. The resident's signature.

It is important to note that the authorization letter must be signed by the resident who is the owner of the documents being claimed, not by the person

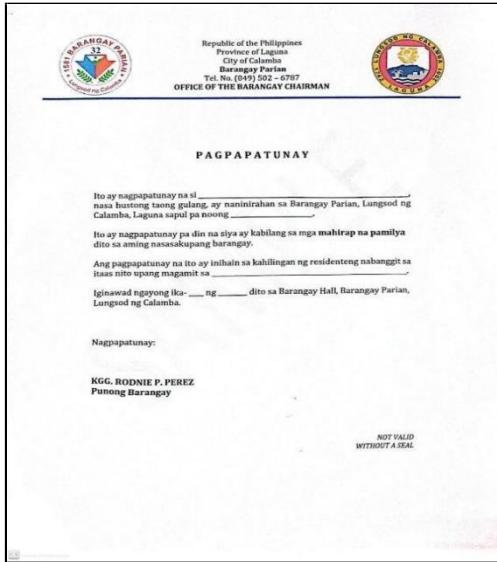
claiming the documents. This serves as a proof of the resident's consent to delegate the task to the authorized representative. In addition, it is advisable to make a copy of the authorization letter for both parties and for the authorized representative to bring a valid identification card when claiming the documents. This helps ensure a smooth and efficient process and verifies that the right person is receiving the documents on behalf of the resident.



**Figure 6: Residency Certification**

A residency certificate is a document issued by the barangay. It is an important document used to verify an individual's current place of residence and can be used for various purposes such as applying for government services and benefits, enrolling in schools, and employment. Obtaining a residency certificate

from the barangay is a requirement in some places to prove an individual's residency status and can be used to validate other official documents.



**Figure 7: Barangay Indigency**

Barangay Indigency refers to a state of poverty or financial need. A barangay indigency certificate is a document issued by a barangay certifying that an individual is indigent and unable to afford basic necessities of life. The certification is important for individuals who wish to avail government services that are intended for the indigent individuals. This certificate serves as proof of financial need and can be used to access services such as medical assistance, burial assistance, and financial assistance, educational assistance and the like. In some cases, the certificate may also be used as a requirement for other government benefits.

## Technical Background

This system requires the following hardware and software specification for the development of the said proposed system.

### Hardware Specification:

Category	Minimum	Recommended
Processor	Intel(R) Core (TM) i3-7100 CPU3.90GHz	Intel Core i5 2nd generation or any processor with 2 cores, 4 threads, and 2.60ghz
Ram	4GB of RAM	Kingston 8GB DDR3 1600MHZ
Storage	128GB HDD	1TB HDD

**Table 2: Hardware Specification**

Table 2 shows the hardware requirements of the system. A minimum of 4GB of RAM is required to complete this project. For the processor, an Intel Core i3 or any processor with 2 cores and 3.90GHz will suffice, and the hard drive space will require at least 128 GB of free space. Because the following components are used by the researchers in testing the system, the researchers recommended an 8GB RAM size, an Intel Core i5 2nd generation or any processor with 2 cores, 4 threads, and 2.60ghz for the processor, and 1TB for the hard disk space.

## **Software Specification:**

<b>Category</b>	<b>Minimum</b>	<b>Recommended</b>
<b>Operating System</b>	Windows 7 32bit	Microsoft Windows 10, Mac OS, and Linux
<b>Browser</b>	Mozilla Firefox, Internet Explorer, Safari, Opera Mini	Google Chrome
<b>XAMPP</b>	PHP version 8.1	PHP version 8.2

**Table 3 Software Specification**

Table 3 shows the software requirements to run the system. To work on this project, you will need a minimum of Windows 7 32bit for the operating system, Mozilla Firefox, Internet Explorer, Safari, Opera Mini for the browser, and at least version 8.1 for the XAMPP. The researchers recommended Windows 10, Mac OS, or Linux for the operating system, and Google Chrome for the browser, for the greatest experience with the system. For XAMPP, PHP version 8.2 is also recommended.

## **Front End:**

### **CSS**

The proponents used the CSS for the perfect design and customized the html program.

### **Html**

The proponents used html to have compatible for web browser software and easy way for develop program.

## **JavaScript**

The proponents used the JavaScript for the real time function to send data and fetching data from the PHP script and make it easy and fast to load in webpage or get data to insert in the database without refresh page.

## **Bootstrap**

The proponents used bootstrap for the plugins of the system.

### **Back End:**

#### **PHP**

The proponents used PHP script for the connection to MySQL database having to insert, select, update, delete and all the records from database has to access on PHP script to retrieve the data from web page

### **Data Base:**

#### **MySQL**

The proponents used MySQL as a data base to store all the data from the system.

### **Requirement Analysis**

The Analysis phase aimed to comprehend the underlying logic of the system. The most crucial task in this phase was the gathering of information. The developers utilized the requirements elicitation technique of brainstorming to achieve this goal. The gathering of requirements took place over a period of three

days. During this time, the researchers were encouraged to propose and explore ideas regarding what they expected from the system and what they desired in the application. As a result, the developers decided to create the E RECORD: A Web Based Management System for Barangay Parian, to offer a more convenient transactions to both barangay staff and residents.

### **Cost Benefit Analysis**

The cost of developing a system includes both personnel expenses and other related costs. On the other hand, the cost of maintaining the system also encompasses personnel expenses and other related costs for its future use.

Description	Qty.	Unit	Cost	Total
<b>DEVELOPMENT COST</b>				
<b>Hardware</b>				
Desktop	1	set	₱ 30,000	₱ 30,000
Laptop	1	pc	₱ 30,000	₱ 30,000
Internet	5	month	₱ 1,699	₱ 8,495
Printer	1	set	₱ 6,350	₱ 6,350
<b>Total</b>				<b>₱ 74,845</b>
<b>Utilities</b>				
Electricity Fee	5	month	₱ 600	₱ 3,000
<b>Total</b>				<b>₱ 3,000</b>
<b>Supplies</b>				
Bond Paper	1	ream	₱ 300	₱ 300
<b>Total</b>				<b>₱ 300</b>

<b>Software</b>				
Google Chrome Browser	1	pc	₱ 0	₱ 0
XAMPP	1	pc	₱ 0	₱ 0
Sublime Text Editor	1	pc	₱ 0	₱ 0
<b>Total</b>				<b>₱ 0</b>
<b>Personnel</b>				
Programmer	1		₱ 0	₱ 30,000
Researcher	1		₱ 0	₱ 20,000
Analyst	1		₱ 0	₱ 20,000
<b>Total</b>				<b>₱ 70,000</b>
<b>TOTAL DEVELOPMENT COST</b>				<b>₱ 70,000</b>

**Table 4: Development cost**

<b>MAINTENANCE COST</b>				
<b>Hardware</b>				
Desktop/Laptop	3	set	₱ 30,000	₱ 90,000
Internet	12	month	₱ 1,699	₱ 20,388
Printer	1	set	₱ 6,350	₱ 6,350
<b>Total</b>				<b>₱ 116,738</b>
<b>Utilities</b>				
Electricity Fee	1	annual	₱ 600	₱ 7,200
<b>Total</b>				<b>₱ 7,200</b>
<b>Supplies</b>				

Bond Paper	1	box	₱ 1,000	<b>₱ 1,000</b>
<b>Total</b>				<b>₱ 1,000</b>

<b>Software</b>				
Google Chrome Browser	1	pc	₱ 0	₱ 0
<b>Total</b>				₱ 0
<b>Personnel</b>				
IT Specialist/ System Maintenance/ IT Support	1	monthly	₱ 25,000	₱ 25,000
<b>Total</b>				₱ 25,000
<b>TOTAL MAINTENANCE COST</b>				₱ 149,938

**Table 5: Maintenance Cost**

### **Input and Output Reports and Analysis**

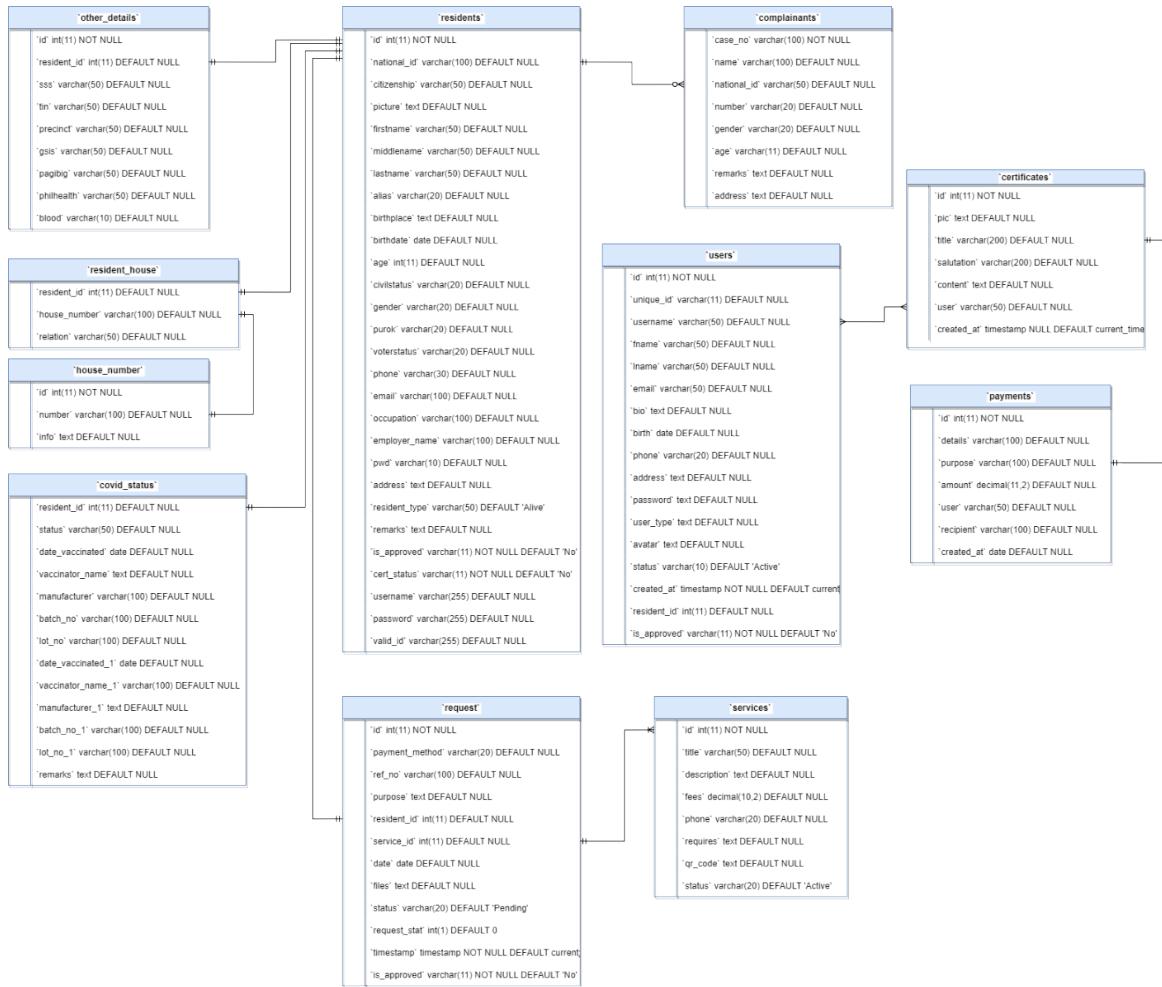
Input reports involve data entry and retrieval, such as adding new residents to the system, updating information on existing residents, and recording transactions. The system may also generate output reports that summarize information stored in the system, such as demographic information about residents and barangay information. Analysis reports used to identify patterns and trends in the data, such as which residents are most active in community events or which areas of the barangay are in need of improvement. These reports can be used by future researchers, programmers, and barangay officials of Barangay Parian to make informed decisions about how to allocate resources and improve services for residents.

In general, the input and output reports in a proposed system are designed to make data entry and retrieve more efficient, improve communication and collaboration among barangay staff, and provide residents with more convenient access to information and services.

Input	Output	Analysis
Resident and Barangay Information	Barangay Management System	Efficient and convenient way of data entry
Request Documents and Services	Requests Database	Improved tracking of Resident's Request
Barangay Announcement	Complete Details of Announcement	Efficient management of barangay activities
Financial Transactions	Financial Records	Improved management of barangay transactions such resident's payment
Census and Demographic Data	Demographic Report	Accurate and up-to-date information about residents and barangay
Covid-19 Information	Covid-19 Report	Efficient management of residents Covid-19 Status

**Table 6: Input and Output Reports and Analysis**

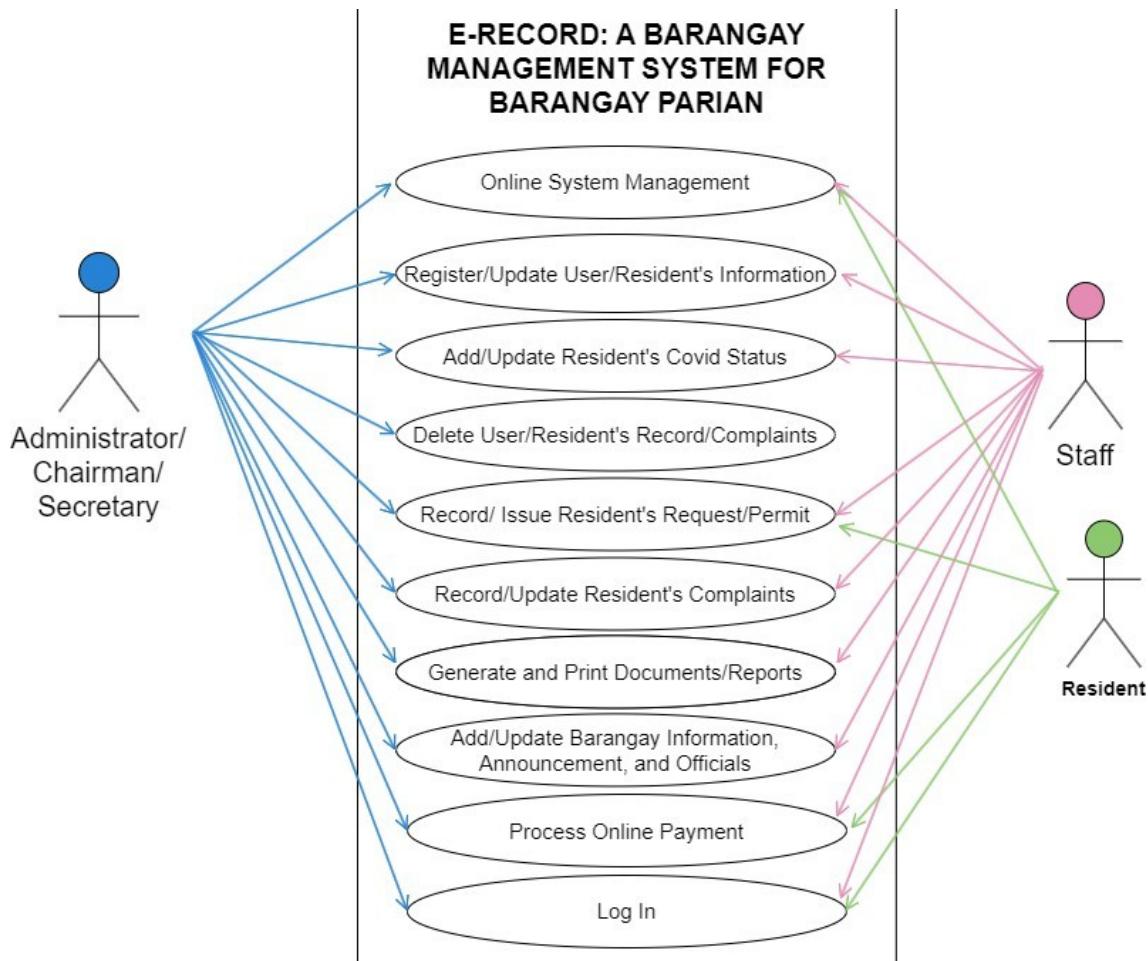
## Conceptual Design



**Figure 8: Conceptual Entity Relationship Diagram**

This conceptual entity-relationship model for the E-RECORD: A Barangay Management System for Barangay Parian comprises various entities, including System User, Barangay Information, Barangay Announcement, Barangay Officials with their Chairmanship and Positions, Resident Information, Resident Covid Status, Resident Complaints, Complaint Status, Resident Requests for documents like permits, clearances, and identification cards, and Resident Payments.

The purpose of the diagram is to meet the system's requirements and present a comprehensive depiction of each entity in the system.

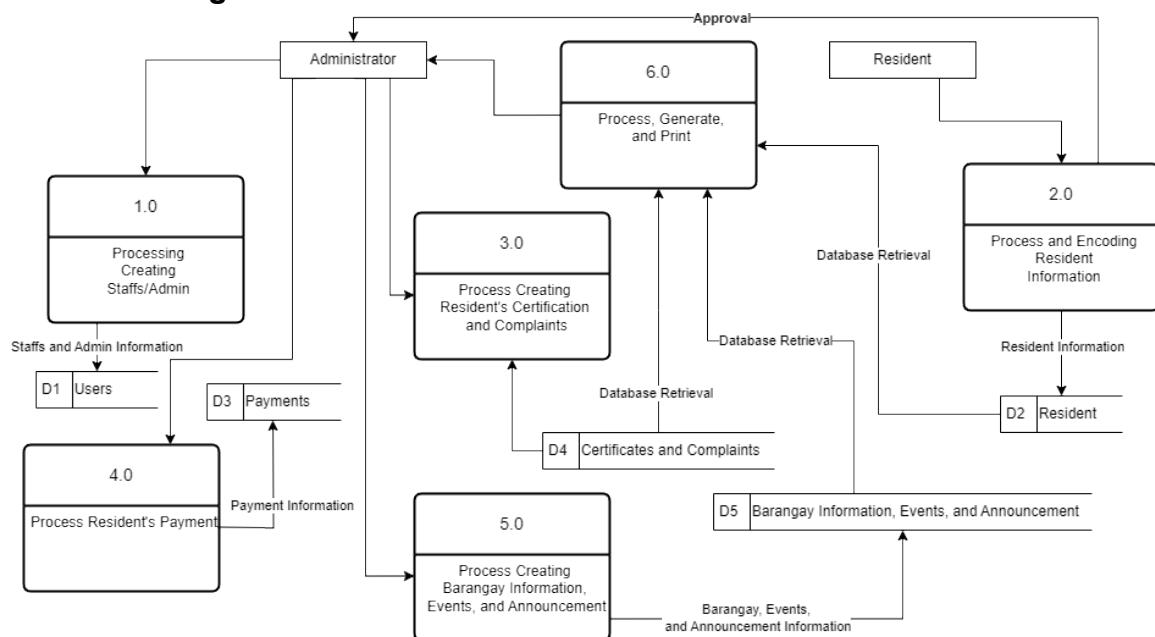


**Figure 9: Use Case Diagram**

The Use-Case Diagram illustrates the interactions of three actors within the E-RECORD: A Barangay Management System for Barangay Parian. The Administrator (Chairman/Secretary) is responsible for online system management, user and resident information registration and updates, Covid status management,

complaint handling, request and permit issuance, document and report generation, barangay information and announcement updates, online payment processing, and system login. The Staff possesses similar functionalities as the Administrator, except for the ability to delete records and complaints. They can manage the system, register/update user and resident information, handle Covid status, process requests and complaints, generate documents and reports, update barangay information and announcements, process online payments, and log into the system. The Resident, as a system user, can log in to the system, manage their account by means of requesting and view information about permits and certificates, make online appointments and payments. Together, these individuals and their functionalities encompass the various interactions within the Barangay Parian's E-RECORD system.

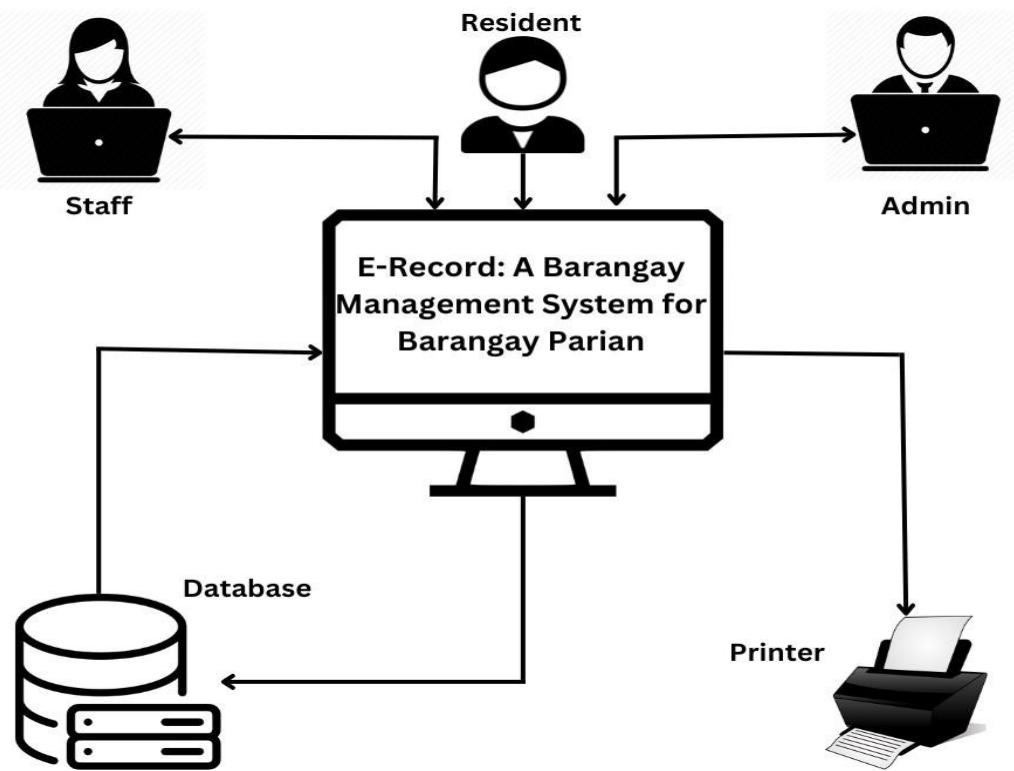
# Data Flow Diagram 0



**Figure 10: Data Flow Diagram 0**

In Figure 10, the researchers utilized a Data Flow Diagram (DFD) Level 0 to outline the flow of information in a process or system. The diagram visually depicts the inputs, outputs, and the pathways between each component in the system. By using DFD Level 0, researchers can effectively communicate the flow of data and ensure that the system design accurately captures the desired process.

### **System Architecture**



**Figure 11: System Architecture**

The figure 11 above shows the System Architecture of E-Record, a Barangay Management System for Barangay Parian. It has two main

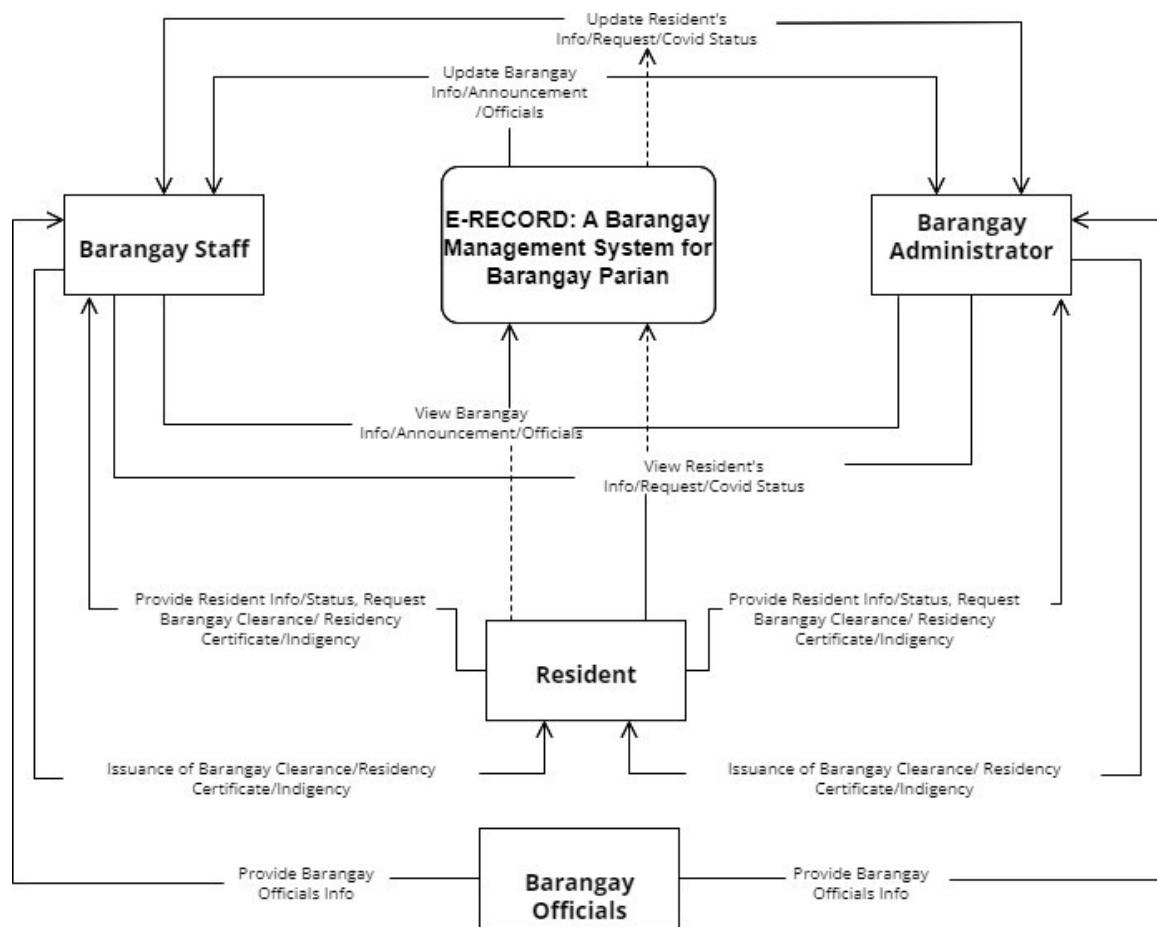
components:

the client-side and the server-side. On the client-side, the system provides a user interface for the Barangay Admin to perform various tasks such as adding, modifying, managing resident information, handling barangay clearances and certificates, generating reports and deleting information. The barangay staff also has the same functionality as the Admin except for deleting information. In addition, the client-side of the system offers a user-friendly interface that allow residents to log into their accounts and access various features. Within their account, residents have the ability to view their personal information, submit requests for permits, make online payments and allowing the residents to view the information of barangay such announcements, barangay map, and organizational chart. This functionality enables residents to conveniently interact with the system, providing them with a streamlined process for accessing their data and initiating requests. The client-side communicates with the server-side through a network connection to access and modify data stored in the database. On the server-side, the system is responsible for processing and storing the data entered by the users. The server-side includes a database management system that stores and manages the barangay records and resident information. It also includes a web server that handles requests from the client-side, processes the requests, and returns the appropriate response.

The system also includes a printing component that allows the users to print various documents such as barangay clearances and certificates. The printing component is connected to the server-side and retrieves the necessary

data from the database to generate the required documents. Overall, the Barangay Management System is a robust and efficient software application that simplifies and automates various barangay-related tasks, providing a more efficient and effective way of managing barangay records and resident information.

### Context Flow Diagram

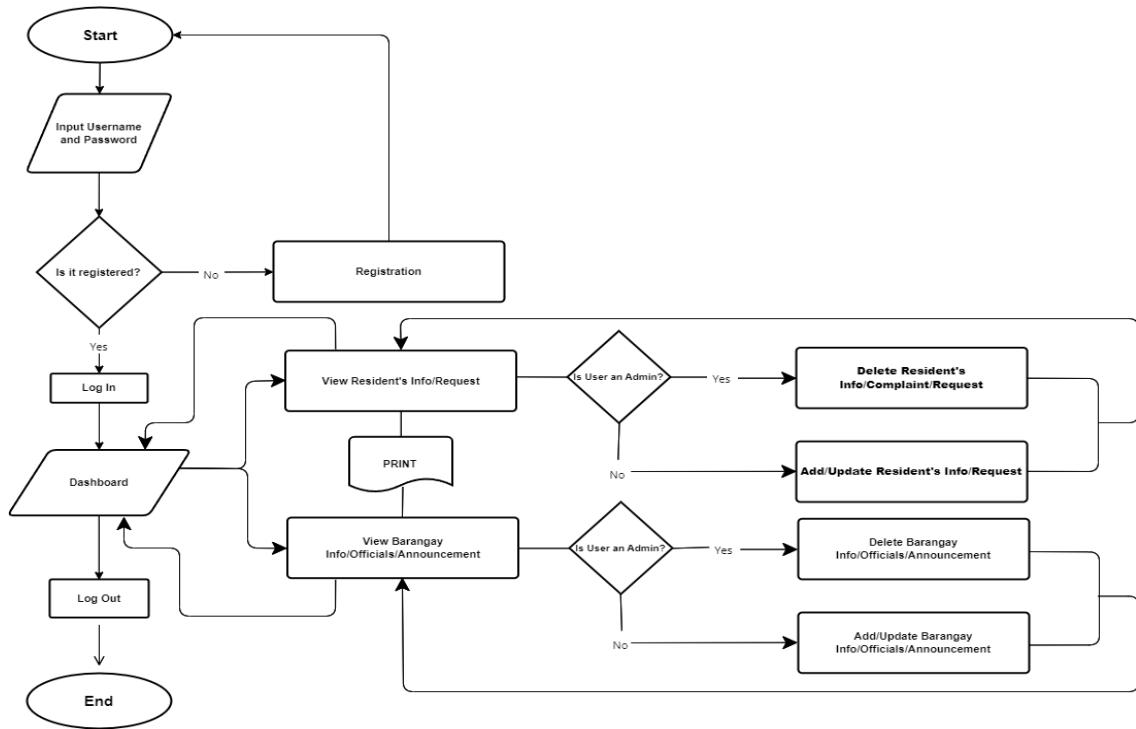


**Figure 12: Context Flow Diagram**

In Figure 12, the context flow diagram outlines the interaction between external entities and an internal software system. The diagram serves the purpose

of helping businesses understand the scope of the system, enabling optimal design of new or improved systems.

## Flow Chart



**Figure 13: Flow Chart**

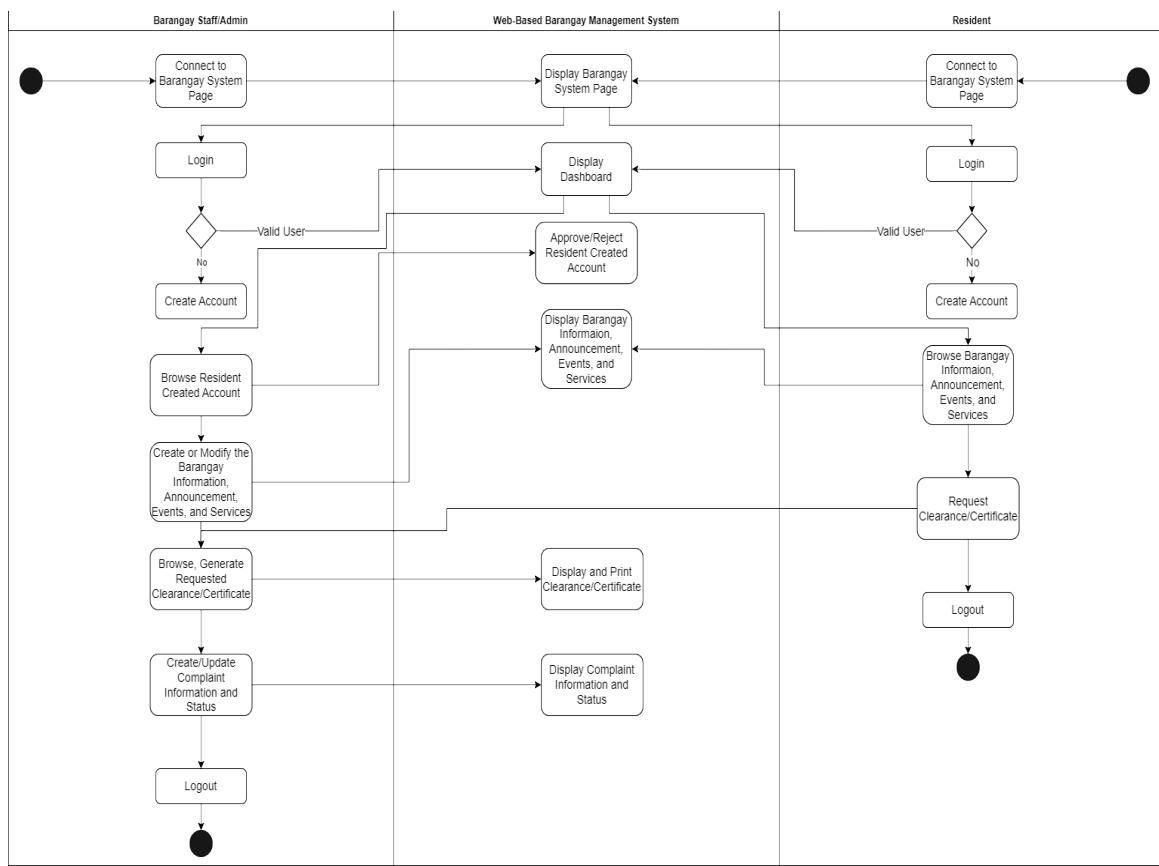
In Figure 13, a flowchart was utilized by the researchers to aid in the development of the Barangay Management System. The diagram visually represents the various steps and procedures involved in the system, enabling the identification of inefficiencies, redundancies, and bottlenecks. After logging into the system, the user undergoes an authentication process. If the user is not recognized, they are required to register before attempting to log in again. However, if the unrecognized user is a resident, they must personally visit the barangay office for in-person registration. Upon successful authentication,

residents gain access to the Resident dashboard. Within this dashboard, residents can view Barangay information, Officials, Announcements, and their own Information. Furthermore, the resident dashboard allows users to submit requests, and process online payments.

In contrast, if the logged-in user is an admin or staff member, they gain access to the Admin/Staff Dashboard. This dashboard provides functionalities to manage resident information, requests, barangay information, officials, and announcements. Additionally, there is an option to print the information when needed. The flowchart clearly demonstrates that different privilege levels are granted based on the user's status. Administrators possess the ability to add, update, or delete records, whereas non-administrators are limited to adding or updating records. Lastly, the flowchart includes a step for logging out of the system, ensuring security and preserving privacy.

### **Block Diagram**

Researchers and Developers are tasked with understanding, designing, and potentially implementing the "E-RECORD: A Barangay Management System for Barangay Parian." The primary goal is to ensure the efficient and effective functioning of the system to streamline processes within Barangay Parian. Here is how the system operates from their perspective:



**Figure 14: Block Diagram**

### 1. Block Diagram Description:

**The system consists of three main components:**

- Staff/Admin Container: This container houses the functionalities related to staff and administrative operations.
- Web-Based Barangay Management System Container: This central component is the heart of the system, providing a web-based interface for both staff/admin and residents.
- Resident Container: This container focuses on functionalities available to the residents.

## **2. Activity Flow:**

### **Staff/Admin Interaction:**

- Staff/Admin initiates a connection to the system via the web page.
- Staff/Admin's interaction with the system begins by logging in or, if not a valid user, creating a new account.
- Similarly, a resident can connect to the system. However, if the resident creates an account, the staff/admin must review and approve the account via the Web-Based Barangay Management System before the resident can log in.
- Once logged in, the Staff/Admin can:
  - Browse and manage resident account requests.
  - Create or Modify Barangay Information, Announcements, Events, and Services.
  - Browse and generate requested clearances/certificates.
  - Perform administrative tasks.
  - Log out.
- Changes made by the Staff/Admin, such as Barangay Information, Announcements, Events, and Services, are displayed on the Web-Based Barangay Management System for all users to see.
- When the Staff/Admin generates clearances/certificates, the resulting documents are accessible and printable through the Web-Based Barangay Management System.

- Staff/Admin can also manage complaint information and status, which is displayed on the Web-Based Barangay Management System.

**Resident Interaction:**

- Once logged in, a resident can:
- Browse Barangay Information, Announcements, Events, and Services.
- Request clearances/certificates.
- Log out.
- The resident's browsing activities display content from the Web- Based Barangay Management System.
- When a resident requests a clearance/certificate, the Staff/Admin can review and generate the requested document through the Web- Based Barangay Management System. The generated document is then available for the resident to view and print.

**3. System Benefits:**

- The system streamlines administrative tasks and resident interactions within Barangay Parian.
- It provides a central platform for both Staff/Admin and residents to access and manage relevant information and services.
- The system enhances transparency, accessibility, and efficiency in managing barangay-related processes.

## **Software Design, Products and/or Processes**

The researchers designed a user-friendly interface for all the functionalities, including relevant buttons, informational forms, icons, and a suitable background style and color, to make the system easily understandable and meet the users' satisfaction. The following images depict the interfaces of the administrator and staff.



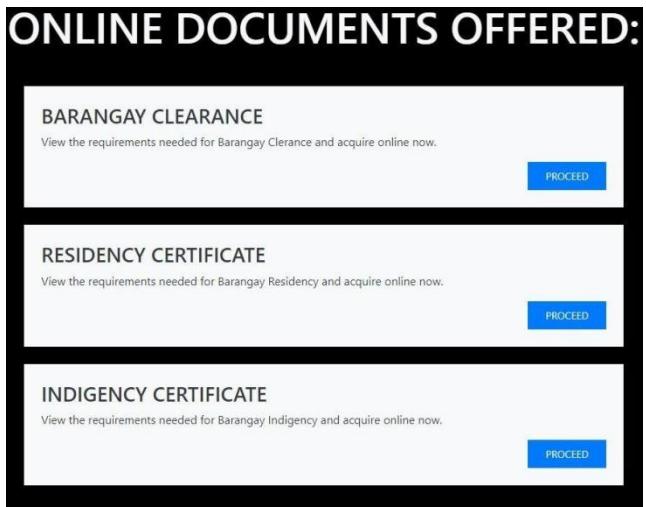
**Figure 15: Home Page**

Figure 15 depicts the Home Page of the E-RECORD: A Barangay Management System for Barangay Parian. This page shows the welcome banner with the following details such as barangay location, office hour and the official email address.



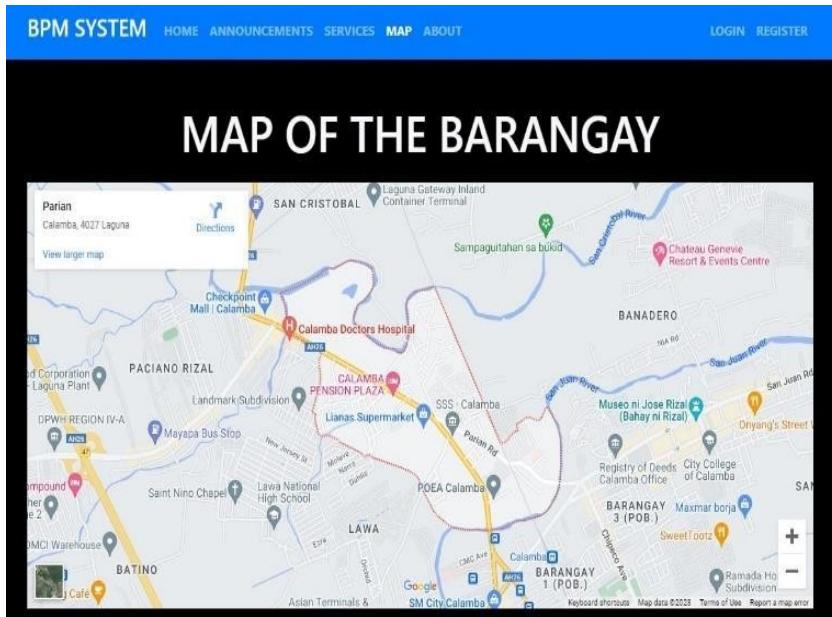
**Figure 16: Anouncement**

Figure 16 depicts the Announcement Portal of the E-RECORD: A Barangay Management System for Barangay Parian. It contains the upcoming programs, activities, and projects that will be held by the barangay.



**Figure 17: Resident's Request Portal**

Figure 17 depicts the Resident's Request Portal of the E-RECORD: A Barangay Management System for Barangay Parian. This page is consist of the selection of certificates that the system offers to the residents.



**Figure 18: Map of the Barangay**

Figure 18 depicts the Map of the E-RECORD: A Barangay Management System for Barangay Parian. This page shows the location of Barangay Parian in a more detailed and digital form.

**BACKGROUND OF BARANGAY**

April 21, 2001 was the day that changed the course of history of Calamba. After over seven years of waiting, bangga -Copy Calamba became the second component city of the Province of Laguna by virtue of Republic Act No. 9024, "An Act Converting the Municipality of Calamba, Province of Laguna into a Component City to be known as the City of Calamba". R.A. 9024 was signed into law by Her Excellency President Gloria Macapagal Arroyo on March 5, 2001 at the Malacanang Palace.

**MISSION AND VISION**

**MISSION:** Work in partnership with its citizenry to deliver exceptional, effective, fiscally responsible, and gender-responsive services while preserving and protecting the environment and enhancing a high standard of community living. **VISION:** Calamba is a globally-competitive green city with a progressive inclusive economy and resilient community where God-centered people learn, live, and work in a safe, secure, and healthy environment, and ably led by proactive and integrity-driven leaders.

**POPULATION**

CENSUS	COUNT
Population	6

**ORGANIZATIONAL CHART**

RODRIC P. PEREZ Barangay Chairman	HON. AUREA C. GOBANGO Councilor 1	HON. MA. URSULA V. SANTOS Councilor 2
<b>HON. MARIO F. DIAMANTE Councilor 3</b>	<b>HON. RUBEN U. LIRIO Councilor 4</b>	<b>HON. FREDERICO A. MAGORA Councilor 5</b>

**Figure 19: About us**

This tab shows the background information of the barangay, its mission and goals, its logo, and an organizational chart that shows all the officials within the barangay.

## BARANGAY PARIAN



Show  
[Forgot Password?](#)

Don't have an account? [Register Here](#)

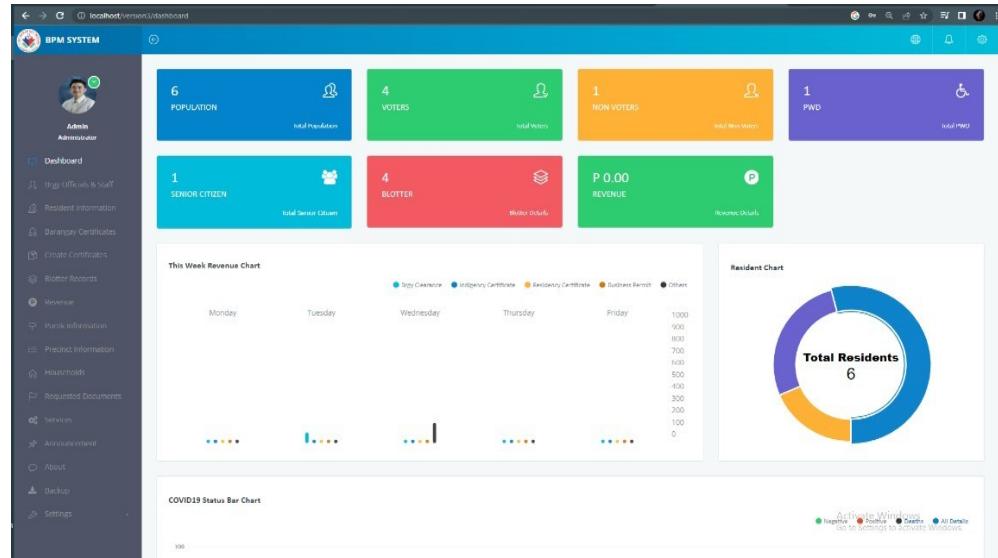
**Figure 20: Login Portal**

Figure 20 depicts the Login Portal of the E-RECORD: A Barangay Management System for Barangay Parian. Access to the system is restricted to authorized users, who are required to input a valid username and password. Only the administrator has the capability to create new accounts with access to the system.

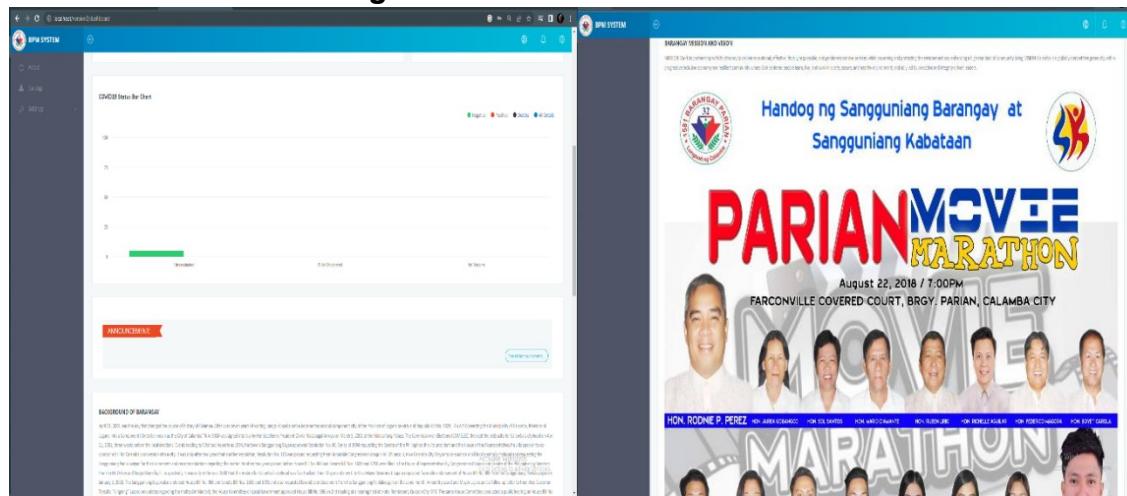


***Figure 21: Resident's Registration Portal***

Figure 21 depicts the Resident's Registration Portal: A Barangay Management System for Barangay Parian. This page shows the input boxes needed to be filled out by the residents to officially register their personal accounts.

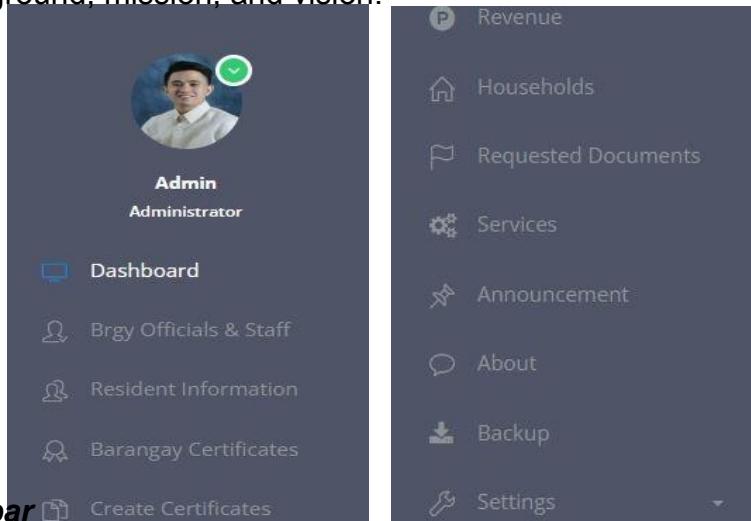


**Figure 22: Dashboard – Statistic**



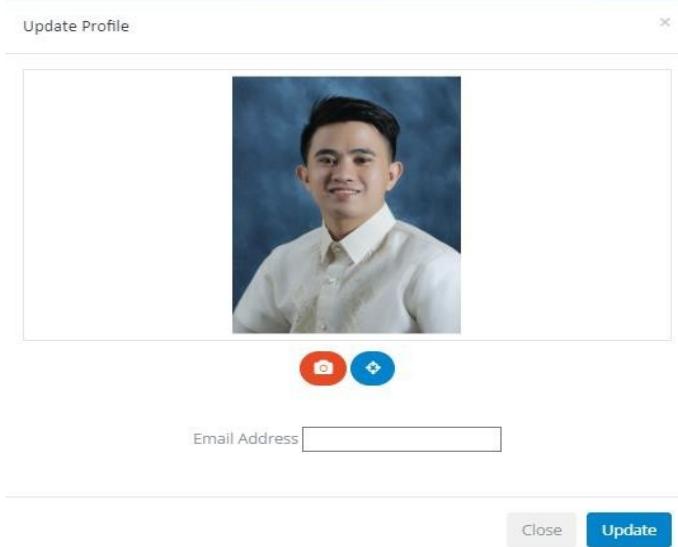
**Figure 23: Dashboard - Other Information**

The figures 22 and 23 depict the Dashboard of the E-RECORD: A Barangay Management System for Barangay Parian. This dashboard provides an overview of the system's functions and features, including the total number of registered residents, total revenue generated for the week, and buttons for generating barangay clearance, creating certificate of indigency and other certificates that the system offers. Additionally, the dashboard showcases the barangay's background, mission, and vision.



**Figure 24: Sidebar**

The Figure 24 below, depicts the sidebar of the E -RECORD: A Barangay Management System for Barangay Parian. This bar allows users to access various features of the system, including the dashboard, information about barangay officials and staff, resident information, barangay certificates, certificate creation, revenue, precinct information, households, requested documents, services, announcements, and the Logout button.



**Figure 25: Update Profile**

The figure 25 depicts the functionality for updating the profile picture of the currently logged-in user.

Current Barangay Officials				
Fullscreen	Chairmanship	Position	Status	Action
	HONORINE P. PEREZ PRESIDING OFFICER	Barangay Chairman	Active	
	HON. AURRA C. GORANGCO COMMITTEE ON AGRICULTURE	Councilor 1	Active	
	HON. MA. URSULA V. SANTOS COMMITTEE ON HEALTH / SPORTS	Councilor 2	Active	
	HON. MARIO F. DIAMANTE COMMITTEE ON PEACE AND ORDER / SPORTS	Councilor 3	Active	
	HON. RUBEN U. LIBO COMMITTEE ON APPROPRIATION	Councilor 4	Active	
	HON. FREDERICO A. MAGORA COMMITTEE ON SPORTS	Councilor 5	Active	
	HON. RICHELLE D. AGUILAR NONE	Councilor 6	Active	
	HON. NICOLAS B. CAROLA COMMITTEE ON ENVIRONMENT	Councilor 7	Active	
	MR. JOMARI A. TEÑA COMMITTEE ON GAD	Barangay Secretary	Active	

**Figure 26: Barangay Officials and Staff**

The Figure 26 depicts the Barangay Officials and Staff feature. This section of the system provides a list of barangay officials and staff members, which can be viewed using the search box and pagination tools. Both the user and the

administrator have the ability to view and edit the information, however, the delete function can only be executed by the administrator. Additionally, the Admin can modify information regarding newly elected officials.

Create Official

Officer Avatar

person.png

Drag and drop or click to replace

Fullname  
Enter Fullname

Chairmanship  
Select Official Chairmanship

Position  
Select Official Position

Term Start  
dd/mm/yyyy

Term End  
dd/mm/yyyy

Status  
Active

**Create**

**Figure 27: Add Barangay Officials and Staff**

The Figure 27 depicts the modal form used to add a Barangay Official or Barangay Staff. This feature enables both users and administrators to efficiently input and manage information regarding the barangay's officials and staff members.

Resident Information

Show 10 entries

Print Export CSV

Fullname	National ID	Alias	Birthdate	Age	Civil Status	Gender	Purok	Voter Status	Alived/Deceased	PWD	Action
DIGAMON, GARRY BETIL	12-5649-45989	GARRY	November 07, 2001	21	Single	Male	SITIO 1	Yes	<span>Alive</span>	No	<span>Edit</span> <span>View</span> <span>Print</span> <span>Delete</span>
JEREZ, JOHN JERRICK BRIONES	11286548972	JFR	April 22, 1997	26	Single	Male	SITIO 2	Yes	<span>Alive</span>	No	<span>Edit</span> <span>View</span> <span>Print</span> <span>Delete</span>
SALTIVAN, ABIGAIL DÑA	112233445566	Abby	April 11, 2002	21	Single	Female		Yes	<span>Alive</span>	No	<span>Edit</span> <span>View</span> <span>Print</span> <span>Delete</span>
JEREZ, JAMES JOSHUA BRIONES	123-456-789	James	May 03, 2023	0	Single	Male	SITIO 3	No	<span>Alive</span>	No	<span>Edit</span> <span>View</span> <span>Print</span> <span>Delete</span>
ALCANTARA, ELIE RODRIGUEZ	LIE		March 15, 1996	27	Single	Female	PUROK 5	Yes	<span>Alive</span>	Yes	<span>Edit</span> <span>View</span> <span>Print</span> <span>Delete</span>

Showing 1 to 5 of 5 entries (filtered from 6 total entries)

Previous Next

Figure 28 depicts the functionality for creating, viewing, and editing resident information. Both users and administrators have the ability to perform these actions, with the exception of deletion, which is only accessible to administrators. The figure also highlights the function to generate identification cards for residents. An authorized user can generate an ID card after completing the payment form.

Resident Certificate Issuance													
Show 10 entries <input type="button" value="Search"/>													
Fullname	National ID	Alias	Birthdate	Age	Civil Status	Gender	Purok	Voter Status	Alived/Deceased	PWD	Action		
DIGAMON, GARRY BETIL	12-5649-45989	GARRY	November 07, 2001	21	Single	Male	Sitio 1	Yes	Alive	No			
JEREZ, JOHN JERRICK BRIONES	11286548972	JER	April 22, 1997	26	Single	Male	Sitio 2	Yes	Alive	No			
SALTIVAN, ABEGAIL OÑA	112233445566	Abby	April 11, 2002	21	Single	Female		Yes	Alive	No			
JEREZ, JAMES JOSHUA BRIONES	123-456-789	james	May 03, 2023	0	Single	Male	Sitio 3	No	Alive	No			
ALCANTARA, ELIE RODRIGUEZ	LIE		March 15, 1996	27	Single	Female	PUROK 5	Yes	Alive	Yes			

Showing 1 to 5 of 5 entries (filtered from 6 total entries) Previous Next

**Figure 29: Certificate Issuance**

Figure 29 displays the Barangay Certificate generation and printing function. The authorized user is able to generate and print certificates, which include information about the residents' request. However, before printing the certificates, the payment form must be filled out.

Manage Certificates			
Show 10 entries <input type="button" value="Search"/>			
No.	Title	Salutation	Action
1	CUTTING CERTIFICATION	DEAR, MR/ MRS	
2	CERTIFICATION TO FILE ACTION	DEAR, MR/MRS	

Showing 1 to 2 of 2 entries Previous Next

**Figure 30: Manage Certificate**

Figure 30 displays the records of certificates created within the system. The admin has the ability to view and delete the entries, as well as the option to create new certificates.

The screenshot shows a table titled 'Blotter/Incident Complaint' with columns: Case No., Complainant, Respondent, Victim(s), Blotter/Incident, Status, and Action. There are four entries listed:

Case No.	Complainant	Respondent	Victim(s)	Blotter/Incident	Status	Action
1	JHUNEL B. LAGUTIN	JOMAR TEÑA	JHUNEL B. LAGUTIN	Incident	<span style="background-color: red;">Action</span>	<span style="color: red;">Delete</span>
2	ANGEL DELA CRUZ	MARIAN	ANGEL DELA CRUZ	Incident	<span style="background-color: green;">Settled</span>	<span style="color: green;">Edit</span>
3	MAJORIE CLEOFAS	JAYR	MARIAN	Incident	<span style="background-color: blue;">Unresolved</span>	<span style="color: blue;">Edit</span>
5	JEROME DIMAYUYO	JOMAR TEÑA	JUNJIN BIADOR	Incident	<span style="background-color: red;">Action</span>	<span style="color: red;">Delete</span>

Below the table, it says 'Showing 1 to 4 of 4 entries'. To the right is a sidebar with five colored boxes representing different case statuses:

- Red box: 2 ACTIVE (Active Cases)
- Green box: 1 SETTLED (Settled Cases)
- Orange box: 0 SCHEDULED (Scheduled Cases)
- Cyan box: 1 DISMISSED (Dismissed Cases)
- Blue box: 0 ENDORSED (Endorsed Cases)

**Figure 31: Blotter**

Figure 31 displays the entries for Blotter, Incident, and Complaints, where the authorized user is able to view statistical data regarding active, settled, scheduled, dismissed, and endorsed cases. The authorized user also has the ability to delete and add new cases.

The screenshot shows a table titled 'Revenue Management' with columns: Date, Purpose, Recipient, Details, Amount(P), and Username. There are nine entries listed:

Date	Purpose	Recipient	Details	Amount(P)	Username
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-05			CERTIFICATION TO FILE ACTION Payment	20.00	admin
2023-07-04	GARRY BETIL DIGAMON		Barangay Clearance Payment	30.00	admin
2023-07-04	ELIE RODRIGUEZ ALCANTARA		Barangay Clearance Payment	30.00	admin

Below the table, it says 'Showing 1 to 9 of 9 entries'. To the right is a sidebar with two boxes:

- Red box: 0 TODAY'S TRANSACTION
- Green box: 9 TOTAL TRANSACTIONS

**Figure 32: Revenue Management**

Figure 32 displays the transaction payment records with the following information: date, purpose, recipient, details, amount, and username. The authorized user is able to filter the records using the start and end dates, as well as view statistical data for today's transactions and the total transactions.

Households Information		
<a href="#">Copy</a> <a href="#">CSV</a> <a href="#">Excel</a> <a href="#">PDF</a> <a href="#">Print</a> Show 10 entries <input type="button" value="Search"/>		
House No. ▲	Details ▲	Action ▲
002		
154	PUROK 3 MABOLO ST	
16-A		

Showing 1 to 3 of 3 entries      Previous **1** Next

**Figure 33: Household Information**

Figure 33 displays the Households entries with a statistical summary of the Total Number of Houses. The authorized user has the capability to generate and print these entries in CSV, Excel, and PDF formats.

Requested Documents								
Show 10 entries <input type="button" value="Search"/>								
No. ▲	Date ▲	Name ▲	Services ▲	Purpose ▲	Payment Method ▲	Ref. No. ▲	Status ▲	Action ▲
1	Jul. 12, 2023	GARRYBETIL DIGAMON	INDIGENCE CERTIFICATE	lol	Cash on Pick-up		Received	
2	Jul. 11, 2023	GARRYBETIL DIGAMON	BARANGAY CLEARANCE	empowerment	Cash on Pick-up		Cancelled	
3	Jul. 10, 2023	GARRYBETIL DIGAMON	RESIDENCY CERTIFICATE	empowerment	Cash on Pick-up		Pending	

Showing 1 to 3 of 3 entries      Previous **1** Next

**Figure 34: Requested Documents**

Figure 34 displays the Requested Documents. This page indicates the status of the documents requested by the residents.

Services Management								
Show 10 entries		Search:						
No.	Title	Requirements	Details	Fees	Phone Number	Qr Code	Status	Action
1	BARANGAY CLEARANCE	CEDULA	View the requirements needed for Barangay Clearance and acquire online now.	30.00	09156792144		Active	 
2	RESIDENCY CERTIFICATE	CEDULA and BRGY CLEARANCE	View the requirements needed for Barangay Residency and acquire online now.	55.00	09156792144		Active	 
3	INDIGENCY CERTIFICATE	cedula	View the requirements needed for Barangay Indigency and acquire online now.	40.00	09156792144		Active	 

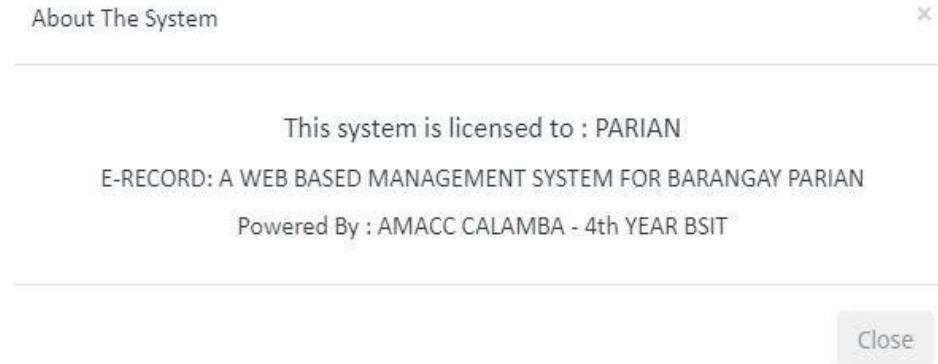
**Figure 35: Services Management**

Figure 35 displays the Services Management. This page indicates the details of the documents offered by the system such as fees, phone number, QR code, and status. Only the authorized user can view and edit the data.

Announcement Management								
Show 10 entries		Search:						
No.	What	Description	When	Where	Who	File	Status	Action
1	EDUCATIONAL ASSISTANCE GRADE 12 SENIOR HIGH	EDUCATIONAL ASSISTANCE PARA SA ISKO AT ISKA! Ito po ay para sa mga kabataan ng Barangay Parian na nag-aaral ng Grade 12 ngayong taon. REQUIREMENTS: Letter addressed to Hon. Rodnie P. Perez (handwritten) Certified True copy of Registration Form or Assessment Form or Certificate of Enrollment Certified True copy of Grades with 80% Average Photocopy of School ID Voters Certification ( If minor ; Voters Certification or Voters ID of Parents 2by2 of ID Picture	July 03, 2023 11:00:00 AM	New Barangay Hall, Farcoville Covered Court ng Barangay Parian. Kaya Kabataan ng Barangay Parian	SK ROLITO R. CARERA		Active	 
2	INTER BARANGAY BASKETBALL SCHEDULE	Ating suportahan ang manlalaro ng Barangay Parian sa Inter-Barangay Basketball 2023. Halina't saksihin sa darating na June 9, 2023 sa oras ng 5:00 ng hapon sa Barangay Paciano Covered Court, Calamba City kalabang ang Barangay Saimsim. Laban Barangay Parian! BARANGAY CHAIRMAN : Kap. Rodnie Perez SK CHAIRMAN : Christopher Lat GRAPHIC ARTIST AND PHOTOGRAPHER : SK Rolito Rea Cabrera COACHES: Junell Elag, Jonathan Garcia, Bryan Sudano and Arnold Raza	September 06, 2023 05:00:00 PM	Barangay Paciano Covered Court, Calamba City	BARANGAY CHAIRMAN : Kap. Rodnie Perez SK CHAIRMAN		Active	 

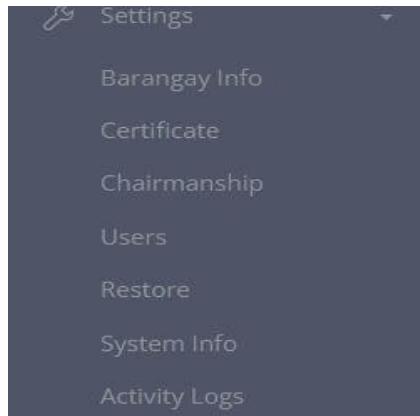
**Figure 36: Announcement Management**

Figure 36 displays the entries of Barangay Announcements. The authorized users can view, update, and delete the information.



**Figure 37: About the System**

The Figure 37 displays a modal containing information about the system, including its version and related details.



**Figure 38: Settings – Sidebar**

Figure 38 displays the system's settings including the Barangay Information, Certificate Settings, Positions, User Management, Restore Data, System Information, and Activity Logs

Street	Purok/Sitio
MABOLO ST.	Sitio
Barangay Name	Town Name
PARIAN	CALAMBA CITY
Province Name	Barangay Contact Number
LAGUNA	0456421398
Barangay Email Address	Start Year
barangaynatinto@gmail.com	1990
Barangay Background	End Year
	2024
Mission/Vision	
MISSION: Work in partnership with its citizenry to deliver exceptional, effective, fiscally responsible, and gender-responsive services	
Barangay Map Url	
Municipality/City Logo	Barangay Logo
	

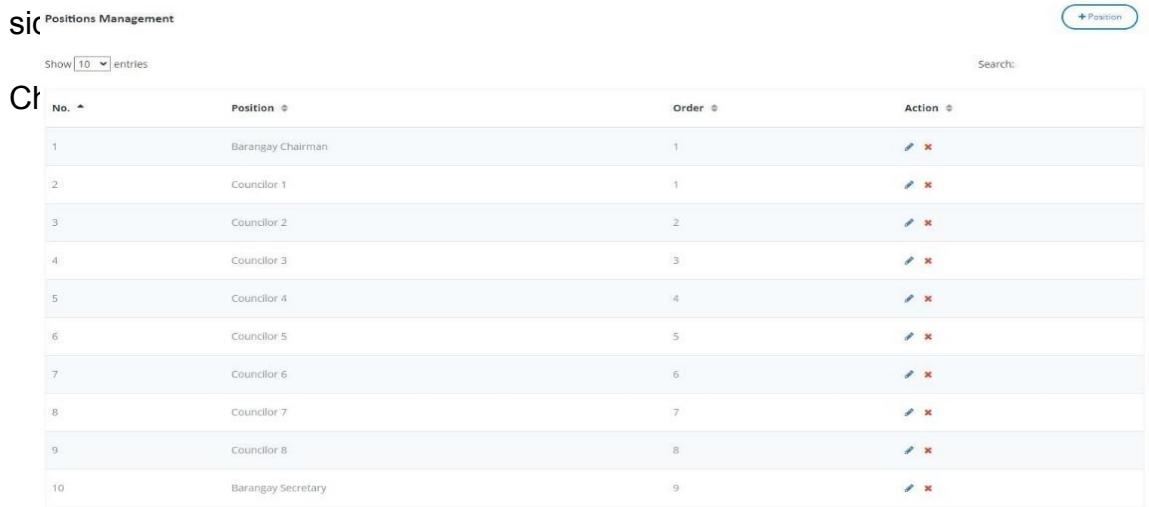
**Figure 39: Settings - Barangay Info**

The Figure 39 displays the data of the Barangay Information, which allows the authorized user to update details such as the street, sitio, barangay name, town name, province name, contact number, email address, start year, end year, background, municipality/city/barangay logo, mission and vision statement.

Certificate Settings	
Select Certificate Sidebar Background Color	transparent
Flag Image	
Motto Image	
Certificate Watermark	
Barangay Captain Signature	
<small>Note: pls upload only image and not more than 20MB.</small>	
<input type="button" value="Cancel"/> <input type="button" value="Upload"/>	

**Figure 40: Settings – Certificate**

Figure 40 shows the settings for certificates, where the authorized user can update and upload certificate designs and images, such as the certificate



The screenshot shows a table titled 'Positions Management' with 10 entries. The columns are 'No.', 'Position', 'Order', and 'Action'. The 'Position' column lists roles such as Barangay Chairman, Councilor 1 through 8, and Barangay Secretary. The 'Order' column shows the sequence from 1 to 9. The 'Action' column contains edit and delete icons.

No.	Position	Order	Action
1	Barangay Chairman	1	
2	Councilor 1	1	
3	Councilor 2	2	
4	Councilor 3	3	
5	Councilor 4	4	
6	Councilor 5	5	
7	Councilor 6	6	
8	Councilor 7	7	
9	Councilor 8	8	
10	Barangay Secretary	9	

**Figure 41: Settings - Positions Management**

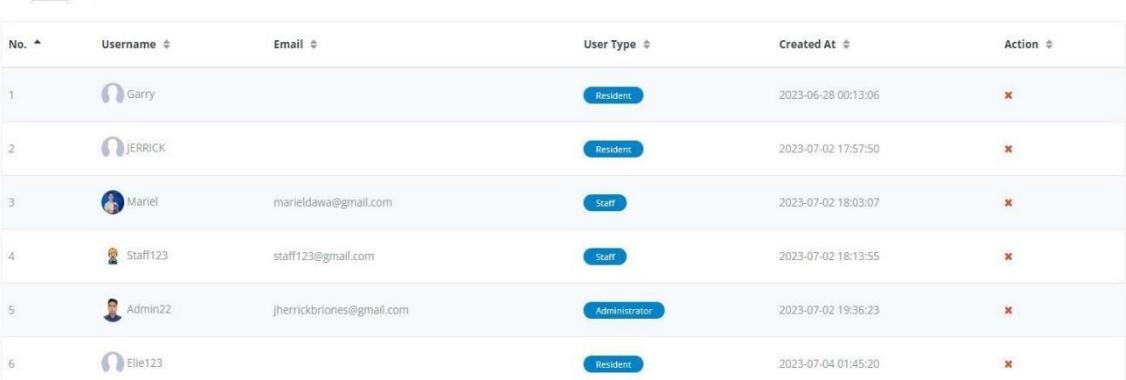
Figure 41 shows the entries of positions where the authorized user can add, view and delete contents.



Chairmanship Management

Show 10 entries

No.	Title	Action
1	PRESIDING OFFICER	

User Management

Show 10 entries

No.	Username	Email	User Type	Created At	Action
1	Garry		Resident	2023-06-28 00:13:06	
2	JERRICK		Resident	2023-07-02 17:57:50	
3	Mariel	marieldawa@gmail.com	Staff	2023-07-02 18:03:07	
4	Staff123	staff123@gmail.com	Staff	2023-07-02 18:13:55	
5	Admin22	jherrickbriones@gmail.com	Administrator	2023-07-02 19:36:23	
6	Elle123		Resident	2023-07-04 01:45:20	

**Figure 42: Settings - Chairmanship Management**

Figure 42 shows the entries of Chairmanship where the authorized user can add and delete contents.

**Figure 43: Settings - User Management**

Figure 43 shows the entries of user where the authorized user can add and delete contents.

System Info ×

System Name  
E-RECORD: A WEB BASED MANAGEMENT SYSTEM FOR BARANGAY PARIAN

System Acronym  
BPM SYSTEM

Powered By:  
AMACC CALAMBA - 4th YEAR BSIT

Close Update

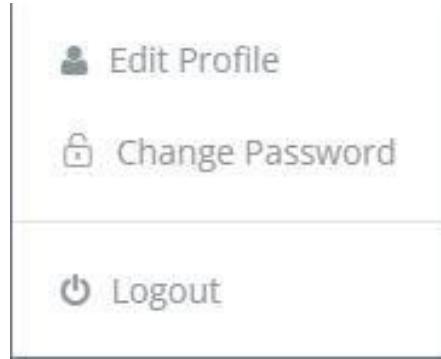
**Figure 44: Settings - System Info**

Figure 44 displays information on the system, including its name and the researchers that created it.

Activity Logs			
Show <input type="button" value="10"/> entries	Search:		
No.	Activity	Username	Date
1	User loggedin	admin	July 09, 2023 08:58:14 PM
2	User logged out.	garry	July 06, 2023 05:07:43 PM
3	Request received	garry	July 06, 2023 05:07:39 PM
4	User loggedin	garry	July 06, 2023 05:07:09 PM
5	User logged out.	admin	July 06, 2023 05:06:57 PM
6	Request change status	admin	July 06, 2023 05:06:53 PM
7	Request change status	admin	July 06, 2023 05:06:48 PM
8	Request change status	admin	July 06, 2023 05:06:44 PM
9	Request deleted: 14	admin	July 06, 2023 05:06:37 PM
10	User loggedin	admin	July 06, 2023 05:06:06 PM

**Figure 45: Settings - Activity Log**

Figure 45 shows the list of activities made by the authorized users.



**Figure 46: Logout**

Figure 46 shows the feature for logout function. When clicked, the logged in user will be logged out from the system.

### **Likert Scale Conversion**

Utility	Interpretation	Range
5	Strongly Agree	4.50-5.00
4	Agree	3.50-4.49
3	Neutral	2.50-3.49
2	Disagree	2.50-3.49
1	Strongly Disagree	2.50-3.49

**Table 7: Likert Scale Conversion**

The researchers utilized the Likert scale to gather the opinions of the respondents, which helped in categorizing and comprehending the views and perspectives through research survey questionnaires. The results were evaluated using the computation of weighted mean. The formula for computing the weighted mean and the Likert scale conversion were used to interpret the outcome of the survey. The weighted mean was utilized to estimate the evaluation result, which was calculated by the following formula:

Weighted mean = [Strongly Agree (SA) (5)] + [Agree (A) (4)] + [Neutral (N) (3)] + [Disagree (D) (2)] + [Strongly Disagree (SD) (1)] / n, where n represents the number of populations.

The weighted mean of the answers in each question of the survey would also be calculated using the Likert scale, which has five possibilities, Strongly

Agree, Agree, Neutral, Disagree, and Strongly Disagree. The 5-point Likert scale was utilized to simplify the survey for the respondents, as it presents options numbered from one to five, ranging from "strongly disagree" to "strongly agree".

## **Development and Testing**

The Agile software model allows for feedback and revisions at each stage, which can help to identify and fix issues earlier in the development process. User Acceptance Testing (UAT) was used in this model to involve end-users in the testing process. This provides a way to validate that the system meets the user's requirements and is fit for purpose. User Acceptance Testing (UAT) ensures that the system is usable, efficient, and effective in fulfilling the user's needs.

In the Agile software model, User Acceptance Testing (UAT) was conducted after each iteration, giving the user a chance to see the functionality and provide feedback for improvement. By incorporating user feedback into the development process, the system can be continuously refined and improved to meet the user's needs. This can lead to a better final product that is more likely to be accepted by the end-users. The researchers conducted the testing using Alpha Testing and Beta Testing.

### **Alpha Testing**

Alpha Testing is an essential stage of the software development process, in which developers conduct initial tests to ensure the quality and functionality of the product before moving on to the next testing phase. The researcher and

developer ensure that the software developed meets the standards and specifications required by the clients or end-users.

During Alpha Testing, a series of tests were conducted to detect and resolve issues and bugs that may arise during the development process. This includes testing the system's performance, functionality, and compatibility with different operating systems, browsers, and hardware configurations.

To ensure the accuracy and completeness of the Alpha Testing process, a set of detailed and comprehensive tables were utilized. These tables helped document and track the time, functionality, and status of each test performed during the Alpha Testing phase. Through these tables, developers can identify the specific areas that require further testing or optimization, and subsequently make the necessary adjustments to improve the software's overall performance and functionality.

Once the Alpha Testing phase is complete and all issues have been resolved, the software is then forwarded to the next testing phase, which is Beta Testing. By thoroughly testing the software during the Alpha phase and incorporating user feedback, developers can ensure that the software is of high quality and is more likely to meet the requirements and expectations of the end-users.

## **Beta Testing**

Beta testing is a critical stage in the software development process as it involves actual users of the application testing the software in a real environment.

The purpose of beta testing is to ensure that the software meets user acceptance criteria and is ready for real-time use. During beta testing, users have the opportunity to interact with the software and provide feedback on its functionality and performance. This feedback is then used to identify any issues and make necessary changes to the software to improve its usability and functionality.

### **System Implementation Plan**

The proposed system has been designed to specifically cater the needs of Barangay Parian and will serve as a valuable tool for managing daily records. The system will also be made available to future researchers as a reference guide for developing similar systems in the future. The researchers and developers responsible for the system will ensure its continued maintenance and upkeep to ensure that it remains up-to-date and meets the evolving needs of the Barangay community.

In terms of implementation, a carefully planned and phased approach will be undertaken to ensure the smooth transition from the existing manual system to the new automated system. This will involve identifying key stakeholders, defining user requirements, designing the system architecture, developing the system, testing, and finally, deploying the system. Close collaboration with Barangay

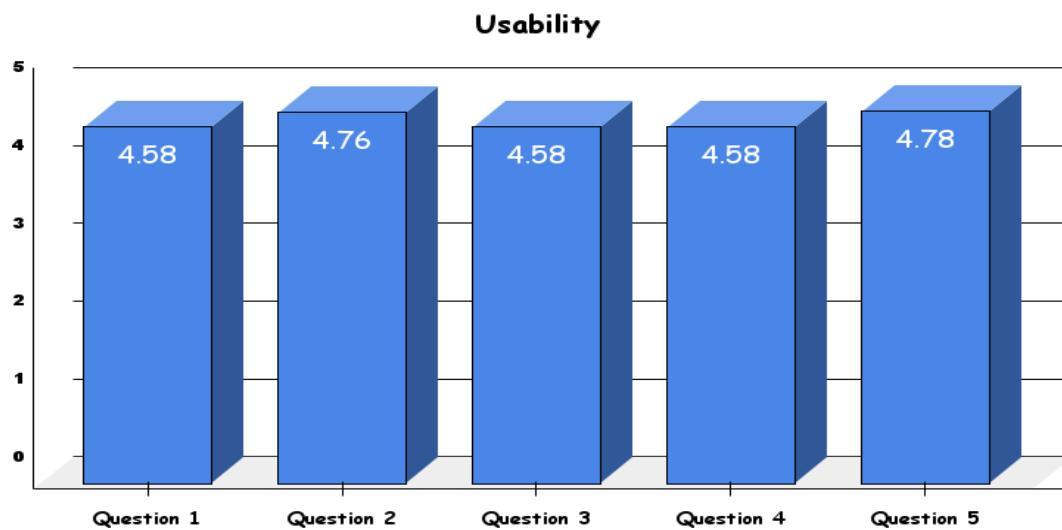
officials and staff will be essential to ensure understanding and acceptance of the system, and to identify any necessary modifications that need to be made to better align with needs. Comprehensive training and support will also be provided to ensure the effective and efficient use of the system by all stakeholders.

To evaluate the level of satisfaction of the users to the system using ISO-IEC25010, the following criteria were observed such as Usability, Functional Suitability, Performance Efficiency, Reliability, Compatibility, Portability, Security and Maintainability. The researchers used quantitative approach of mixed method in order to meet the above-mentioned objectives. The researchers provided a survey questionnaire as the instrument applied to gather data. A survey is a type of research that gathers data from a preselected group of people to get information and insights on a variety of topics. In order to get different perspective or point of view of the respondents, the researchers divided the rate into one- to-five which 1 is equivalent to lowest rate the “strongly disagree”, 2 is equivalent to “disagree”, 3 is equivalent to “neutral”, 4 is equivalent to “agree”, while the 5 will be the highest rate which is the “strongly agree”. The researchers conducted a survey on Barangay Parian, where it has 50 respondents to evaluate the system, 35 Barangay Officials and 15 residents. The questionnaire is group into eight criteria with five specific characteristics each namely usability, functional suitability, performance efficiency, reliability, compatibility, portability, security and maintainability of ISO-IEC25010 to evaluate or determine the quality of the system.

After conducting the survey to the Barangay Parian, the researchers summed up and tallied all the data gathered from the answers of the respondents. The researchers calculated the Weighted Mean of each question and interpret using Likert Scale Conversion. The results will be presented below through the use of a vertical column chart.

## Usability

Usability is a level to which a system can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified condition of use.



**Figure 47**

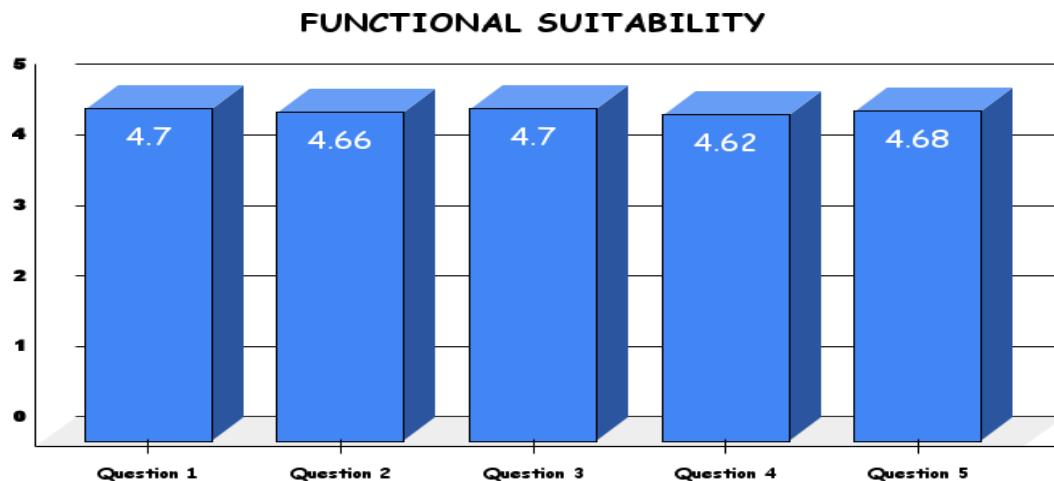
In figure 47, the respondents were asked about the system's rate in terms of its usability. Question 1 asked about "The system is very easy to use" which the respondents total weighted mean rates to 4.8 that interpreted as "Strongly Agree". Likewise, the respondents are asked about "The system texts are

readable” on

Question 2, which it has 4.76 rate that is interpreted as “Strongly Agree”. In Question 3, the respondents asked about “The system can be used with minimal supervision” in which the respondents rate the system with 4.52 that is equivalent to “Strongly Agree” interpretation. Furthermore, the respondents’ rate 4.58 to the Question 4 “The system’s various functions are well integrated” which interpreted as “Strongly Agree”. Lastly, Question 5 asked respondents about “The system visuals are good” in which they rate 4.78 that is interpreted as “Strongly Agree”. Overall, the respondents’ rate has a general weighted mean of 4.65, where 66.4% are strongly agree and 32.8% agree with the system’s usability and 0.8% were neutral.

### **Functional Suitability**

Functional Suitability characteristic represents the degree to which a system provides functions that meet stated and implied needs when used under specified conditions.



**Figure 48**

In figure 48, the respondents are asked about the system's rate in terms of its functional suitability. Question 1 asked about "The system makes easier to record information" which the respondents total weighted mean rates to 4.7 that interpreted as "Strongly Agree". Likewise, the respondents are asked about "The system can generate certificates" on Question 2, which it has 4.66 rate that is interpreted as "Strongly Agree". In Question 3, the respondents asked about "The system provides accurate and complete data" in which the respondents rate the system with 4.7 that is equivalent to "Strongly Agree" interpretation. Furthermore, the respondents' rate 4.62 to the Question 4 "The system shows updated information" which interpreted as "Strongly Agree". Lastly, Question 5 asked respondents about "The system makes all the data organized" in which they rate 4.68 that is interpreted as "Strongly Agree". Overall, the respondents' rate has general weighted mean of 4.67, where 69.2% were strongly agree and 28.8% respondents were agree with the system's functional suitability and 25% were neutral.

### **Performance Efficiency**

Performance Efficiency characteristic represents the performance relative to the number of resources used under stated conditions.



**Figure 49**

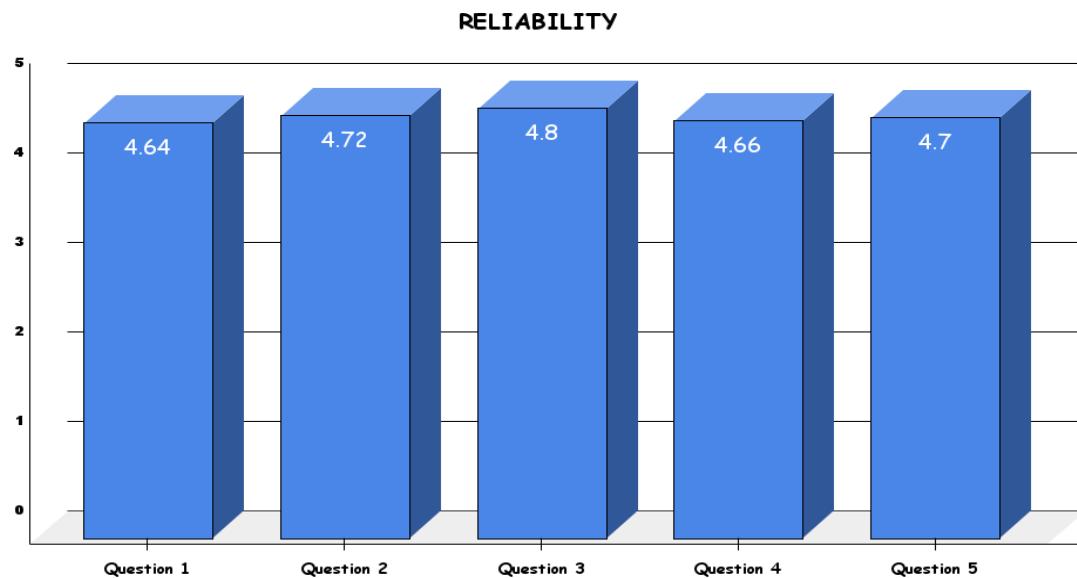
In figure 49, the respondents were asked about the system's rate in terms of its performance efficiency. Question 1 asked about "The system is easy to process" which the respondents total weighted mean rates to 4.62 that interpreted as "Strongly Agree". Likewise, the respondents are asked about "The system provides faster transaction" on Question 2, which it has 4.62 rate that is interpreted as "Strongly Agree". In Question 3, the respondents asked about "The system can automatically generate certificates" in which the respondents rate the system with

4.62 that is equivalent to "Strongly Agree" interpretation. Furthermore, the respondent's rate 4.74 to the Question 4 "The system data and information are secured" which interpreted as "Strongly Agree". Lastly, Question 5 asked respondents about "The system can view the total of records" in which they rate 4.76 that is interpreted as "Strongly Agree". Overall, the respondent's rate has general weighted mean of 4.66, where 68.8% were strongly agree and 29.6%

respondents were agree while 1.6% were neutral with the system's performance efficiency.

## Reliability

Reliability is the level to which a system, product or component performs specified functions under specified conditions for a specified period of time.



**Figure 50**

In figure 50, the respondents were asked about the system's rate in terms of its reliability. Question 1 asked about "The system can identify authorized users and unauthorized users" which the respondent's total weighted mean rates to

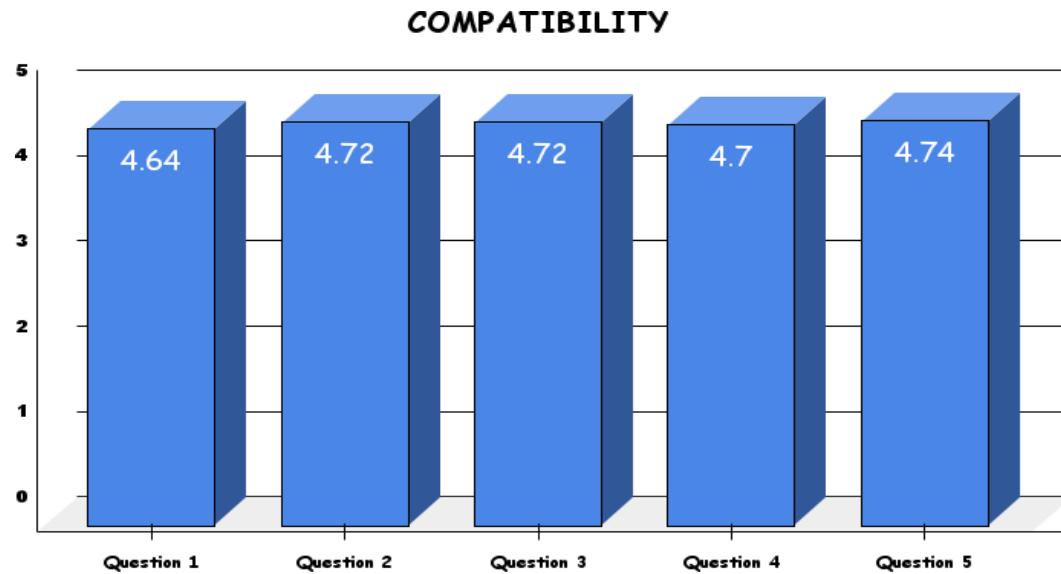
4.64 that interpreted as "Strongly Agree". Likewise, the respondents were asked about "The system is accessible and operational when required use" on Question 2, which it has 4.72 rate that is interpreted as "Strongly Agree". In Question 3, the respondents were asked about "The system provides correct computation of data

records" in which the respondents rate the system with 4.8 that is equivalent to

“Strongly Agree” interpretation. Furthermore, the respondents rated 4.66 to the Question 4 “The system is capable of handling errors” which interpreted as “Strongly Agree”. Lastly, Question 5 asked respondents about “The system can resume working and restore data after failure” in which they rate 4.7 that is interpreted as “Strongly Agree”. Overall, the respondent’s rate has general weighted mean of 4.70, where 70.8% were strongly agree and 28.8% respondents agree with the system’s reliability and 0.4% were neutral.

### **Compatibility**

Compatibility is a characteristic of a system in which component can exchange information with other systems, and/or perform its required functions while sharing the same hardware or software environment



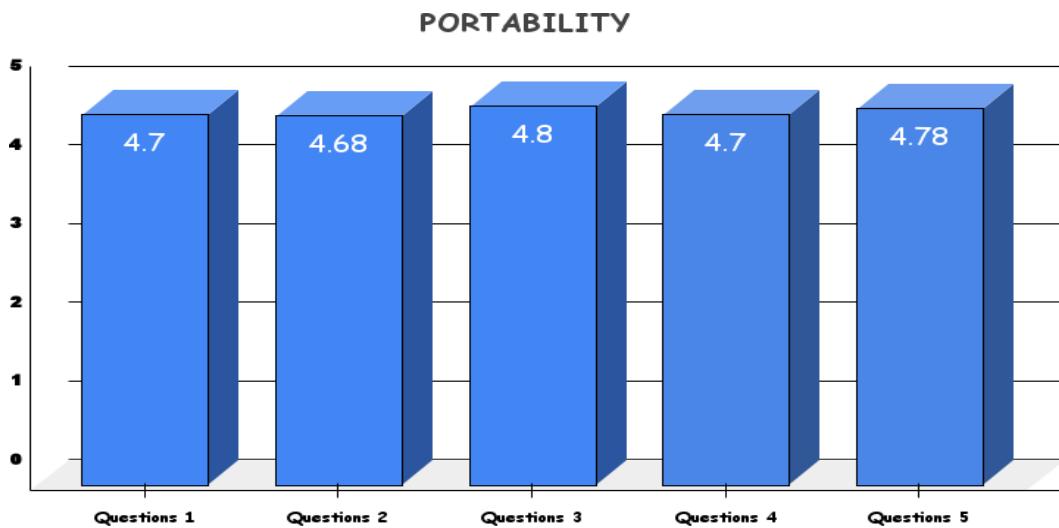
**Figure 51**

In figure 51, the respondents are asked about the system’s rate in terms of its reliability. Question 1 asked about “The system can install to any operating

system that meets the requirements” which the respondents total weighted mean rates to 4.64 that interpreted as “Strongly Agree”. Likewise, the respondents are asked about “The system and its linked application are working effectively” on Question 2, which it has 4.72 rate that is interpreted as “Strongly Agree”. In Question 3, the respondents asked about “The system can run with other connected devices such as printer” in which the respondents rate the system with 4.72 that is equivalent to “Strongly Agree” interpretation. Furthermore, the respondent’s rate 4.7 to the Question 4 “The system is properly working when other software runs” which interpreted as “Strongly Agree”. Lastly, Question 5 asked respondents about “The system allows other software running” in which they rate 4.74 that is interpreted as “Strongly Agree”. Overall, the respondent’s rate has general weighted mean of 4.70, where 86% are strongly agree and 13% agree while 1% strongly disagree with the system’s compatibility.

### **Portability**

Portability is a measure of effectiveness and efficiency with which a system can be transferred from one hardware, software or other operational or usage environment to another



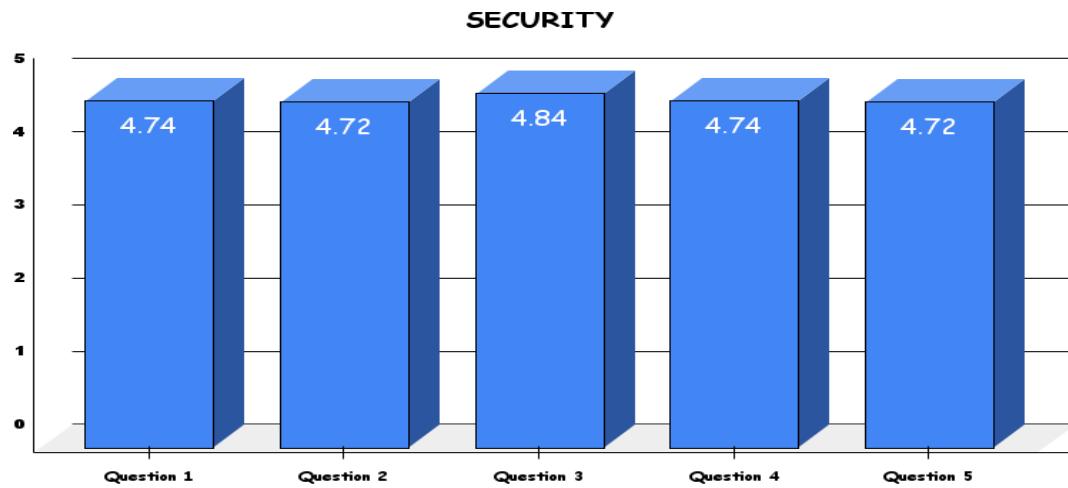
**Figure 52**

In figure 52, the respondents were asked about the system's rate in terms of its portability. Question 1 asked if "The system can use by authorized persons" which the respondents total weighted mean rates to 4.7 that interpreted as "Strongly Agree". Likewise, the respondents were asked if "The system can adapt to any version of operating system that meets the requirements" on Question 2, which it has 4.68 rate that is interpreted as "Strongly Agree". In Question 3, the respondents were asked whether "The system is easy to install after an update" in which the respondents rate the system with 4.8 that is equivalent to "Strongly Agree" interpretation. Furthermore, the respondents' rate 4.7 to the Question 4 "The system is easy to install after an update" which interpreted as "Strongly Agree". Lastly, Question 5 asked respondents if "The system can access anytime when required use" in which they rate 4.78 that is interpreted as "Strongly Agree". Overall, the respondents' rate has general weighted mean of 4.73, where 74%

were strongly agree and 25.2% agree with the system's portability and 0.8% were neutral.

## Security

Security is a measure where in a system protects information and data so that an individual or other systems have the level of data access appropriate to their types and levels of authorization.



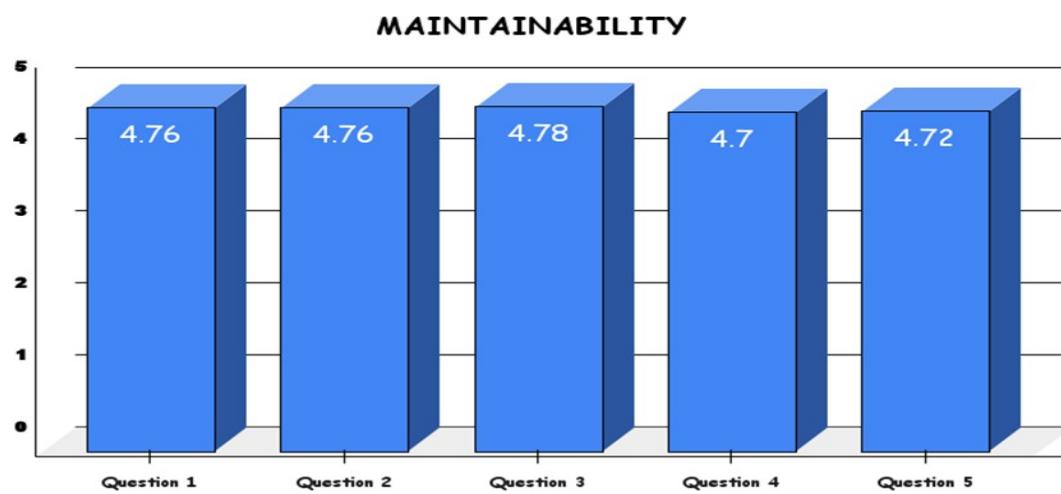
**Figure 53**

In figure 53, the respondents were asked about the system's rate in terms of its security. Question 1 asked if “The system can only access by authorized person” which the respondents total weighted mean rates to 4.74 that interpreted as “Strongly Agree”. Likewise, the respondents were asked about “The system encrypts the password to secure the account.” on Question 2, which it has 4.72 rate that is interpreted as “Strongly Agree”. In Question 3, the respondents were asked if “The system has a function log-in and log-out to prevent unauthorized

access" in which the respondents rate the system with 4.84 that is equivalent to "Strongly Agree" interpretation. Furthermore, the respondents' rate 4.74 to the Question 4 "The system prevents illegitimate access or modification of data or information" which interpreted as "Strongly Agree". Lastly, Question 5 asked respondents if "The system does not have share or send functions to avoid data breach." in which they rate 4.72 that is interpreted as "Strongly Agree". Overall, the respondents' rate has a general weighted mean of 4.75, where 76% were strongly agree and 23.2% agree while 1% of the respondents was neutral with the system's security and 0.8% neutral.

### Maintainability

Maintainability is the measurement that represents the degree of effectiveness and efficiency with which a system can be modified to improve it, correct it or adapt it to changes in environment, and in requirements.



**Figure 54**

In figure 54, the respondents were asked about the system's rate in terms of its maintainability. Question 1 asked about "The system can only access by authorized person" which the respondent's total weighted mean rates to 4.76 that interpreted as "Strongly Agree". Likewise, the respondents were asked about "The system encrypts the password to secure the account." on Question 2, which it has

4.76 rate that is interpreted as "Strongly Agree". In Question 3, the respondents asked about "The system has a function log-in and log-out to prevent unauthorized access" in which the respondents rate the system with 4.96 that is equivalent to "Strongly Agree" interpretation. Furthermore, the respondents' rate 4.7 to the Question 4 "The system prevents illegitimate access or modification of data or information" which interpreted as "Strongly Agree". Lastly, Question 5 asked respondents if "The system does not have share or send functions to avoid data breach." in which they rate 4.72 that is interpreted as "Strongly Agree". Overall, the respondents' rate has a general weighted mean of 4.74, where 75.6% were strongly agree and 23.2% of respondents agree with the system's security and 1.2% neutral.

### **Description of the Prototype**

The aim of this proposed system is to conceptualize and develop an information system shown in figure 1-9 that would provide an efficient and convenient way for the barangay staff, officials, and residents to input and view information. The system is designed to streamline the process of data entry and

retrieval, making it more accessible and user-friendly. With this system, it is

expected that the workload of the barangay staff will be significantly reduced, and the efficiency of the operations will be greatly improved. The system is also intended to enhance the experience of the residents by providing more convenient way to access information and services provided by the barangay. Overall, the system will help to foster better communication and collaboration between the barangay staff, officials, and residents, resulting in a more efficient and productive barangay community.

## **Chapter 4**

### **Summary, Conclusion and Recommendation**

This chapter focuses on the summary of findings, conclusion and the recommendation. Summary of findings provide the explanation with regards to all the information that was gathered. The conclusion is the analyzation of the study, and the recommendation is discussion of future developments of the study. These are needed to explain and discussed the generalize importance of the research study.

#### **Summary of findings**

The data and information gathered by the researchers has helped them to meet the requirements and objectives of the study. The study entitled E-Record: A Web Based Management System for Barangay Parian provides a system that will help the Barangay staffs to increase their effectivity. Official interview was undertaken by the researchers to gather the background of the client and its problem. The researchers found that the organization has problems with unorganized record-keeping, time-consuming retrieving of data and long transaction process, which it results to Barangay Parian staffs' ineffective document management and transaction process.

To meet second and third objective of the study, the requirements of the study should assist Barangay Parian in reducing its problems and issues that they face. To help the Barangay, the researchers developed an E-Record: A Web Based Management System. The researchers developed a system that can

record Barangay Parian officials and residents' information. One of the significant features of the system is the provision of user accounts for residents. These accounts enable individuals to request documents provided by the barangay such as barangay IDs, barangay certificates- certificate of indigency, barangay clearance, and the like. These individual accounts will lessen the inconvenience of long queue and waiting time of the clients.

The Barangay Parian management method seeks to improve convenience for locals by streamlining activities. To enable effective processes, it has a number of essential qualities. First, Gcash with QR Code is used as the payment method for online transactions. The payment process is streamlined because residents can now pay for a variety of services digitally.

E-Record: A Web Based Management System will provide fast transactions in which it lessens the long and time-consuming process in managing records, issuing documents and certificates before. The researchers also add record payments to easily determine the Barangay's revenue for report purposes. The system will also ensure that all records and information are kept up to date and are secured which would be beneficial for Barangay Parian staffs. Along with incident report or the blotter report, this offers quality services of the Barangay for its residents. In summary, the researchers meet its client requirements in developing a system that will help them to improve their Barangay officials and staffs' effectiveness on managing documents and transaction services for their residents.

The study's final objective is to assess how well the users accept the E-Record: A Web Based Management System's in terms of Usability, Functional Suitability, Performance Efficiency, Reliability, Compatibility, Portability, Security and Maintainability. To meet the study's objective, the researchers conducted a survey to assess the system's effectiveness and acceptability to its users. The survey's usability results showed an overall weighted mean that it has a total of 4.65 rate, which is equivalent to "Strongly Agree". On functional suitability, respondents give a total 4.67 score which is equivalent to "Strongly Agree". An overall weighted mean, 4.66 was calculated for performance efficiency, which has an equivalent of "Strongly Agree" interpretation. The overall weighted mean of 4.7 was calculated in terms of reliability and denoted as "Strongly Agree". In terms of compatibility, it has an overall weighted mean 4.7 in which is signify as "Strongly Agree". The overall weighted mean tallied to 4.73 which is interpreted as "Strongly Agree" in terms of system's portability. Also, in terms of security which has an overall weighted mean of 4.75 which is equivalent to "Strongly Agree" interpretation. Lastly, an overall weighted mean score 4.75 was calculated for security and was interpreted as "Strongly Agree". Based on the evaluation's findings, researchers sum up that the E-record: A Web Based Management System satisfies Barangay Parian officials and staff and meet its requirements which they generally answered "Strongly Agree" on the system's evaluation.

## **Conclusion**

Our lives are changing as a result of the rapid advancement of technology in ways that are both better and easier. The study's findings led the researchers to the following conclusion. Base on the forgoing data we have found out that Barangay Parian is facing difficulties in managing documents and transaction process, which the researchers discovered through an interview and observation of their current process. As the client still operating the manual process of recording the data with the piles of papers, it is also prone in environmental damage. Thus, it took time for them to retrieve data and makes the transaction process extensive whereas it causes ineffective document management and transaction process of the Barangay Parian staffs.

In able to help them on the problems mentioned above, the researchers developed E-Record: A Web Based Management System which is a client-based designed system specifically for Barangay Parian. The system can record all the information of its Barangay such as its officials, residents and can determine whether an individual is active or deceased. The admin and user can manage all the data inside the system where they can do updates or edit information, and also can create new information, while the user does not have delete function, cannot create new accounts and does not have access to the settings of the system.

In addition, the system has functions that can generate barangay ID, barangay certificates, backup files, restore databases and other settings of the system. For that, the system provides the client requirements. Primarily, it has a

dashboard where the summary of its information is showed such as certificates portal, daily & weekly total revenue, total registered residents, and barangay information: Mission and Vision and announcements. Also, authorization function enabled to the system for the security of records. The client has given the system full approval for all of its procedures, making it suitable for implementation.

After the deployment and implementation of the system, the researchers conducted a testing to Barangay Parian staffs where it has a total 35 Barangay staffs and 15 Barangay Parian residents as the respondents to evaluate the quality of the system. After conducting the testing and survey, the researcher tallies all the data gathered from the respondents. A total 100% of respondents' states that they are agree with the system's usability, also in terms of functional suitability 100% of the respondents are agree. In performance efficiency, a total of 99% of the respondents are agree, while a total of 100% respondents agree on the system's reliability. There are 99% respondents who agree with the system's compatibility and a total of 100% respondents that are agree on the compatibility of the system. The security of the system has a total of 99% agrees respondents. Lastly, on the evaluation of the respondents in the maintainability of the system, a total 100% respondents admit that they are agree. There is a total of 4.70 overall rates to the system which interpret as "Strongly Agree", where it has general average of 99.63% respondents that agree and accept the system where it meets the requirements and quality expectations of its users. Finally, the researchers concluded that the developed system meets the users' satisfaction and

acceptability in terms of Usability, Functional Suitability, Performance Efficiency, Reliability, Compatibility, Portability, Security and Maintainability. Hence, it justifies that the system helps the Barangay Parian staffs to improve and increase their effectiveness in performing their day-to-day tasks.

This chapter presents the recommendations, references and appendices. The recommendations section provides valuable insights and suggestions based on the findings and analysis presented in the previous chapters. These recommendations offer practical steps and strategies to address the identified issues and improve the overall system efficiency. The references section includes a comprehensive list of sources that were consulted and cited. These references provide credibility to the research and enable readers to delve deeper into the topics discussed. Proper citation styles and formats are utilized to ensure accuracy and consistency. Furthermore, the appendices section contains supplementary materials that enhance the understanding of the research. Appendices serve as a valuable resource for readers seeking additional information or detailed analysis. **Recommendations**

The E-RECORD: A Barangay Management System for Barangay Parian has proven to be an effective solution for the barangay as a whole. The system successfully addressed the specific needs of the barangay, providing efficient management and streamlined processes. However, to further enhance the effectiveness of the system, we propose the following recommendations for the barangay and future researchers and developers:

1. Implementation in Barangay Parian: We strongly recommend implementing the system in Barangay Parian to fully leverage its benefits. By adopting the system, the barangay can optimize its operations, improve data management, and enhance service delivery to residents.

2. Expansion of Online Payment: In addition to the existing online payment functionality, future developers should consider integrating additional payment gateways to offer more options to residents. This will provide greater convenience and flexibility in making payments for various barangay services.

3. Automation of Other Departments: Future developers can explore extending the system's capabilities by automating processes in other departments within the barangay, such as the Barangay Health System. This integration will streamline operations, facilitate efficient information sharing, and promote better coordination among different departments.

4. System Maintenance and Enhancement: It is essential for future researchers to continue maintaining and improving the system to ensure its long-term effectiveness. Regular updates, bug fixes, and incorporating user feedback will contribute to the system's continuous improvement and relevance.

5. Mobile Application Development: To cater to the growing trend of mobile technology, future developers should consider developing a mobile application version of the system. This will enable residents to conveniently access the system and its features using their smartphones, enhancing accessibility and user experience.

By implementing these recommendations, Barangay Parian can further optimize its management processes, enhance resident services, and stay at the forefront of technological advancements. The efforts of future researchers and developers will be instrumental in maintaining, expanding, and improving the system for the benefit of the barangay and its residents.

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**APPENDICES**  
**Appendix A: Title Approval Form**



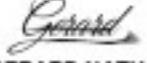
Doc. No.	QR-CCS-006
Issue No.	01
Revision No.	00
College/Department: BSIT	Date of Effectivity: 09/12/2022
RESEARCH TOPIC PROPOSAL FORM	
Page 1 of 2	

Name of Student	JOHN JERRICK B. JEREZ GARRY B. DIGAMON VINCE PAUL S. CORALAT		
Student ID	19004012100 19003823400 20000360700	Program	Bachelor of Science in Information Technology
Proposed Title	E - Records : A Web based Management System for Barangay Parian Calamba City		
Area of Investigation	BARANGAY PARIAN, CALAMBA CITY		
Reasons for Choice of Project	The main goal of this study is to provide a comprehensive, dependable, and safe storage of all data. Web-Based Barangay Management System intends to improve the processes for monitoring, certifying, and maintaining the privacy of all resident records.		
Importance of the Study	The study's primary objective is to create a Web-Based Barangay Management System. By allowing the client barangay to maintain resident records that are as complete, current, and convenient as possible for verification, monitoring, and reference purposes based on the residents' census data that the client barangay has kept, this system makes barangay management easier.		
Target Users/Beneficiary	Barangay Duty Officers. The management and employees of the barangay will immediately profit from the project's success. The system will make it easier for them to provide services and respond to citizens' questions.  Residents. The system will help them by giving them a standardized method they may use to obtain services and certificates from the barangay.		

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	Issue No.	01
	Revision No.	00
College/Department: BSIT	Date of Effectivity	
<b>RESEARCH TOPIC PROPOSAL FORM</b>		Page 2 of 2

Similarity with any Previous Study/Project  Project Time Table (Gantt Chart)	SCHOOL ADMINISTRATION SYSTEM, SCHOOL MANAGEMENT INFORMATION SYSTEM  Capstone Project 1-IT6398 2nd Tri 2022  SEPTEMBER 12 -- SEPTEMBER 30: Finding beneficiary OCTOBER 01 -- OCTOBER 10: Agreement with the Beneficiary OCTOBER 11 -- OCTOBER 21: Formulation of Title OCTOBER 22 -- OCTOBER 28: Title Defense Proposal OCTOBER 29 -- NOVEMBER 04: Chapter 1 NOVEMBER 05 -- NOVEMBER 15: Chapter 2 NOVEMBER 16 -- NOVEMBER 24: Chapter 3 & 10% System Development NOVEMBER 25 -- DECEMBER 20: 30% System Development JANUARY 05 -- JANUARY 23: PRE-ORAL DEFENSE
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Recommending Approval	Signature	Approved by
Research Professor	 Tulabing, Katherine Joys	 DE LARA, KAREN VITALICIO
Subject Coordinator		
Department Head		
Dean		 NGO, GERARD NATHANIEL

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**Appendix B:  
Adviser approval**

AMA Computer College  
Zamboanga Campus  
MCLL Hi-way, Barangay Guiwan  
Zamboanga City

March 22, 2023

Dear Sir,

This research paper entitled "E-RECORD: A BARANGAY MANAGEMENT SYSTEM FOR BARANGAY PARIAN", prepared and submitted by Jerez, John Jerrick B., Coralat, Vince Paul S., Digamon, Garry B., 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 Examination.



**Roderick Mulato**

Capstone/Research Adviser  
ACAD Coord / Dean  
AMACC-Zamboanga Campus

**Appendix C**  
**Beneficiary Acceptance Form**

**OFFICIAL WEBSITE FOR GQ BARBERSHOP**

**AMA EDUCATION SYSTEM**

**RESEARCH PARTICIPATION AGREEMENT**

The researchers see this as an opportunity to help improve the promotion of the business products/services and introduce the business to the web/online management system.

This research will be undertaken by students of AMA Education System for the partial end of "CAPSTONE I". In consideration of your agreement to participate in the Research, GQ Barbershop and the Researchers agree as follows:

**Information collected during Research:** The Researchers may record you in any format during the Research including written interviews, communications, and photography. In addition to your information collected the Researchers may also collect the Company's information, including name, age, gender, address, email address, phone number, opinions, response to Research questions, and personal background (this additional formation, along with the Recordings, will be collectively referred to as "Personal Information").

The information gotten from this research will be used to improve the current experience and interface of our products.

All information shared with us will be treated with care according to the information security policy. We will also welcome any request to delete your information if you feel uncomfortable.

You understand that participation in this Research is entirely voluntary and that you may at any time choose to stop participating in the Research.

All the expenses in creating the said project will be covered by the researchers, and the system will be left to the company as a gift. This is to appreciate you for the time spent and effort in assisting us with our research project.

By signing this Agreement and participating in Research, the company agrees to: comply with the terms of this Agreement; provide true, correct, and complete information; and ensure that you engage with the Research in an honest, transparent, and good faith manner.

**ACCEPTED & AGREED:**

I have read and understood this Agreement. I agree to participate in the Research by this Agreement.

  
GINA VITALICIO  
General Manager

  
REMAR TABORDAN  
Barber/Hairdresser

**Appendix D**  
**Survey Questionnaire**

**Data Survey Form - E-RECORD: A WEB BASED MANAGEMENT SYSTEM  
FOR BARANGAY PARIAN**

Dear Respondents, Good day!

We are 4th year Students enrolled in program Bachelor of Science in Information Technology from AMA Computer College. Currently, were conducting a system evaluation as part of our academic requirement for the course IT Capstone Project 2.

The system that will be evaluated is entitled " **E-RECORD: A WEB BASED MANAGEMENT SYSTEM FOR BARANGAY PARIAN** ". The project aims to evaluate the usability, functional suitability, performance efficiency, reliability, compatibility, portability, security and maintainability of the system.

We would like to ask your consent to participate as one of our respondents in this survey. Your survey responses will be solely used for academic purposes only and strictly confidential under the Data Privacy Act of 2012 (RA 10173).

Thank you and God bless to all of us!

**The Researchers.**

Instructions:

To answer the following questions below, kindly visit the prototype website [bmis.rosaryheights.com](http://bmis.rosaryheights.com) and check the corresponding box to that corresponds to how best you agree to the statement provided.

**5-Strongly Agree    4-Agree    3-Neutral    2-Disagree    1-Strongly Disagree**

1. Full Name:
2. Gender (*Mark only one oval.*)\*

Male  Female

3. Age (Mark only one oval.)\*

- |     |                       |    |
|-----|-----------------------|----|
| 18- | <input type="radio"/> | 29 |
| 30- | <input type="radio"/> | 39 |
| 40- | <input type="radio"/> | 80 |

4. Marital Status (Mark only one oval.)\*

Single  Married

5. Type of Respondent (Mark only one oval.)\*

Residents  Barangay Officials

**USABILITY:**

1. The system is very easy to use. (Mark only one oval.)\* 1

2.
- 3
- 4
- 5

2. The system texts are readable. (Mark only one oval.)\*

- 1
- 2
- 3
- 4
3.            The system can be used with only minimal supervision.

(Mark only one oval.)\*

- 1
- 2
- 3
- 4
- 5

4. The systems' various functions are well integrated. (Mark only one oval.)\*

- 1
- 2
- 3
- 4
- 5

5.      The system visuals are good. (Mark only one oval.) \* 1

- 2
- 3
- 4
- 5

#### **FUNCTIONAL SUITABILITY:**

1. The system makes easier to record information. (Mark only one oval.)\*

- 1
- 2
- 3
- 4
- 5

2. The system can generate certificates. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

3. The system provides accurate and complete data. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

4. The system shows update information. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

5. The system makes all the data organized. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

#### **PERFORMANCE EFFICIENCY:**

1. The system is easy to process. (*Mark only one oval.*)\* 1

- 2
- 3
- 4
- 5

2. The system provides faster transaction. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

3. The system can automatically generate certificates. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

4. The system data and information are secured. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

5. The system can view the total of records. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

**RELIABILITY:**

1. The system can identify the authorized users and unauthorized users. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

2. The system is accessible and operational when required use. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4

5

3. The system provides correct computation of data records.

(Mark only one oval.)\*

- 1
- 2
- 3
- 4
- 5

4. The system is capable of handling errors. (Mark only one oval.)\*

- 1
- 2
- 3
- 4
- 5

5. The system can resume working and restore data after failure.

(Mark only one oval.) \* 1

- 2
- 3
- 4
- 5

## **COMPATIBILITY:**

1. The system can install to any operating system that meets the requirements. (*Mark only one oval.*)\*

1	<input type="radio"/>
2	<input type="radio"/>
3	<input type="radio"/>
4	<input type="radio"/>
5	<input type="radio"/>

2. The system and its link application are working effectively. (*Mark only one oval.*)\*

1	<input type="radio"/>
2	<input type="radio"/>
3	<input type="radio"/>
4	<input type="radio"/>
5	<input type="radio"/>

3. The system can run with other connected devices such as printer.

(*Mark only one oval.*) \* 1

2	<input type="radio"/>
3	<input type="radio"/>
4	<input type="radio"/>
5	<input type="radio"/>

4. The system is properly working when other software runs (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

5. The system allows other software running. (*Mark only one oval.*) \*

- 1
- 2
- 3
- 4
- 5

#### **PORTABILITY:**

1. The system can be used by authorized persons. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

2. The system can adapt to any version of operating system that meets the requirements. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

3. The system is easy to install after an update. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

4. The system can use without other software that is not required. *(Mark only one oval.)\* 1*

- 2
- 3
- 4
- 5

5. The system can access anytime when required to use. *(Mark only one oval.)\**

- 1
- 2
- 3
- 4
- 5

#### **SECURITY:**

1. The system can only access by authorized person. *(Mark only one oval.)\* 1*

- 2
- 3
- 4
- 5

2. The system encrypts the password to secure the account. *(Mark only one oval.)\**

- 1
- 2
- 3
- 4
- 5

3. The system has a function log-in and log-out to prevent unauthorized access.

*(Mark only one oval.) \* 1*

- 2
- 3
- 4
- 5

4. The system prevents illegitimate access or modification of data or information.

*(Mark only one oval.) \* 1*

- 2
- 3
- 4
- 5

5. The system does not have share or send functions to avoid data breach.

*(Mark only one oval.)\**

- 1
- 2
- 3
- 4
- 5

**MAINTAINABILITY:**

1. The system keeps the data and information. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

2. The system is capable in maintaining its function and database.

(*Mark only one oval.*) \* 1

- 2
- 3
- 4
- 5

3. The system still works when modification is made. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

4. The system updates are achievable. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

5. The system can do test after modified. (*Mark only one oval.*)\*

- 1
- 2
- 3
- 4
- 5

**Appendix E**  
**BARANGAY CLEARANCE**  
**(System Output Certificate)**



Republic of the Philippines  
Province of LAGUNA  
CALAMBA CITY

**PARIAN**

Contact No. (049) 502-6787/Email:barangayparian@gmail.com



**SANGUNIANG PARIAN**  
**1990-2022**



**HON. RODNIE P. PEREZ**

Punong Barangay

**SANGUNIANG BARANGAY  
KAGAWAD**

**HON. AUREA C. GOBANGCO**

**HON. MA. URSULA V. SANTOS**

**HON. MARIO F. DIAMANTE**

**HON. RUBEN U. LIRIO**

**HON. RICHELLE DC. AGUILAR**

**HON. FREDERICO A. MAGORA**

**HON. NICOLAS B. CAROLA**

**JOMAR A. TEÑA**  
BRGY. SECRETARY

**KHRISTINE A. ABONAL**  
BRGY. TREASURER

**OFFICE OF THE PUNONG BARANGAY**  
**BARANGAY CLEARANCE**

TO WHOM IT MAY CONCERN:

This is to CERTIFY that the person whose name appearing herein has requested a **BARANGAY CLEARANCE** from this office and the result(s) is/are listed below:

First Name	: ABEGAIL
Middle Name	: BRIONES
Last Name	: JEREZ
Address	: PUROK 3 MABOLO ST. CALAMBA CITY LAGUNA
Birthdate	: February 02, 2005
Place of Birth	: CABUYAO LAGUNA
Gender	: FEMALE
Citizenship	: FILIPINO
Civil Status	: SINGLE
Date Issued	: Saturday, August 05, 2023
Valid until	: August 05, 2023

This is to CERTIFY further that **ABEGAIL BRIONES JEREZ**, has no derogatory record filed and/or pending case against him/her before this office. Provided however, that any complaint against his/her application and purpose found valid shall be sufficient cause for revocation of this clearance.

This **CLEARANCE** is issued for **Employment**.



**HON. RODNIE P. PEREZ**  
PUNONG BARANGAY

\_\_\_\_\_  
signature

By:

**GARRY**  
Barangay Official On Duty

garry

Remarks:

**" To God be all the glory "**

**Appendix F**  
**CERTIFICATE OF INDEGENCY**



Republic of the Philippines

Province of LAGUNA

CALAMBA CITY

PARIAN

Contact No. (049) 502-6787/Email:barangayparian@gmail.com



SANGUNIANG PARIAN

1990-2022



HON. RODNIE P. PEREZ

Punong Barangay

SANGUNIANG BARANGAY  
KAGAWAD

HON. AUREA C. GOBANGCO

HON. MA. URSULA V. SANTOS

HON. MARIO F. DIAMANTE

HON. RUBEN U. LIRIO

HON. RICHELLE DC. AGUILAR

HON. FREDERICO A. MAGORA

HON. NICOLAS B. CAROLA

JOMAR A. TEÑA  
BRGY. SECRETARY

KHRISTINE A. ABONAL  
BRGY. TREASURER

OFFICE OF THE PUNONG BARANGAY

CERTIFICATE OF INDIGENCE

TO WHOM IT MAY CONCERN:

This is to certify that ABEGAIL BRIONES JEREZ, Female, 18 years old, Single, Filipino and a duly resident of this barangay belongs to the indigent family.

This certification is issued upon his\her request for whatever legal purpose it may serve.

Issued this 5th day of August, 2023 at PARIAN, CALAMBA CITY, LAGUNA.



HON. RODNIE P. PEREZ  
PUNONG BARANGAY

signature

Valid Until: August 05, 2023

Remarks:

popo



"To God be all the glory"

**Appendix G**  
**CERTIFICATE OF RESIDENCY**



Republic of the Philippines  
Province of LAGUNA  
CALAMBA CITY  
**PARIAN**  
Contact No. (049) 502-6787/Email:barangayparian@gmail.com



<p><b>SANGUNIANG PARIAN</b> 1990-2022</p> <p></p> <p><b>HON. RODNIE P. PEREZ</b> Punong Barangay</p> <p><b>SANGUNIANG BARANGAY KAGAWAD</b></p> <p><b>HON. AUREA C. GOBANGCO</b></p> <p><b>HON. MA. URSULA V. SANTOS</b></p> <p><b>HON. MARIO F. DIAMANTE</b></p> <p><b>HON. RUBEN U. LIRIO</b></p> <p><b>HON. RICHELLE DC. AGUILAR</b></p> <p><b>HON. FREDERICO A. MAGORA</b></p> <p><b>HON. NICOLAS B. CAROLA</b></p> <p><b>JOMAR A. TEÑA</b> BRGY. SECRETARY</p> <p><b>KHRISTINE A. ABONAL</b> BRGY. TREASURER</p>	<p><b>OFFICE OF THE PUNONG BARANGAY</b> <b>CERTIFICATE OF RESIDENCY</b></p> <p>This is to certify that <b>ABEGAIL BRIONES JEREZ</b>, of legal age, Female, Single, Filipino and resident of Purok 3 Mabolo St. Calamba City Laguna for more than 20 years now.</p> <p>This certification is issued upon <u>his\her</u> request for whatever legal purpose it may serve.</p> <p>Issued this 5th day of August, 2023 at PARIAN, CALAMBA CITY, LAGUNA.</p> <p> <b>HON. RODNIE P. PEREZ</b> PUNONG BARANGAY</p> <p>signature</p> <p>garry</p> <p>By: <b>GARRY</b> Barangay Official On Duty</p> <p>Valid Until: August 05, 2023</p> <p>Remarks: </p> <p><b>"To God be all the glory"</b></p>
---	--

**Appendix H**  
**Screenshot of Source Code**

Screenshot of Sublime Text showing the file `views/home/about.php`. The code is a PHP template for a dashboard page. It includes CSS classes for styling, such as `bg-light`, `container`, and `row align-items-center`. It features a header with the title "BARANGAY", a logo section with "MISSION AND VISION", and a population table. The table has a header row with columns for CENSUS, COUNT, and POPULATION. The body of the table contains a single row with a population value of 44.

```

<div class="bg-light">
    <div class="container">
        <div class="row align-items-center">
            <div class="col-md-8 mt-5">
                <div class="text-center" style="border:5px solid #C8C8C8">
                    <b>BARANGAY</b>
                </div>
            </div>
            <div class="col-md-4 text-center">
                <img src=<?php site_url('assets/uploads/' . $info->brgy_logo); ?> class="img-fluid mt-3" width="220">
            </div>
        </div>
        <div class="row align-items-center">
            <div class="col-md-8 mt-2">
                <div class="p-4 pt-5" style="border:5px solid #C8C8C8">
                    <b>MISSION AND VISION</b>
                    <br><br><$info->dashboard_text>
                </div>
            </div>
            <div class="col-md-4 mt-2 text-center">
                <img src=<?php site_url('assets/uploads/' . $info->city_logo); ?> class="img-fluid mt-3" width="220">
            </div>
        </div>
    </div>
    <div class="text-center font-weight-bold mt-5">POPULATION</div>
    <div class="table-responsive mt-4">
        <table class="table">
            <thead class="text-light" style="background-color:#2CCCC4">
                <tr>
                    <th><b>CENSUS</b></th>
                    <th><b>COUNT</b></th>
                    <th><b>POPULATION</b></th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>44</td>
                    <td>44</td>
                    <td>44</td>
                </tr>
            </tbody>
        </table>
    </div>
    <div class="text-center font-weight-bold mt-5">ORGANIZATIONAL CHART</div>
    <div class="mt-5 mb-5">
        <div class="row">
            <php foreach ($officials as $row) : ?>
                <div class="col-md-4 col-sm-12 mb-3">
                    <div class="card">
                        <img alt="Card image cap" src=<?php if(empty($row['avatar'])) : ?> site_url('assets/img/avatar.png') : site_url('assets/uploads/avatar/' . $row['avatar']); ?> style="border-radius: 50%; width: 100%; height: 100%; object-fit: cover; border: 1px solid black;">
                    </div>
                </div>
            </php>
        </div>
    </div>

```

Screenshot of Sublime Text showing the file `views/home/profile.php`. This is a form page for updating a resident profile. It includes a welcome message, a file input for a profile picture, and a form for changing the profile. The form uses POST method and enctype="multipart/form-data". It includes fields for full name, gender, first name, middle name, and last name. The age field is calculated by subtracting the birthdate from the current time.

```

<div class="bg-light mb-5">
    <div class="container mb-5">
        <div class="text-center pt-5 pb-3">
            <h3>Welcome, <?php echo $resident_profile; ?></h3>
        </div>
        <php if (!empty($_SESSION['flashdata']['message'])) : ?>
            <div class="alert alert-?<?php if($_SESSION['flashdata']['success']) : ?> success" role="alert">
                <?php echo $_SESSION['flashdata']['message']; ?>
            </div>
        </php>
        <div class="row p-4 mb-5" style="background-color: #e6f2ff; border-radius: 5px; padding: 10px; margin-bottom: 10px">
            <div class="col-md-6 text-center mt-5 mb-3">
                <php if (!empty($res->picture)) : ?>
                    <img alt="User Image" src=<?php echo $res->picture; ?> style="border-radius: 50%; width: 100px; height: 100px; object-fit: cover; border: 1px solid black;">
                </php>
                <img alt="User Image" src=<?php echo $res->picture; ?> style="width: 100px; height: 100px; object-fit: cover; border: 1px solid black;">
            </div>
            <div class="col-md-6 text-right">
                <form method="POST" action=<?php echo site_url('auth/changeResProfile'); ?> enctype="multipart/form-data">
                    <input type="file" name="profile" accept="image/png, image/gif, image/jpeg" required>
                    <input type="hidden" name="id" value=<?php echo $this->session->resident_id; ?>>
                    <button type="submit" class="btn btn-primary mt-3" style="border-radius: 5px; border: 1px solid #007bff; color: white; background-color: #007bff; font-weight: bold; padding: 5px 10px; font-size: 14px; width: 100px; height: 40px; margin-top: 10px">Change</button>
                </form>
            </div>
        </div>
        <div class="col-md-12 text-center">
            <h4>RESIDENT INFORMATION</h4>
            <div class="row mt-5" style="background-color: #e6f2ff; border-radius: 5px; padding: 10px; margin-bottom: 10px">
                <div class="col-6 text-right">
                    <div class="font-weight-bold" style="margin-bottom: 10px">Full Name:</div>
                    <div>
                        <?php echo ucwords($res->firstname . ' ' . $res->middlename . ' ' . $res->lastname); ?>
                    </div>
                </div>
                <div class="col-6 text-left">
                    <div class="font-weight-bold" style="margin-bottom: 10px">Gender:</div>
                    <?php echo ucwords($res->gender); ?>
                </div>
            </div>
            <div class="row mt-3" style="background-color: #e6f2ff; border-radius: 5px; padding: 10px; margin-bottom: 10px">
                <div class="col-6 text-right">
                    <div class="font-weight-bold" style="margin-bottom: 10px">Age:</div>
                    <?php echo floor((time() - strtotime($res->birthdate)) / 31556926); ?>
                </div>
                <div class="col-6 text-left">
                    <div class="font-weight-bold" style="margin-bottom: 10px">Date of Birth:</div>
                    <?php echo date("Y-m-d", strtotime($res->birthdate)); ?>
                </div>
            </div>
        </div>
    </div>

```

C:\xampp\htdocs\dcversion\application\views\home\register.php (version: 1) - Sublime Text (UNREGISTERED)

```
<?php

// controllers
// helpers
// hooks
// language
// logs
// models
// modules
// views
// announcement
// blitter
// certa
// charmanship
// config
// core
// errors
// home
// login
// map.php
// model.php
// profile.php
// register.php
// resident.php
// service_info_d
// service_r
// transaction

// houses
// modal
// official
// payments
// services
// predict
// punk
// request
// resident
// services
// user

// 404.php
// activity_log.php
// dashboard.php
// index.html
// login.php
// index.html
// assets

register.php
<?php
    <div class="container text-light">
        <div class="text-center mt-3 bg-white text-dark p-5">
            <div class="text-center mb-3">Bantayay <?= $info->brgy_name ?></div>
            <div class="row mt-5">
                <div class="col-md-4">
                    
                </div>
                <div class="col-md-8">
                    <php if ($this->session->flashdata('message')) : ?>
                        <div class="alert alert-success" style="background-color: #e6f2ff; border-color: #c8e6c9; color: #337ab7; padding: 10px; margin-bottom: 10px; border-radius: 5px; font-size: 14px; font-weight: bold; text-align: center; width: 100%;">
                            <?= $this->session->flashdata('success') ?> alert-dismissible fade show " role="alert"
                        </div>
                    <php endif ?>
                    <form method="POST" class="mt-2" id="register_form" action="<?= site_url('auth/register') ?>">
                        <div class="row justify-content-between">
                            <div class="col-6">
                                Note: Registration is sensitive. Please enter the exact firstname, middlename and lastname of the resident.</div>
                            <div class="col-6">
                            </div>
                        </div>
                        <div class="col-md-6">
                            <div class="form-group">
                                <input class="form-control-lg w-100" placeholder="Username" name="username" required />
                            </div>
                        <div class="col-md-6">
                            <div class="form-group">
                                <input class="form-control-lg w-100" placeholder="First Name" name="fname" required />
                            </div>
                        </div>
                    </div>
                    <div class="row">
                        <div class="col-md-6">
                            <div class="form-group">
                                <input class="form-control-lg w-100" placeholder="Middle Name" name="mname" required />
                            </div>
                        </div>
                        <div class="col-md-6">
                            <div class="form-group">
                                <input class="form-control-lg w-100" placeholder="Last Name" name="lname" required />
                            </div>
                        </div>
                    </div>
                    <div class="form-group">
                        <input class="form-control-lg w-100" id="password" name="password" type="password" required="" placeholder="Password" pattern="(?=^.{8,}$)(?=.*[0-9])(?=.*[a-zA-Z]).{8,}" title="Must contain at least one number and one uppercase and lowercase letter, and at least 8 or more characters" />
                        <span toggle="#password" class="fa fa-fw fa-eye field-icon toggle-password">Show</span>
                    </div>
                    <div class="form-group">
                        <input class="form-control-lg w-100" id="conpassword" name="conpassword" type="password" required="" placeholder="Confirm Password" pattern="(?=^.{8,}$)(?=.*[0-9])(?=.*[a-zA-Z]).{8,}" title="Must contain at least one number and one uppercase and lowercase letter, and at least 8 or more characters" />
                        <span toggle="#conpassword" class="fa fa-fw fa-eye field-icon toggle-password">Show</span>
                    </div>
                    <button class="btn-warning btn-lg w-100" type="submit" style="border-radius: 4px">REGISTER</button>
                    <div class="mt-3">Already registered? <a href="<?= site_url('client/login') ?>">Login Here!</a></div>
                </form>
            </div>
        </div>
    </div>
```

**Appendix I**  
**Researchers Interview with Barangay Staff**



## **Appendix J**

### **Grammarians Certificate**

**July 5, 2023**

**Dear Sir / Madam:**

We, the undersigned are working on our thesis title "**E –RECORD: A WEB BASED MANAGEMENT SYSTEM FOR BARANGAY PARIAN**" In consonance with this, we would like to you as our Thesis Grammarians.

May this letter merit your kind consideration and approval. Thank you.

**Respectfully yours,**

CORALAT, Vince Paul S. JEREZ, John Jerrick B. DIGAMON, Garry B.

**Noted by:**

  
ALCANTARA, Angelie R.  
Academic Coordinator/ Dean AMACC Calamba Campus Grammarians

## **Appendix K**

### **STATISTICIAN'S CERTIFICATION**

## **STATISTICIAN'S CERTIFICATE**

This is to certify that this research study entitled, " **E-RECORD: A WEB BASED MANAGEMENT SYSTEM FOR BARANGAY PARIAN** " prepared and

submitted by Garry B. Digamon, John Jerrick B. Jerez and Vince Paul S. Coralat in partial fulfillment for the degree of Bachelor of Science in Information Technology has been statistically reviewed by the undersigned.

Signed this 5<sup>th</sup> day of August in the year of 2023 at AMACC Computer College Calamba La Suerte Bldg. Parian Calamba City.

**Signed by:**

  
**ALCANTARA, Angelie R.**  
Academic Coordinator/ Dean AMACC Calamba Campus *Statistician*

## **Appendix L**

### **Curriculum Vitae**



9 509 Emilio Jacinto, Davao  
City, Philippines 8000  
□ 09933699103  
✉ coralavincepaul@gmail.com

#### SUMMARY

To gain practical experience in my field of study and acquire the skills and knowledge necessary to succeed in my future career.

#### SKILLS

- Employer liability insurance knowledge
- Microsoft Office proficiency
- Photography

# Vince Paul Coralat

#### EXPERIENCE

Office Clerk Local Government Unit | Hinatuan Surigao Del Sur

- Created and maintained spreadsheets using Excel.
- Organised files, faxed reports and scanned documents into document management system.
- Organised and updated document management systems to improve audit and reference processes.

#### EDUCATION

2012

##### Primary

Hinatuan South Central Elementary School, Hinatuan

2012 - 2016

##### Secondary

Father Urdos Academy Inc.

2016 - 2018

##### Vocational

Andres Soriano Colleges of Bislig

2020 - Current

##### Bachelor of Science In Information Technology

AMA Computer College Davao



📍 Mayapa st, Calamba City, Phillipines 4029  
📞 09701389929  
✉️ garrydigamon15@gmail.com

#### SUMMARY

Reliable warehouse worker experienced in target-driven environments. Prioritizes accuracy and customer service to reach collective goals. Offers collaborative approach and flexible rotas to support dynamic teams.

#### SKILLS

- Incoming goods inspections
- Delivery operations
- Target-focused
- Warehouse operation management
- Attentive
- Process improvement
- Warehouse management systems
- Inventory organization
- Logistics

# Garry Digamon

#### EXPERIENCE

June 2020 - Current

**Warehouse Operative SAN-MIGUEL CORP., Multi-Services inc.** |  
Silangan Industrial Estate, Bgy Pittland, Terelay Phase,  
Cabuyao, Laguna, Phillipines

- Provided accurate stock reports to warehouse manager to allow for timely reordering.
- Assessed packages and counted stock to ensure delivery accuracy before unloading and processing.
- Managed inventory movements to process incoming shipments and organise storage areas.

#### CERTIFICATIONS

- Computer System Servicing NCII Certification

#### EDUCATION

2013 - 2019

TECHNICAL-VOCATIONAL - INFORMATION COMMUNICATION TECHNOLOGY - With Honors  
Calinan National High School, Peñano St., Davao City, Philippines  
GPA: 92

2019 - Current

**Bachelor of Science** | in Information Technology  
AMACC CALAMBA CAMPUS, F.P Perez bldg. National Highway, Parian, Calamba



# John Jerrick B. Jerez

📞 09074074337

✉️ jherrickbriones@gmail.com

📍 Purok 3 Mabolo St. Brgy Parian Calamba City Laguna Philippines 4029

## SUMMARY

Trustworthy Warehouse Operative with 3 years of practical experience and dedicated work ethic. Self-motivated to consistently provide first-class results in line with stringent targets and deadlines. Responsible Warehouse operative, passionate about delivering outstanding quality and service. Offering 3 years of experience in industry with history of recognition for performance.

## SKILLS

- Delivery operations
- Warehouse operation management
- Detail-orientated
- Attentive
- Safety and compliance
- Risk assessments

## EXPERIENCE

02/2016 - 04/2019

### Warehouse Operative

**Chromoly Techserve** | Rovalf Bldg., 2nd Flr., Room #5, Yulo Ave., Ceris III Subd., Brgy. Canlubang, Calamba, Philippines

- Scanned, sorted and diverted packages to appropriate warehouse departments for ease of access and accurate tracking.
- Understood warehouse product placement, enabling efficient picking and packing services.
- Identified and removed damaged products, quickly replacing items with quality stock to minimise customer delays.

## EDUCATION

2019 - Current

**AMACC CALAMBA** | National Hwy, Calamba, Philippines, 4027

Bachelor of Science: Information Technology

2010 - 2014

**Cabuyao National Highschool** | Cabuyao, LAG

Cookery