



Chambers of the Burning Ashes System

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Executive Summary

Chambers of the Burning Ashes (CBAS) is a software solution that aims to replace the current document management system of the St Alphonsus Mary de Liguori Parish which is currently only done manually. Due to the current system, they encounter problems such as duplicated bookings due to human error, forgetting that certain columbaries are already booked prior, and loss of records due to natural disasters such as typhoons. As such, the primary objective of this project is to develop a web-based system using the Django Framework, Python, Tesseract, Nextcloud, and MySQL for the Parish. This is to improve the document management system and provide security for document records. The target audience for this project is the Parish officers and admins. The project will follow an Agile-Scrum development methodology, with iterative cycles of requirements gathering, design, development, and testing. The expected outcome for this undertaking is a working software solution integrated into the system of St Alphonsus Mary de Liguori Parish.

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I. Introduction

1.1 Project Context

St Alphonsus Mary de Liguori Parish is a Catholic church located in Humabon Place, barangay Magallanes, Makati, Philippines. They offer a variety of services such as funerals, weddings, and columbarium services. It was originated by the Roman Catholic Archdiocese of Manila and was established on August 2, 1967. The Roman Catholic Archdiocese of Manila is one of the oldest and most prominent Catholic jurisdictions in the Philippines. Established on February 6, 1579, by Pope Gregory XIII, it serves as the metropolitan see for the ecclesiastical province of Manila.

The church's establishment and relevance are still strong; however, a lot of its processes still use dated methods. With these methods and many customers, the process has room for human errors such as duplicated records, loss of records, wrong input information, miscommunication, and missing records. This leads to the use of modern methods such as the utilization of technology to automate their processes and aid them in their accommodation of the customers.

To address these issues, the study aims to design and implement a modern, user-friendly system to automate and streamline these processes. The developers will bridge the church's gap in modern technology knowledge by creating a system that simplifies operations for the benefit of both the church staff and its customers.

1.2 Statement of the Problem

1. **The operational framework of the columbarium system is notably deficient.** The church has stated that they are having problems such as columbaries being sold twice, duplication of records, and difficulty keeping track of available columbaries, customer payment status, and contract validity.
2. **Outdated and inefficient retrieval of customer information.** The church's current system of storing customer records relies on a medium of physical copies of customer information in folders and MS Excel, which results in difficulties in retrieving customer information.
3. **Customer data lacks security.** Customer data lacks security since manual systems are prone to being lost due to human error, natural disasters, and/or the fragility of the material used for data storage.

1.3 Objectives

To answer the identified problems, the project's aim is to design a customized local web application. To be specific, this project aims to:

1. **Develop and deploy a Document Management System (DMS) with an AI-driven data cleaning tool and Ai voice assistant functionality within 3 semesters.** The AI tool should achieve a 95% success rate in identifying and merging duplicates, correct inconsistencies with 90% accuracy, and suggest updates with 85% confidence. The ai voice assistant should understand plain English queries with 80% precision. These will surely address their data handling problems and further improve the current system's inefficiency.
2. **Develop and deploy a fully automated and user-friendly dedicated customer web platform within 3 semesters.** Ensure that 95% of users can retrieve their information without needing to contact the staff, achieve a user satisfaction score of at least 4.5 out of 5 within three months of launch, and maintain system uptime of 100%.
3. **Implement a Raspberry Pi-based Nextcloud backup system within 3 semesters.** Ensuring 100% data availability and security and achieving an automated backup frequency of every 24 hours with a successful backup completion rate of 99%.

1.4 Significance of the Project

The Chambers of the Burning Ashes System (CBAS) is significant for its potential to modernize and improve the outdated and inefficient system at St. Alphonsus Mary de Liguori Parish, thereby reducing human errors and improving operational efficiency. By transitioning from manual record-keeping to a centralized, secure, and automated document management system, the church can ensure accurate tracking of columbaries, safeguard customer data, and provide better service to its community.

1. **St. Alphonsus Mary de Liguori Parish employees.** By implementing a document management system, employees will benefit from a streamlined workflow, reducing the time and effort required to manage columbarium records. This system will enable employees to accurately add, remove, and track columbaries, effectively eliminating issues like duplicate sales and lost records. The inclusion of automated data backup and encryption will ensure that records are secure and easily recoverable, mitigating risks associated with human error and data loss.

2. **Customers.** The implementation of a secure and automated document management system ensures that their data is handled with the utmost care, significantly reducing the risk of errors, loss, or miscommunication. In addition, the improved tracking of payment statuses will offer customers clear and accurate information about their transactions, fostering trust and satisfaction with the church's services.

1.5 Scope and Limitations

Scope

The research is limited to the creation and implementation of the new system. The system will be making use of MySQL as the main organization storage system and Nextcloud as the backup organization storage system. Focusing on cloud storage, it does not include services irrelevant to the system's design. The system will feature a user-friendly interface capable of catering to beginners in IT using the Django framework, an integrated cloud database backup storage through Nextcloud, an Optimal Character Recognition for data transferring, report generation for sales and availability of the columbaries, and analytics that utilizes machine learning. As the system will have analytics, it will also be making use of the relevant Python libraries for machine learning. Libraries like matplotlib will be heavily used for the analytics.

Limitations

As the system will make use of Django, it will not be using other frameworks such as Laravel and CodeIgniter. The system does not cover other areas and services of the Parish aside from those related to the columbaries services. Examples are the following: wedding services, funerary services, etc. Furthermore, the system will only be sought to improve on the current manual services and will not be in the online space.

II. Review of Related Literature / Systems

This section of the study offers a comprehensive examination of existing cases, literature, and systems essential to the research. It aims to provide a solid foundation and contextual background for the investigation. The review synthesizes critical insights from previous research, highlighting key findings and methodologies that inform and support the current study.

2.1 Securing data of customers in the cloud

Encryption is a strong technique that ensures data security by offering a strong barrier against cyber threats and unwanted access [1,2]. It works by transforming the original, or plaintext, data into an incomprehensible format called ciphertext. The application of advanced mathematical procedures ensures that only individuals with the correct password or decryption key may access the encrypted data, making this possible [1,2]. Digital information is essentially scrambled using a secret code, which is what encryption does. The encryption process is a multi-step process that starts with plaintext and ends with ciphertext output generated by an encryption method [3]. Thus, it is nearly impossible for hackers or other unauthorized parties to intercept and read the data because this ciphertext is unreadable without the decryption key [4].

Put simply, encryption encloses the data in a safe lock, hence guaranteeing that it cannot be read or used even if it is intercepted or accessed by hackers [5]. Therefore, encryption is a crucial feature of data security that should be implemented in most systems. The Parish can preserve the confidentiality, integrity, and availability of their digital assets by encrypting critical information to prevent theft, tampering, and unwanted access. This can be done through Nextcloud's system [6].

2.2 Cloud Storage Considerations for Modern Businesses

Cloud storage offers accessibility, allowing access to data from anywhere with an internet connection, making it ideal for remote work [4]. With Cloud storage, organizations can consider moving their data centers into the cloud [7].

Cloud storage has become a viable substitute for on-premises data management, with several advantages over the former [7]. Cloud storage offers unmatched accessibility in contrast to Network Attached Storage (NAS), which is limited to a local network [8]. The ability to retrieve data from any location with an internet connection makes it perfect for today's workforce. This flexibility is especially useful for geographically scattered teams and remote work situations, as employees can easily access and exchange files from any place.

Moreover, cloud storage can be strategically considered by businesses looking to maximize their IT infrastructure [9]. The Parish may save money on software and hardware capital expenses by transitioning from their current manual system to a cloud-based service [8,9].

Cloud service providers remove the need for upfront investments in physical infrastructure by providing flexible and scalable storage solutions that can adjust to changing data needs. This results in saving money and creating a more dynamic IT environment. This is something the parish should consider since they have chosen to transition to a web-based system.

2.3 Optical Character Recognition (OCR) to Transfer Physical Data to a Cloud

Optical character recognition (OCR) is a staple approach in computer vision, artificial intelligence, and pattern recognition domains. It involves transforming a range of document formats—including images of printed or handwritten text—into machine-encoded text. Because of this transition, OCR is now a major area of study and application for searchability, editability, and digital storage. The literature review provides a thorough examination of the critical methodologies, technological advancements, and applications of OCR.

Moreover, by using Tesseract [10] which is an open-source text recognition (OCR) Engine, it can be used directly, or (for programmers) using an API to extract text from images or even extract text from PDFs. It supports a wide variety of languages. Tesseract is most suitable for the study, as the parish currently has a large amount of data and information that they want to digitize.

OCR Process Flow

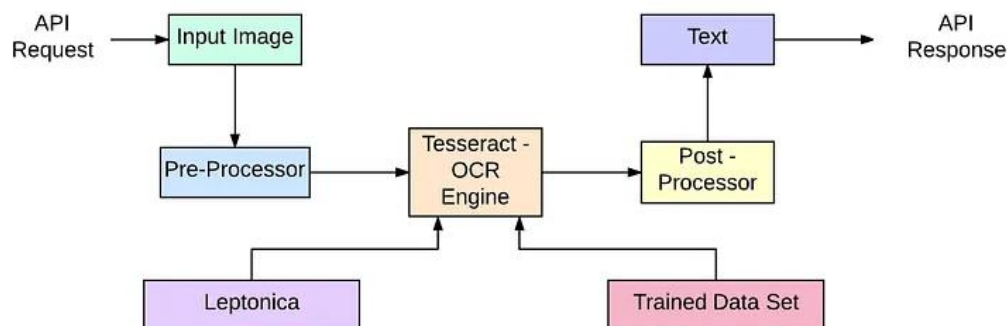


Figure 1 Tesseract OCR

2.4 The Efficiency of Nextcloud as a Cloud Storage System for Small Businesses

Nextcloud is a popular cloud storage system that provides efficient data storage and retrieval. With a higher resource utilization rate than Google Cloud, Nextcloud is a good alternative [11]. Its functionality was also assessed, and it was found that it was effective in terms of upload and download speeds for data. Moreover, NextCloud is a suitable solution for small businesses that want full control over their data and avoid the high costs of commercial cloud storage services [12]. A case study implementation of a custom cloud storage solution based on NextCloud shows that it is easy to deploy and customize to meet specific needs. NextCloud offers superior cloud storage services than Pydio, with a minor advantage over Pydio in terms of security and scalability [13]. All things considered, NextCloud is a dependable and reasonably priced option for companies and private users wishing to store and handle their data on the cloud. Hence, it is a good choice for the Parish which wants their data digitalized and secure.

2.5 Utilizing Raspberry Pi 5 for Nextcloud

The use of Raspberry Pi 5 for hosting Nextcloud Pi has garnered significant attention in recent academic literature. One study highlights Nextcloud's potential for developing safe personal cloud storage systems by examining its viability and dependability as a network-attached cloud storage solution on the Raspberry Pi platform [14]. According to this research, the Raspberry Pi 5 is a perfect choice for hosting Nextcloud applications due to its improved hardware capabilities, which include increased IOPS and processing capacity. The study further elaborates on the improved data handling and processing speeds compared to older models, which can significantly enhance user experience and system reliability. Moreover, the study underscores the importance of configuring appropriate power supply settings and leveraging community resources to address initial setup challenges, facilitating a smoother deployment process. Another academic examination analyzes the broader implications of integrating Nextcloud with Raspberry Pi for personal cloud storage [15]. This paper discusses the versatility of Raspberry Pi 5 in managing data privacy concerns and reducing dependency on commercial cloud services. It also highlights the community-driven support and extensive documentation available for troubleshooting and optimizing Nextcloud Pi installations. The researchers observed substantial performance improvements in real-time data synchronization and multi-user access when utilizing the Raspberry Pi 5, attributing these gains to the device's superior hardware specifications. These findings suggest that while initial setup may pose some challenges, the long-term benefits of employing Raspberry Pi 5 for Nextcloud Pi implementations are significant, offering a compelling alternative to traditional cloud storage solutions, thus making it a good choice for the parish as their database.

2.6 Machine Learning and Time-Series Through Python

Python has been growing in recent years and has become one of the dominant platforms for applied machine learning [16]. Python is optimal for its convenience of access, and beginner-friendly where even people who have never touched the programming space can learn easily compared to the other programming languages [17]. The main reason why Python is good for time-series forecasting specifically is because it is a general-purpose programming language that people can use for both Research and Development (R & D) as well as production [16].

To start with Machine Learning, it is necessary to extract a dataset relevant to the research. And since it is possible to train data from the web through Python, forecasting and analytics become more accessible. This is where the Python Libraries can come in. Pandas and matplotlib are essential tools that can be used for data analytics [16]. With pandas, it becomes possible for Python to read and understand datasets. On the other hand, matplotlib has tools for graphing and forecasting the data into visual graphics [16]. These can be utilized by CBAS, as it will have an analytics section on the home page.

Moreover, with data duplications, inaccuracies and errors bound to be present, automated data cleansing will be used in guaranteeing the dependability and integrity of the important data sets used. Approximately 90% of the data science life cycle is spent manually cleaning data. The data-cleaning pain point can be alleviated greatly by applying machine learning correctly. Automation can reduce the workload and save time since the cleaning process can be time-consuming and tedious [18]. Several tools and software's are available for automating data-cleaning tasks, such as Trifacta, OpenRefine, Talend, DataWrangler can be used by the researchers for features that aren't present could be made for the use of the study [19].

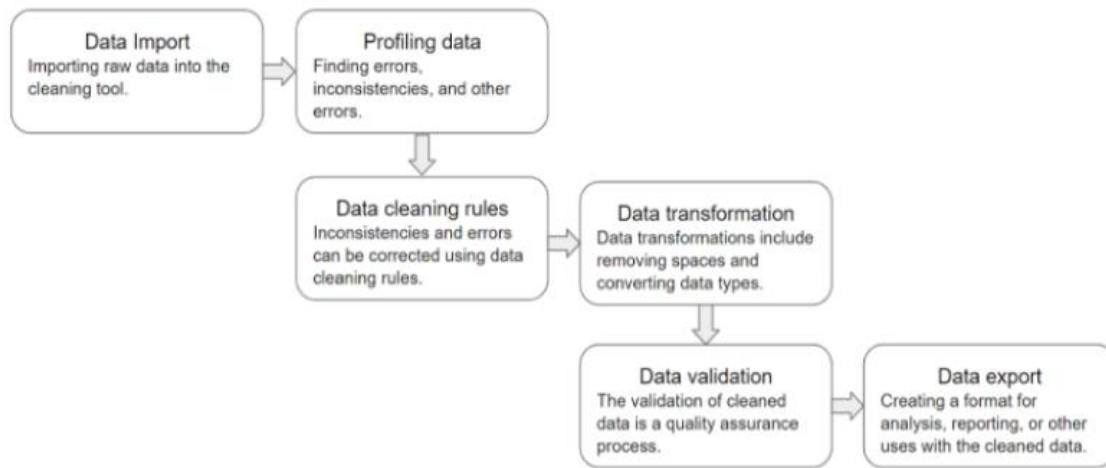


Figure 2 Automated Data Cleaning Workflow

2.7 AI-Powered Intelligent Search Engine

The implementation of artificial intelligence in intelligent search systems has revolutionized information retrieval across massive datasets. As the current system of the Parish heavily relies on manually searching Physical data, once they transfer to the cloud, they can utilize intelligent search. According to a study by Alizadeh and Hassan (2023), AI-powered search engines leverage advanced algorithms and machine learning to understand user intent and context, thereby providing highly accurate and relevant results. These systems employ natural language processing (NLP) and knowledge graphs to improve understanding and speed up data discovery. The integration of AI in search mechanisms has proven particularly effective in academic research, where it aids in navigating the extensive proliferation of scholarly articles, thus simplifying the information retrieval process for researchers [20].

Further, AI-powered intelligent search engines have shown exceptional capabilities in handling large-scale, multi-site research data, particularly in specialized fields such as oncology. An article by Smith and Jones (2023) describes an Intelligent Search & Retrieval System (IRIS) designed specifically for clinical and research activities in oncology. The system utilizes AI to aggregate and analyze vast datasets from multiple sources, providing clinicians and researchers with precise and actionable insights. This capability not only enhances the efficiency of data retrieval but also supports significant scientific and clinical advancements by ensuring access to the most relevant and up-to-date information [21].

2.8 Document Management System

Organizational effectiveness now depends on document management systems (DMS), especially when it comes to managing massive document quantities and promoting collaboration [22]. Historically, DMS converted paper documents into digital formats, making it an optimal solution for the Parish problem. Modern DMS now encompasses a suite of functionalities, including document capture, storage, retrieval, workflow management, and security. One of the critical benefits of DMS is the enhancement of information accessibility and the reduction of operational costs through streamlined processes [23]. Moreover, DMS supports version control and audit trails, which are crucial for regulatory compliance and maintaining document integrity [24].

Recent literature underscores the importance of good practices in DMS implementation. These practices include standardized procedures for document handling, robust security measures, and integration with other enterprise systems [25]. The systematic review of document management practices reveals that organizations employing these best practices experience significant benefits, such as cost savings, improved service delivery speeds, and enhanced user satisfaction [26]. Additionally, the integration of advanced technologies such as artificial intelligence and machine learning into DMS can further automate and optimize document-related tasks, leading to increased operational efficiency and data accuracy [22]. Thus, the strategic implementation and continuous improvement of DMS can be used by the Parish as they are aiming to enhance their document management capabilities and overall performance [266].

2.9 Integrating a custom voice assistant into a DMS

Voice assistants have revolutionized technology. In a DMS, a voice assistant can improve and simplify the user experience of the parish. Every voice assistant starts with speech recognition and NLP. The system can accurately process commands and requests thanks to NLP. Recent developments in NLP, such as transformer models like BERT and GPT-3 have greatly increased the precision and effectiveness of language interpretation [27]. These models can be trained on domain-specific data to handle DMS-related queries effectively. For instance, queries like "Provide a graph of the total earnings from the year 2015-2023" or "List down the names of customers who recently purchased columbaries" can be accurately interpreted and processed.

Spoken language is transformed into text via the voice recognition component, and the NLP engine processes the text. Deep learning algorithms are used by modern voice recognition systems to attain great accuracy. Recurrent neural networks (RNNs) and convolutional neural networks (CNNs) are used by open-source alternatives such as Mozilla's DeepSpeech and Google's Speech-to-Text to transcribe spoken words into text with remarkable accuracy [28]. Including such a component in the custom voice assistant ensures that the commands are correctly recognized and acted upon.

Integration with the DMS is crucial for the voice assistant to perform document-related tasks. This involves creating APIs that allow the voice assistant to interact with the DMS backend, fetching documents, updating records, generating graphs, and performing searches based on user queries. A robust indexing system within the DMS can improve the efficiency and speed of document retrieval [29].

Also, incorporating machine learning enables the voice assistant to learn from user interactions and improve its accuracy and efficiency over time. Techniques like reinforcement learning can also be employed to refine the assistant's responses based on user feedback, ensuring that it becomes more intuitive and user-friendly with continued use, making it ideal for people from the parish [30].

III. Current Systems

3.1 Current System

The St Alphonsus Mary de Liguori Parish currently utilizes a manual process when it comes to the process of acquiring a columbary. As seen in Figure 2, acquiring a columbary starts with the applicant submitting a letter of intent and their mode of communication to the parish's accounting office. Afterwards, the parish priest sends a reply to the applicant with the content being the schedule of when the applicant may choose a columbary and pictorial design of the new columbary. Terms and conditions for the privilege to use are also attached to the reply.

[Your Name]
 [Your Address]
 [City, State, ZIP Code]
 [Email Address]
 [Phone Number]
 [Date]

St. Alphonsus Mary de Liguori Parish
Humabon Place, Barangay Magallanes
Makati, Philippines

Dear Parish Office,

I hope this letter finds you well. My name is [Your Name], and I am writing to express my intent to apply for a columbarium vault at St. Alphonsus Mary de Liguori Parish. Our family has been deeply connected to the parish community, and it would be an honor for us to have a dedicated resting place for our loved one within the church grounds.

We are particularly interested in securing a vault for [Name of Deceased] who recently passed away on [Date of Passing]. We believe that the columbarium at your esteemed parish would be a fitting and sacred place for their eternal rest.

I kindly request information regarding the application process, available vault locations, and any associated fees. Additionally, I would appreciate guidance on the specific requirements and documentation needed to proceed with this application.

Thank you for considering our request. We look forward to your positive response and are eager to complete any necessary steps to secure a columbarium vault at St. Alphonsus Mary de Liguori Parish.

Yours sincerely,

[Your Name]
 [Your Signature]

Figure 3 Letter of Intent Example Sample

ST. ALPHONSEUS MARY DE LIQUORI PARISH
Parish Office: 1440 Lakeshore Village, Kansas City
Tel No: 852-27-50 851-02-75

RISEN CHRIST MEMORIAL GARDEN
DONOR'S INFORMATION SHEET

PLEASE PRINT:

Full name: _____
Permanent Address: _____
Current Address: _____
Provincial Address: _____
Email Address: _____ Mobile Number: _____
Landline Number: _____
Date & Place of Birth: _____
Place of Catholic Baptism: _____
Date of Catholic Baptism: _____
Religious Organization (s) affiliated with: _____
Donor's Occupation: _____
Employer's Name/Business Name: _____
Business Address: _____
Employer's Email Address/Business Email Address: _____ Business Mobile Number: _____
Business Landline Number: _____ Years in Employment/Business: _____
Position: _____
Spouse's Name: _____
Spouse's Religion: _____
Date & Place of Birth: _____
Spouse's Email Address: _____ Mobile Number: _____
Spouse's Landline Number: _____
Father's Name: _____
Father's Landline Number: _____ Mobile Number: _____
Father's Email Address: _____
Mother's Name: _____
Mother's Landline Number: _____ Mobile Number: _____
Mother's Email Address: _____

BENEFICIARIES

FIRST PRIORITY

Full name: _____
Permanent Address: _____
Current Address: _____
Provincial Address: _____
Email Address: _____ Mobile Number: _____
Landline Number: _____
Date & Place of Birth: _____
Place of Catholic Baptism: _____
Date of Catholic Baptism: _____

Figure 4 Columbarium Application Form Sample

As demonstrated in Figure 3, the customers have already submitted their letter of intent and after it has been approved. They must fill in the required details, after filling out the needed details the faculty will be typing the information into an Excel file sheet for backup purposes. Afterwards, the customers would need to sign a memorandum. This is to inform them of the rules and regulations of having the privilege of the church's columbarium.

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This Memorandum of Agreement made and executed this ____ day of _____, Philippines by and between:

at _____

The Roman Catholic Archbishop of Manila (St. Alphonsus Mary de Liguori Parish), a corporation sole duly organized and existing under and by virtue of the laws of the Philippines, with office address at 121 Arzobispo Street, Intramuros, Manila, hereinafter referred to as the "FIRST PARTY"

- In favor of -

of legal age, (status), (citizenship), with residence at _____

hereinafter referred to as the "SECOND PARTY"

WITNESSETH:

Whereas, the FIRST PARTY is the absolute and registered owner of a parcel of land situated in Makati City, Philippines covered by Transfer Certificate of Title No. S-75194 of the Register of Deeds of Makati City, more particularly described as follows:

A parcel of land (Lot 7, of the consolidation-subdivision plan (LRC) Pcs-6418, being a portion of the consolidation of Lots 1-5, Block 1, (LRC) Pcd-12510, LRC (GL) Record No. 2029), situated in the Municipality of Makati, Province of Rizal. Bounded on the NE., points 4 to 1, by Manila South Diversion Road, 40.00 (Lot 63-B-1-D, Pcd-51512); on the SE., and SW., points 1 to 8, by the Maricaban Creek; and on the NW., points 3 to 4 by Lot 9 of the consolidation-subdivision plan. xxx containing an area of ONE THOUSAND THREE HUNDRED AND EIGHTY FOUR (1,384) SQUARE METERS, more or less. xxx

Whereas, belief in the resurrection of the dead is an essential element of the Christian faith. Pursuant to this belief, the FIRST PARTY deems it imperative that bodies of the departed be treated with respect and charity, the burial of the dead being a Corporal Work of Mercy;

Whereas, Code of Canon Law of 1983 does not forbid cremation anymore, the FIRST PARTY supports the faithful who have chosen cremation for worthy motives in honoring the life and memory of the departed and has set aside a portion of its land covered by TCT S-75194 for the construction of a columbarium, hereinafter referred to as the Risen Christ Memorial Garden (RCMG for brevity)

Whereas, the FIRST PARTY agrees to grant a "Privilege to Use" over the columbarium vaults to qualified members of the Catholic Church for a specific period subject to the limitations imposed by the 1983 Code of Canon Law, RCAM Columbarium Policy and Operations Manual, and RCMG rules and regulations;

Whereas, the SECOND PARTY is interested in acquiring a "Privilege to Use" a columbarium vault for the period designated by the FIRST PARTY under the terms and conditions the FIRST PARTY may impose;

Whereas in this agreement, the FIRST PARTY to represent RCAM is composed of the Parish Priest with the RCMG Committee;

NOW, THEREFORE, for and in consideration of the foregoing premises, the FIRST PARTY hereby grants the SECOND PARTY a "Privilege to Use" a vault in RCMG, subject to the following conditions:

Figure 5 Columbarium Memorandum Sample

As seen in Figure 4, the memorandum is given to the customer so they will know the terms and conditions of the columbarium. This will solidify that both parties have come to an agreement that having a crypt is a privilege and not owned by the paying customer. The memorandum includes the following:

- RCAM is the absolute and registered owner of the RCMG and the land on which it is constructed hence has full control/supervision of it.
- RCAM agrees to grant a "Privilege to Use" the columbarium vault to qualified members of the Catholic Church. St. Alphonsus Mary de Liguori parishioners are given priority of use.
- The "Privilege to Use" these vaults is subject to the Code of Canon Law (1983), RCAM Columbarium Policy and Operations Manual, Memorandum of Agreement, RCMG Rules and Regulations.
- The "Privilege to Use" these vaults shall be for fifty (50) years from the date of the issuance of the certificate of privilege unless earlier terminated by RCAM for causes

stated in the Memorandum of Agreement on the privilege to use said vault/s. Only one (1) vault is issued to every applicant.

- The holder of a "Privilege to Use" the vault acquires no right of ownership over the vault nor any right to transfer the same.
- The vault shall be used exclusively for the interment of human ashes.
- No more than four (4) urns containing human ashes may be placed in one (1) vault.
- The "Privilege to Use" holder will designate in writing the names of beneficiaries whose ashes will be buried in the vault and their order of priority. The terms and conditions of this privilege shall be binding upon the holder and beneficiaries. The human ashes shall be kept in urns whose names are written/etched for easy identification. 0. Only Catholic liturgy may be administered in the RCMG premises. No Holy Mass shall be done inside the RCMG, only blessings.
- No other memorials, monuments, statues/ images/ signs or inscriptions for uniformity sake shall be installed in the vault's plaque (marble plate) Cost for etching names in the memorial plaques shall be borne by said holder.
- Holders of these "Privilege to Use" are bound by the notices sent to their address of record. Holders are responsible for updating the RCMG Committee of any change of address.
- No liability shall be attached to the RCAM if the columbarium/vaults are destroyed due to fortuitous events or force majeure. 14. RCAM reserves the right to transfer RCMG should it be necessary to comply with law or for reasons which the RCAM may deem fit.
- Removal of ashes shall be allowed only for reasons satisfactory to and with written consent of the Parish Priest. Removal of the ashes shall only be made after the "Privilege to Use" holder has complied with the requirements of the RCAM and legal authorities.
- Holders of the "Privilege to Use" agree to comply with the RCMG Rules and Regulations on the use, maintenance/upkeep of the vault and surrounding areas including any amended rules/regulations that the RCMG Committee may subsequently promulgate.

After reading and completing the memorandum, the customer's files will be kept in a filing cabinet and transferred into a folder in a local storage.



Figure 6 Storage of Customer Records

As seen in Figure 5, each customer has their own folder, and these folders are organized alphabetically. This process provides many difficulties to the employees such as manipulating customer data, searching customer names, and duplication of records. This has caused problems due to the customers forgetting their own columnary numbers, losing their certificates and customer complaints.

3.2 Technical Background

Current software used by the parish includes Microsoft Excel as seen in Figure 5 to input customer information such as the name of the insured, their payments, balances, and other relevant remarks.

GARDEN OF ROSEN CHRIST MEMORIAL GARDEN
MASTER LIST OF CRYPT
WEST

CRYPT #	NAME OF DONOR	NAME ON INURNED	Inurnment Details	PAYMENT		BALANCE		CONTACT DETAILS	REMARKS
				Amount	OR No. / Date	Amount	OR No. / Date		
1A			1184 July 21, 2005		09/02/1997				09/02/1997 w/ certificate
1B			0758 10/21/2021		09/02/1997				07/07/2021 w/ certificate
1C									
2A									

Folders - brown

Figure 7 Storage of Customer Data and Balances

Furthermore, as seen in the picture below, Figure 6 showcases the usage of Facebook and Messenger by the Parish. Continuing, also available on their Facebook page are their G-mail address and landline numbers for direct contact with customers. These systems enable the Parish to have an online presence.

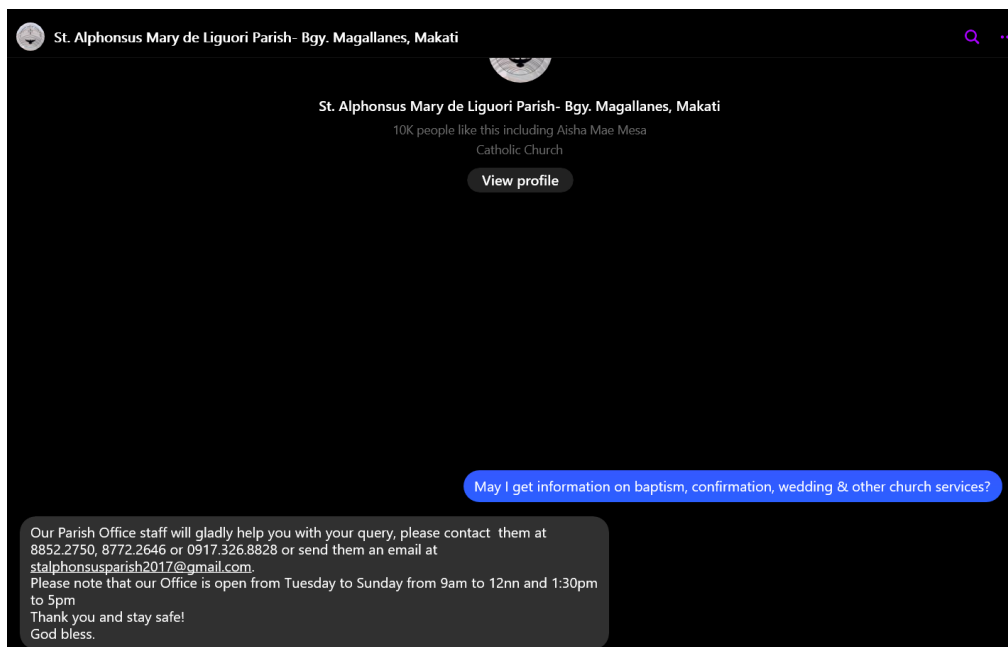


Figure 8 FB Messenger Interface

3.3 List of Processes

Table 1 contains the list of current processes being performed by the client.

Process ID	Process Name	Process Details
P001	Columbary Application Process	7
P002	Retrieval of Customer Records Process	8
P003	Storing of Customer records Process	9

Table 1 List of Processes

Figure 8 describes the process of applying for a columbary. The pain point of the client is how they store the customer records, and they want to make it more efficient without compromising the original process of applying.

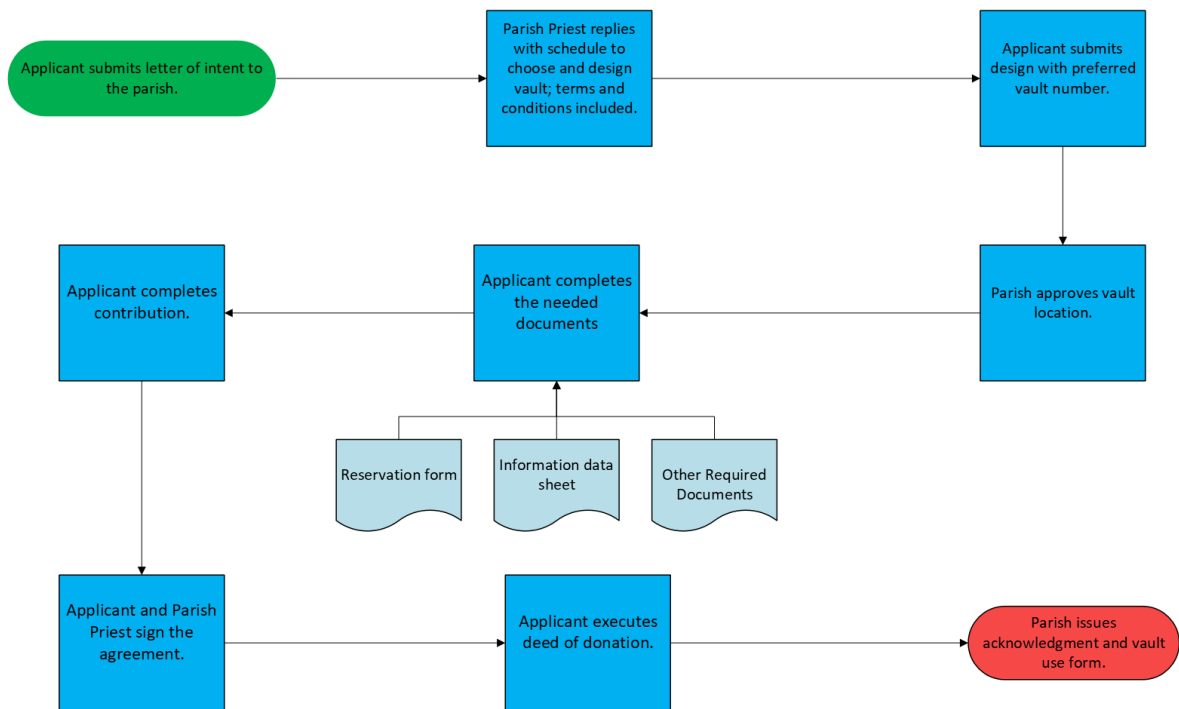


Figure 9 Columbary Application Process

Figure 9 describes the process of retrieving customer records. The pain point of the client is the inefficient retrieval of customer records. They seek to have easier access to customer records for faster service to the customer.

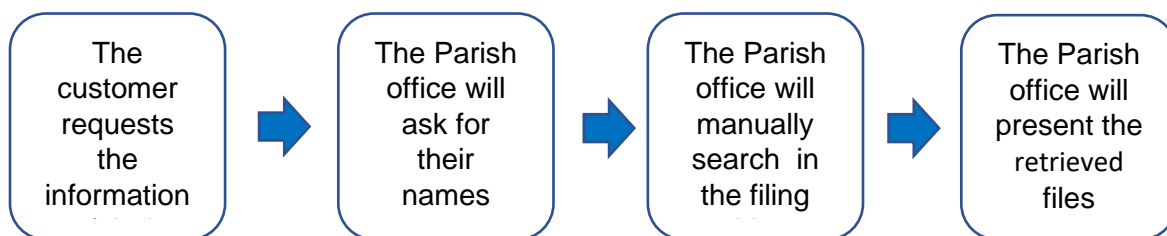


Figure 10 Retrieval of Customer Records Process

Figure 10 describes the process of storing customer records. The pain point of the client is they do not have a backup location for their files. They seek to have much more secure storage of data.

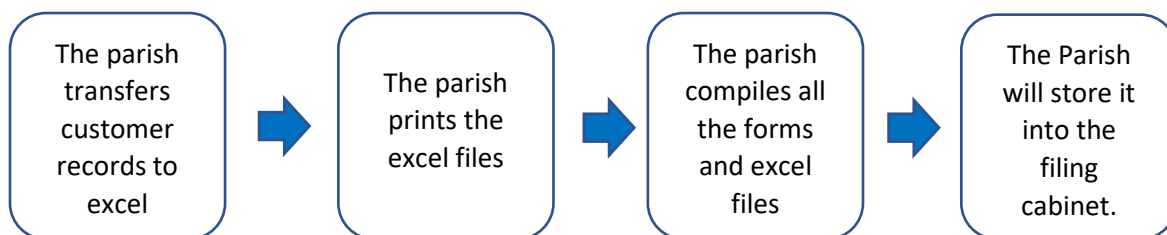


Figure 11 Storing of Customer Records

3.4 SWOT Analysis

Table 2 SWOT Analysis

Strength	Weaknesses
<ul style="list-style-type: none"> • Structured Process: The detailed steps ensure clarity and consistency in handling applications. • Personalized Service: The applicant can choose a vault and design, providing a tailored experience. • Formal Agreements: The memorandum of agreement and deed of donation create 	<ul style="list-style-type: none"> • Complexity: The multi-step process may be seen as cumbersome and time-consuming for applicants. • Dependency on Parish Priest: The process heavily relies on the availability and actions of the Parish Priest, which could cause delays. • Paperwork Intensive: Requires extensive documentation and

<p>legal and formal recognition of the arrangement.</p> <ul style="list-style-type: none"> • Clear Communication: Replies and terms and conditions ensure that applicants are well-informed about the process and expectations. • Documented Contributions: The acknowledgment of donation ensures transparency and formal recognition of the applicant's contributions. 	<p>forms, which may be burdensome for some applicants.</p> <ul style="list-style-type: none"> • Potential for Miscommunication: Multiple steps and interactions increase the risk of miscommunication or misunderstandings.
Opportunities	Threats
<ul style="list-style-type: none"> • Improvement through Feedback: The process can be refined based on applicant feedback to enhance efficiency and satisfaction. • Technology Integration: Implementing online forms and digital communication can streamline the process and reduce paperwork. • Enhanced Transparency: Detailed terms and conditions and formal agreements can build trust and credibility among parishioners. • Community Engagement: The process can foster a stronger sense of community and involvement in parish activities. 	<ul style="list-style-type: none"> • Applicant Frustration: The complexity and length of the process may deter potential applicants. • Resource Constraints: Limited availability of the Parish Priest or administrative support could slow down the process. • Compliance Risks: Ensuring all legal and procedural requirements are met can be challenging and may expose the parish to compliance risks. • Competitive Alternatives: Applicants might seek simpler or more efficient options elsewhere if the process is perceived as too cumbersome.

IV. Proposed Solution

4.1 Lean Canvas

Problem

1. **The Operational Framework of the Columbarium System is Notably Deficient.** The church has stated that they are having problems such as columbaries being sold twice, duplicated records, and difficulty keeping track of available columbaries, the customer payment status, and contract validity.

2. **Outdated and Inefficient Retrieval of customer information.** The church's current system of storing customer records relies on a medium of physical copies of customer information in folders and MS Excel, which results in difficulties in retrieving customer information.
3. **Customer data lacks security.** Customer data lacks security since manual systems are prone to being lost due to human error, natural disasters, and/or the fragility of the material used for data storage.

Solution

1. **Develop and deploy a Document Management System (DMS) with an AI-driven data cleaning tool and Ai voice assistant functionality within 3 semesters.**
2. **Develop and deploy a fully automated and user-friendly dedicated customer portal within 3 semesters.**
3. **Implement a Raspberry Pi-based Nextcloud backup system within 3 semesters.**

Key Metrics

1. Number of customers applying for columbary services.
2. Number of complaints regarding their columbary services.

Unique Value Proposition

1. A custom-made cloud system for columbary.
2. Visuals for generating sales reports, newly occupied columbaries, and updates to the columbary system.
3. AI Voice Assistant for navigation and generating customized reports.
4. Backup for the data in a cloud server

Customer Segment

1. St. Joseph Alphonsus Mary De Liguori Parish Church.
2. People that want to apply for their services.

Channels

1. Internet
2. Social Media
3. Email

Revenue Streams

1. Investment
2. Donations - to sustain the church offices

Cost Structure

1. Hosting a cloud server.
2. Development and maintenance of the system.
3. Technical support.

Unfair Advantage

1. The client's location is easily accessible.

4.2 Product Vision

For St. Alphonsus Mary De Liguori Parish

Who needs a document management system for customer data management with additional backup locations.

THE Chambers of The Burning Ashes System is a web-based document management system.

THAT seeks to secure customer records, improve the storing and retrieving process of columbarium records without compromising the original process. Manipulating customer records will be much easier and more convenient.

UNLIKE other columbarium services, the accepting of applications is outdated, and the customer records consolidations are kept physically and locally.

4.3 Technology Specifications

The technology stack to be used for the system will be in the form of a web-based application that utilizes the Django framework as the base, Nextcloud Pi for the storage backup, MySQL as the main database, Raspberri Pi and python for the voice assistant, and relevant Python libraries such as matplotlib for analytics. For Development, Visual Studio 2022, Visual Studio Code, MySQL, Nextcloud, GitHub for collaboration, and Windows will be used.

These were selected because they are relevant to the system and are modern solutions that can last longer than their current system. Below are the detailed specifications for each aspect:

Hardware:

1. Main Hardware:

- **Raspberry Pi 5:** will be used as the main hardware. Specifications are the following:
 - Broadcom BCM2712 2.4GHz quad-core 64-bit Arm Cortex-A76 CPU, with cryptography extensions, 512KB per-core L2 caches and a 2MB shared L3 cache
 - VideoCore VII GPU, supporting OpenGL ES 3.1, Vulkan 1.2
 - Dual 4Kp60 HDMI® display output with HDR support
 - 4Kp60 HEVC decoder
 - LPDDR4X-4267 SDRAM (4GB and 8GB SKUs available at launch)
 - Dual-band 802.11ac Wi-Fi®
 - Bluetooth 5.0 / Bluetooth Low Energy (BLE)

- microSD card slot, with support for high-speed SDR104 mode
- 2 × USB 3.0 ports, supporting simultaneous 5Gbps operation
- 2 × USB 2.0 ports
- Gigabit Ethernet, with PoE+ support (requires separate PoE+ HAT)
- 2 × 4-lane MIPI camera/display transceivers
- PCIe 2.0 x1 interface for fast peripherals (requires separate M.2 HAT or other adapter)
- 5V/5A DC power via USB-C, with Power Delivery support
- Raspberry Pi standard 40-pin header
- Real-time clock (RTC), powered from external battery
- Power button
- **Monitor:** A simple monitor capable of at least 60 hertz refresh rate minimum.
- **1 TB micro-SD card:** which can be read by the in-built SD card reader of the raspberry pi 5 which will be used for connecting to the Nextcloud.

2. Client Workstations:

- **Parish Desktop:** A standard work computer that is capable of doing basic tasks.
- **Scanner Printer:** A scanner capable of scanning documents where text can be easily read for OCR purposes.
- **Mobile Phone:** A mobile phone capable of taking pictures of columbaries which can then be connected to the application for data searching.

Software:

1. **Document Management System:**
 - MySQL and Nextcloud will be utilized for storing data, document requests, and transactional data securely.
 - Hostinger will be used for hosting the system.
2. **Web Framework:**
 - Use of modern web development frameworks, specifically, Django to build a scalable and secure backend system.
3. **Front-end Technology:**
 - HTML5, CSS3, and JavaScript for creating a responsive and user-friendly interface.
4. **Optimal Character Recognition:**
 - Tesseract will be used for scanning the photos and directly integrating the data into the database.
5. **Collaboration Tools:**
 - Collaboration through GitHub and Microsoft Teams will be essential for the project.
6. **Analytics Tools for Visual Representations:**
 - Python 3, the relevant libraries, and Visual Studio Code will be used for machine learning and visualizing of the data.
 - Pandas will be used for cleaning the dirty data.

7. Custom Voice Assistant

- Python and Raspberri Pi will be used for the development of the custom voice assistant.

4.4 Feasibility

4.4.1 Technical Feasibility

This section presents the outline of the extent to which the system can be successfully designed, developed, and installed by the group.

One of the technical risks of this is the adaptability of the users to the new management system of records. As shown, the researchers will implement a document management system where many manual procedures in storing customer records will be removed. After the new management system's implementation, the client should be able to learn how to use it.

With continuous meetups with the St. Alphonsus Mary de Liguori parish office headed by Mr. Lito Sulit. They have agreed that they have the willingness to adapt the new system that will be implemented, and they have signed an agreement between Asia Pacific College and the church.

4.4.2 Economic Feasibility

Development Costs

The client will not incur any development costs for this system. The proponents have offered to develop it for free as part of the project-based learning program at the School of Computing and Information Technologies, Asia Pacific College.

Operational Costs

As of now, operational costs such as software licensing fees, hardware upgrades, software upgrades, and equipment upgrades have not been confirmed. Additionally, the system will be developed using free tools like Django and Nextcloud.

Tangible Benefits

By developing this web-based platform, we are significantly enhancing the client's operational efficiency and productivity. The platform streamlines the entire process by eliminating the need for manually searching through and storing physical files in filing cabinets. This digital solution not only saves valuable time but also reduces the likelihood of errors and misplacements that are common with manual systems. Furthermore, it facilitates quick and easy access to information, enabling the client to retrieve necessary documents within seconds rather than hours. As a result, the client can focus more on core business activities and strategic decision-making, ultimately leading to increased profitability and growth. Additionally, the platform's intuitive interface and advanced search capabilities ensure that users can navigate and manage documents with ease, further contributing to a more efficient and seamless workflow.

Intangible Benefits

Developing this system will modernize the user experience for employees of St. Alphonsus Mary de Liguori parish, enhancing their job gratification. Additionally, by automating the current processes, we reduce the risk of errors and mishandling of customer records associated with the existing system. Ultimately, this will aid in decision-making because the data will be presented in a modernized format with a user-friendly interface.

4.4.3 Operational Feasibility

This section assesses how well the system will ultimately be accepted by its users and incorporated into the ongoing operations of St. Alphonsus Mary de Liguori Parish.

St. Alphonsus of Mary de Liguori has expressed support for the proposed system following discussions with the Parish office, emphasizing the need for a more efficient method of storing and retrieving customer data. It has been recognized that the current process is not sustainable in the long term, prompting the development of a new system tailored for use by the Parish officers. The primary objective driving this initiative is the proper consolidation of data, reduction of errors in handling customer information, and enhancing the overall user experience at the Parish office.

By addressing both existing challenges and potential future difficulties, the new system development directly aligns with the core goals of St. Alphonsus of Mary de Liguori. In order to assess the effectiveness and user acceptance of the newly developed system, the researchers will be conducting interviews structured around a modern technology acceptance framework. This approach aims to evaluate the system's performance based on its compatibility with existing workflows and ease of use for the end-users. Through this evaluation process, valuable insights will be gained regarding the system's functionality and its impact on the daily operations of the Parish office.

4.4.4 Schedule Feasibility

The development process is set to unfold across a carefully planned timeframe spanning three to four terms. Commencing with the initiation of MNTSDEV in the third semester of the academic year 2024-2025, the researchers will delve into understanding the client's needs, identifying key business challenges, and culminating the term with the presentation of a prototype. Subsequently, the following semester will be dedicated to focusing on the intricate details of user interface design and engineering the system requirements.

During this phase, the researchers will employ various techniques such as creating models and diagrams to illustrate the high-level design of the new system. In order to maintain transparency and effective communication between the research team and the project manager, project management tools like SharePoint will be deployed. This will aid in monitoring and tracking the progress of the system development, ensuring that all stakeholders are abreast of the project's status and milestones. Through the utilization of such tools, collaboration and coordination within the team will be streamlined, fostering a more efficient and structured approach toward achieving the project objectives.

V. Requirements Analysis

5.1 Product Backlog / User Stories

Table 3 Product Backlog

PRODUCT BACKLOG					
ID	As a...	I want to be able to	So that	Priority	Status
1	Parish Administrator	View the columbary records remotely	I can monitor the status of the columbary	Must	Not yet Started
2	Parish Office Staff	Input files directly	The process will be much faster	Must	Not yet Started
3	Parish Office Staff	Search for columbary using customer names and columns.	we will have a much more convenient way of searching customer columbary	Must	Not yet Started
4	Parish Office Staff	Retrieve information easily	The service will be much faster and less hassle to the customer.	Must	Not yet Started
5	Parish Office Staff	Track available columbaries	I can easily confirm the available columbaries to the customers	Must	Not yet Started
6	Parish Office Staff	To be able to track customer payment status	We will be able to contact the customer faster about their balances.	Must	Not yet Started

7	Parish Office Staff	Update the files.	File handling can be much easier and faster	Must	Not Yet started
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5.2 Use Case Diagram

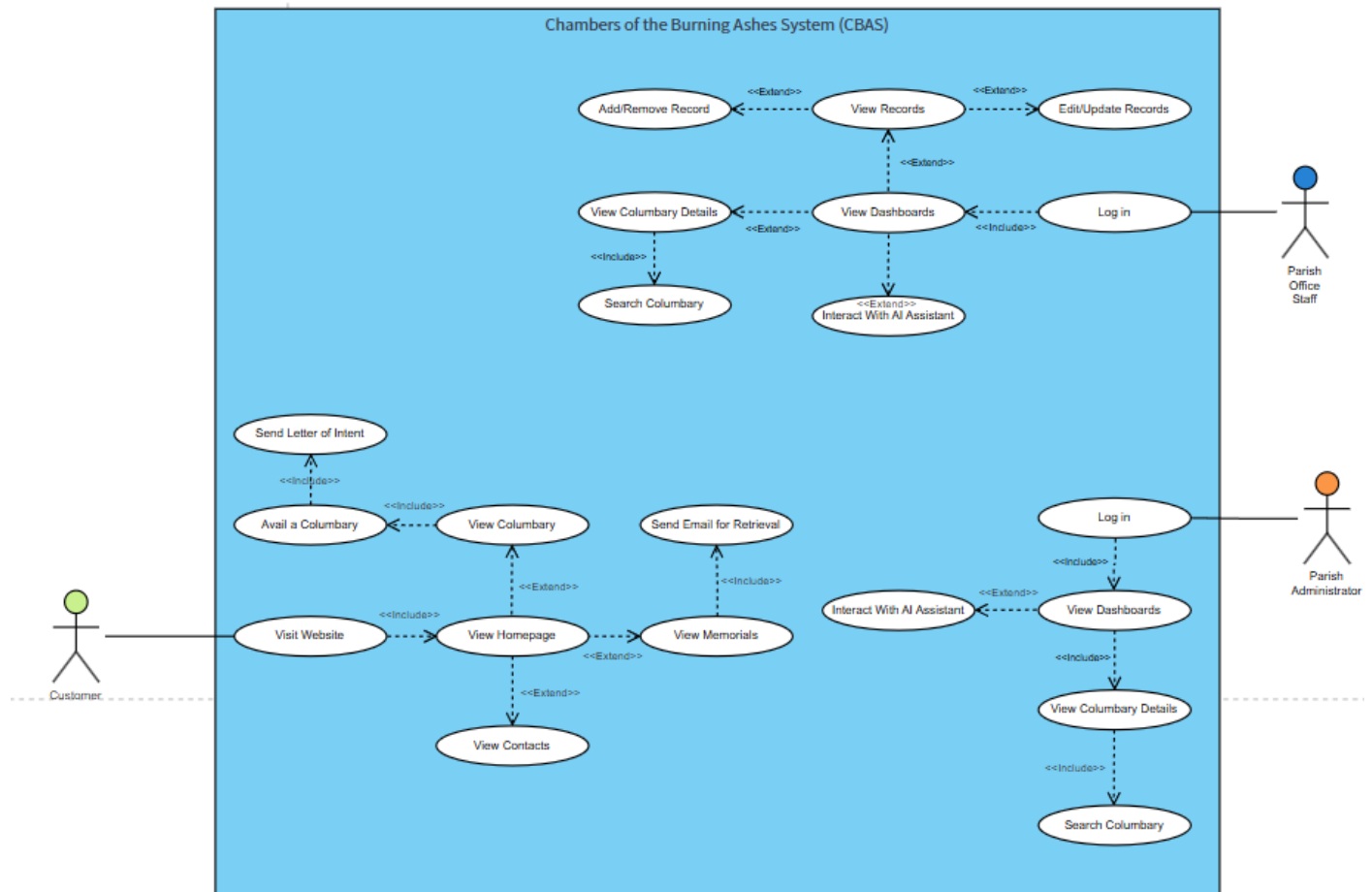


Figure 12 Use Case Diagram

5.3 User Classes and Characteristics

Table 4 User Classes and Classification

Roles	Description
-------	-------------

<i>Parish Office Staff</i>	<i>The main user of the new system that is being developed</i>
<i>Parish Administrator</i>	<i>The one who oversees the management of columbaries and checks them sometimes.</i>
<i>Customer</i>	<i>The possible consumers of the columbary services offered by the Parish</i>

5.4 Use Case Description

Table 5 User Login

Use Case Name	Login
Use Case Number	UC-01
Use Case Description	The Parish office staff and Parish administrator will be required to log in to their accounts
Actors	Parish Office staff, Parish administrator
Triggers	Logging in is needed to access the tools of the webpage
Pre-Conditions	<ul style="list-style-type: none"> Needs to be done on-premises
Post-Conditions	<ul style="list-style-type: none"> The user can now access the webpage. The user will initially land on the homepage.
Main Scenario	<ol style="list-style-type: none"> The user is on-premises. The user is required to log in using his/her username and password The user logs in using his/her credentials The system recognizes the correct credential. The user is now allowed to use the web application.

Table 6 Add/Remove Record

Use Case Name	Add/Remove Record
Use Case Number	UC-02
Use Case Description	This use case allows the user to add and delete customer records
Actors	Parish Office staff
Triggers	They simply navigate to the record page and navigate to the add button and delete button.
Pre-Conditions	<ul style="list-style-type: none"> The user must be logged in to the system The system identifies the users' privileges

Post-Conditions	<ul style="list-style-type: none"> • The user can now add records • The user can now remove records
Main Scenario	<ol style="list-style-type: none"> 1. The user logs into the management system 2. The user navigates to the record page. 3. The user navigates the add button and delete button.

Table 7 Edit/Update Record

Use Case Name	Edit/Update Record
Use Case Number	UC-04
Use Case Description	This use case allows the user to edit and update customer records
Actors	Parish Office staff
Triggers	The user navigates to the record page and then clicks on a customer record detail. Afterwards, click the edit button.
Pre-Conditions	<ul style="list-style-type: none"> • The user must be logged in to the system • The system identifies the users' privileges
Post-Conditions	<ul style="list-style-type: none"> • The user can now Edit records • The user can save edited records.
Main Scenario	<ol style="list-style-type: none"> 1. The user logs into the management system 2. The user navigates to the record page. 3. The user then picks a customer and clicks on view details. 4. The user navigates the edit button.

Table 8 Search Columbarry

Use Case Name	Search Columbarry
Use Case Number	UC-05
Use Case Description	This use case is to search for customer records by using their names or columbarry numbers.
Actors	Parish Office Staff
Triggers	The user simply navigates to the record page and from there the user can navigate to the search bar on the record page.
Pre-Conditions	<ul style="list-style-type: none"> • The user must be logged in to the system • The system identifies the users' privileges

Post-Conditions	<ul style="list-style-type: none"> • The user can input the customer name. • The user can input the columbary number.
Main Scenario	<ol style="list-style-type: none"> 1. The user logs into the management system 2. The user navigates to the record page. 3. The user inputs the customer name or columbary number. 4. The user enters the input credentials.

Table 9 View Columbary Details

Use Case Name	View Columbary Details
Use Case Number	UC-06
Use Case Description	This is to view the customer details of the said columbary.
Actors	Parish Office Staff, Parish Administrator
Triggers	The user navigates to the columbary button and from there on the user can have the option to view the map or view list.
Pre-Conditions	<ul style="list-style-type: none"> • The user must be logged in to the system • The system identifies the users' privileges
Post-Conditions	<ul style="list-style-type: none"> • The user can see the details of the columbary • The user can download the files of the details. • The user can view the files.
Main Scenario	<ol style="list-style-type: none"> 1. The user logs into the management system 2. The user navigates to the record page. 3. The user clicks on the "check details" button.

Table 10 View Records

Use Case Name	View Records
Use Case Number	UC-07
Use Case Description	This use case is to view the details of the customer records.
Actors	Parish Office Staff, Parish Administrator
Triggers	The user navigates the record button and clicks on it.

Pre-Conditions	<ul style="list-style-type: none"> The user must be logged in to the system The system identifies the users' privileges The user clicks on the record page button.
Post-Conditions	<ul style="list-style-type: none"> The user can view the records The user can filter out the records The user can
Main Scenario	<ol style="list-style-type: none"> The user logs in to the system The system allows the user to access the webpage. The user clicks on the record tab The user is now on the record page.

Table 11 View Dashboard

Use Case Name	View Dashboard
Use Case Number	UC-08
Use Case Description	This use case is to view the dashboard/home page of the system.
Actors	Parish Office Staff, Parish Administrator
Triggers	The user simply logs in successfully using the correct username and password.
Pre-Conditions	<ul style="list-style-type: none"> The user must be logged in to the system The system identifies the users' privileges
Post-Conditions	<ul style="list-style-type: none"> The user can now access the webpage The user will land on the dashboard The user can now view the summary of the reports
Main Scenario	<ol style="list-style-type: none"> The user logs in to the system The system allows the user to access the webpage. The user now lands on the dashboard.

Table 12 Interact with AI Assistant

Use Case Name	Interact with AI Assistant
Use Case Number	UC-09
Use Case Description	This use case is for interacting with the AI voice assistant
Actors	Parish Office Staff, Parish Administrator

Triggers	The user navigates to the mic icon and clicks on it.
Pre-Conditions	<ul style="list-style-type: none"> The user must be logged in to the system The system identifies the users' privileges
Post-Conditions	<ul style="list-style-type: none"> The user can interact with the AI assistant, ask it to make simple tasks such as retrieving data, learning specific information on certain customer details, or generate reports on sales
Main Scenario	<ol style="list-style-type: none"> The user logs in to the system. The system allows the user to access the webpage. The user clicks on the mic button The user interacts with the AI assistant

Table 13 Visit Website

Use Case Name	Visit Website
Use Case Number	UC-10
Use Case Description	This use case is to visit the website
Actors	Customer
Triggers	The user enters the website URL into their browser.
Pre-Conditions	<ul style="list-style-type: none"> The user must have a web browser The user must have internet connection
Post-Conditions	The user can visit the website
Main Scenario	<ol style="list-style-type: none"> The user boots up their device The user clicks on their browser The user types in the link of the site The user visits the website

Table 14 View Homepage

Use Case Name	View Homepage
Use Case Number	UC-11
Use Case Description	This use case is to view the homepage
Actors	Customer
Triggers	The user enters the website URL into their browser.
Pre-Conditions	<ul style="list-style-type: none"> The user must have a web browser

	<ul style="list-style-type: none"> The user must have internet connection
Post-Conditions	The user can navigate the homepage.
Main Scenario	<ol style="list-style-type: none"> The user clicks on their browser The user types in the link of the site The user visits the website The user navigates the homepage

Table 15 View Contacts

Use Case Name	View Contacts
Use Case Number	UC-12
Use Case Description	The user can view the contact details the parish
Actors	Customer
Triggers	The user navigates to the view contacts icon and clicks on it
Pre-Conditions	The user must be on the homepage
Post-Conditions	The user can view the contact details of the parish
Main Scenario	<ol style="list-style-type: none"> The user visits the website The user navigates the homepage The user clicks on the view contacts icon

Table 16 View Memorials

Use Case Name	View Memorials
Use Case Number	UC-13
Use Case Description	The user can view their memorials
Actors	Customer
Triggers	The user navigates to the view memorials icon and clicks on it
Pre-Conditions	The user must be on the homepage
Post-Conditions	The user can view memorials
Main Scenario	<ol style="list-style-type: none"> The user visits the website The user navigates the homepage The user clicks on the view memorials

Table 17 Send Email for Retrieval

Use Case Name	Send Email for Retrieval
Use Case Number	UC-14
Use Case Description	The user can view the memorials in their personal email
Actors	Customer

Triggers	The user navigates to the view memorials and input his/her registered email address.
Pre-Conditions	<ul style="list-style-type: none"> • The user must be on the platform • The user must be in the memorials tab
Post-Conditions	The user will receive an automated email of her columbarry details
Main Scenario	<ol style="list-style-type: none"> 1. The user visits the website 2. The user navigates the homepage 3. The user clicks on the view memorials 4. The user inputs his/her email address 5. The user clicks enter 6. The user receives an email from the system.

Table 18 view available columbaries

Use Case Name	View available columbaries
Use Case Number	UC-15
Use Case Description	The user can view the available columbaries from the home page
Actors	Customer
Triggers	The user navigates to the landing page and click on the “avail now” button
Pre-Conditions	<ul style="list-style-type: none"> • The user must be on the platform • The user must be on the landing page of the website
Post-Conditions	The user can now view the map of the columbaries
Main Scenario	<ol style="list-style-type: none"> 1. The user visits the website 2. The user navigates the homepage 3. The user clicks on the avail now button. 4. The user views the map of the available columbaries.

Table 19 Avail a columbarry

Use Case Name	Avail a Columbarry
Use Case Number	UC-16
Use Case Description	The user can avail a columbarry from the home page
Actors	Customer

Triggers	The user navigates to the landing page and click on the “avail now” button
Pre-Conditions	<ul style="list-style-type: none"> • The user must be on the platform • The user must be on the landing page of the website
Post-Conditions	The user can now input their contact information for the creation of letter of intent
Main Scenario	<ol style="list-style-type: none"> 5. The user visits the website 6. The user navigates the homepage 7. The user clicks on the avail now button. 8. The user chooses his/her desired columbary

5.5 Prototype

The following high-fidelity prototype, developed by the proponents of CBAS, illustrates the fundamental design for authentication, the dashboard, and the user interface for customer records and available columbaries.



Figure 13 Authentication Page

Figure 12 shows the prompt given to the user whether from the Parish Office or a Parish administrator.

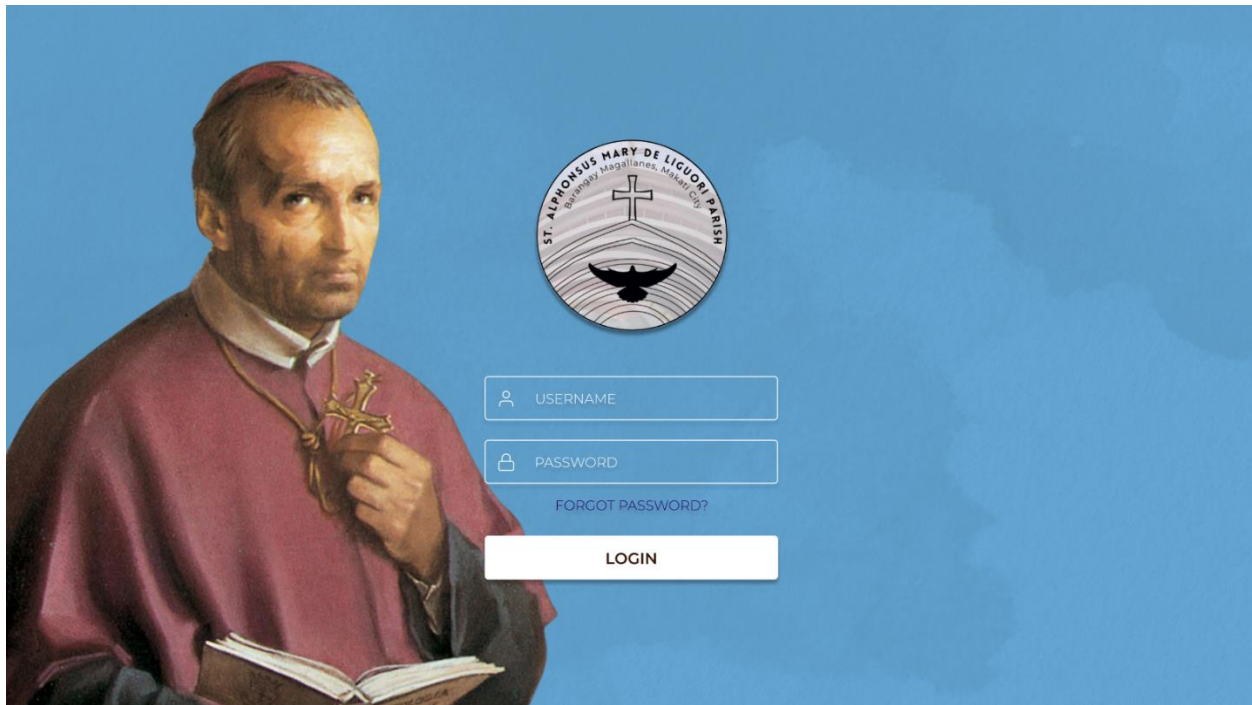


Figure 14 Login Page

Figure 13 shows the login page where the user is required to input their correct username and password.



Figure 15 Home Page

Figure 14 shows the home page where the user can see a short summary of the status of the customer records, it will also give an analytical report of the business.

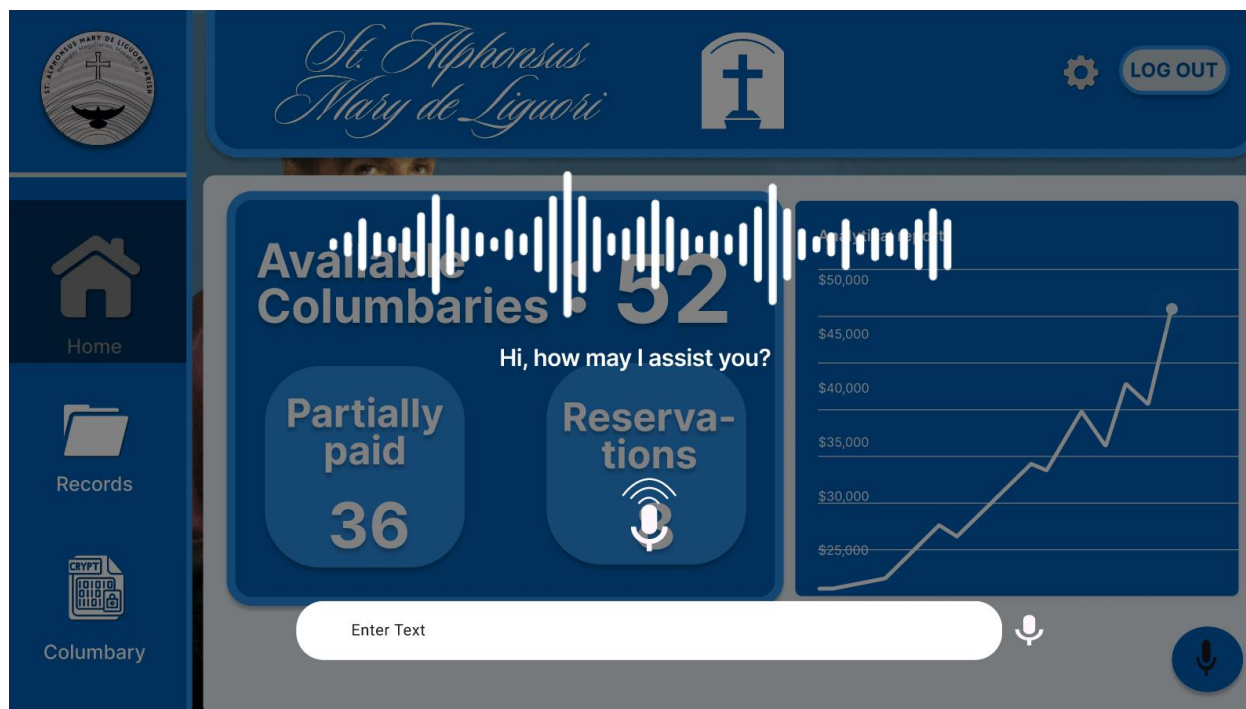


Figure 16 Home Page

Figure 15 shows the functionality of the AI assistant, where the user can request reports, list of names, list of available columbaries etc.

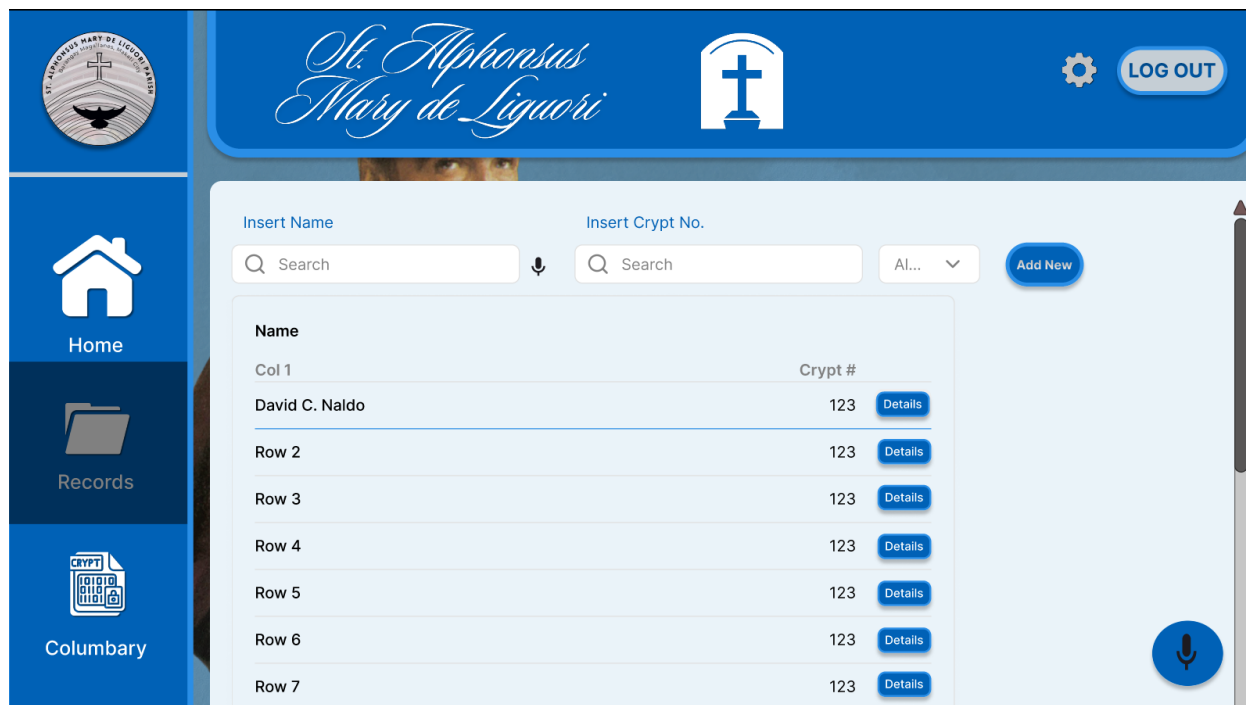


Figure 176 Record Page

Figure 15 shows the record page where the user can search and access the customer records using their columbary number or names.



Figure 187 View Details

Figure 16 presents the view details button from the record page. This is where the user can delete or edit the customer's information.



Figure 19 Columbarium Page List

Figure 17 demonstrates the columbarium page list where the user can view the available columbaries in list form.

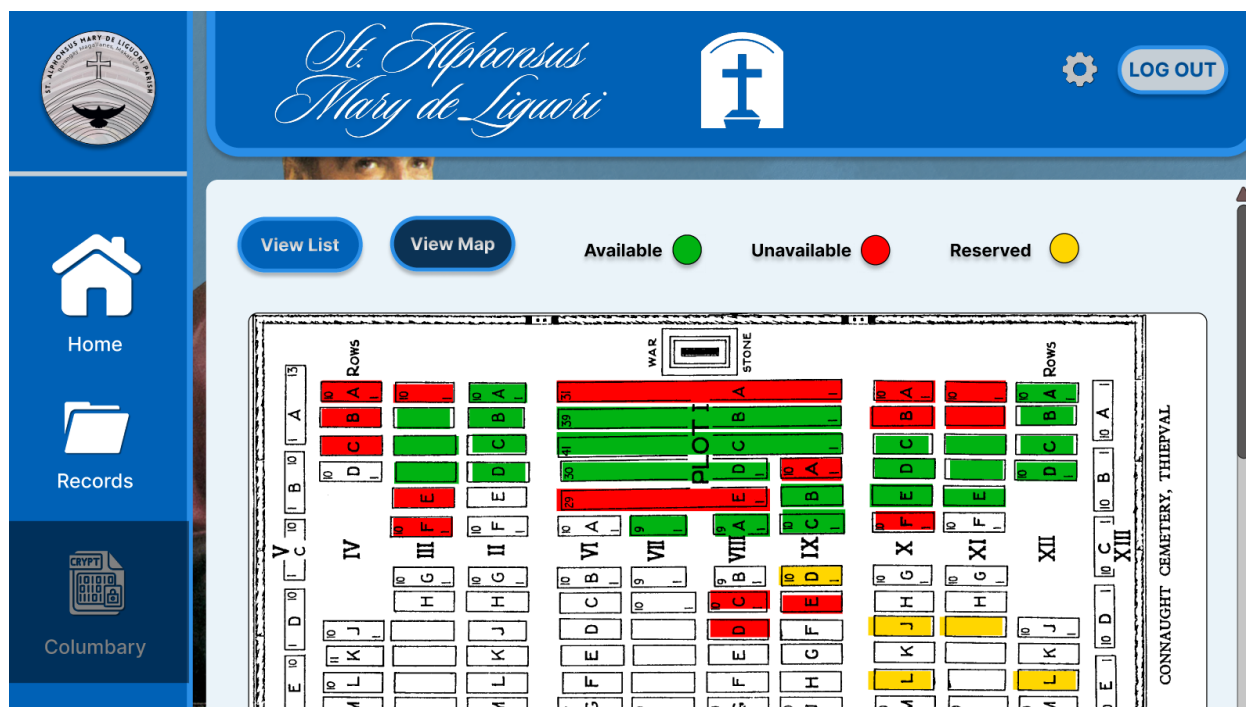


Figure 209 Columbarium Page Map

Figure 18 demonstrates the columbarium page map where the user can view the available columbaries in map form.

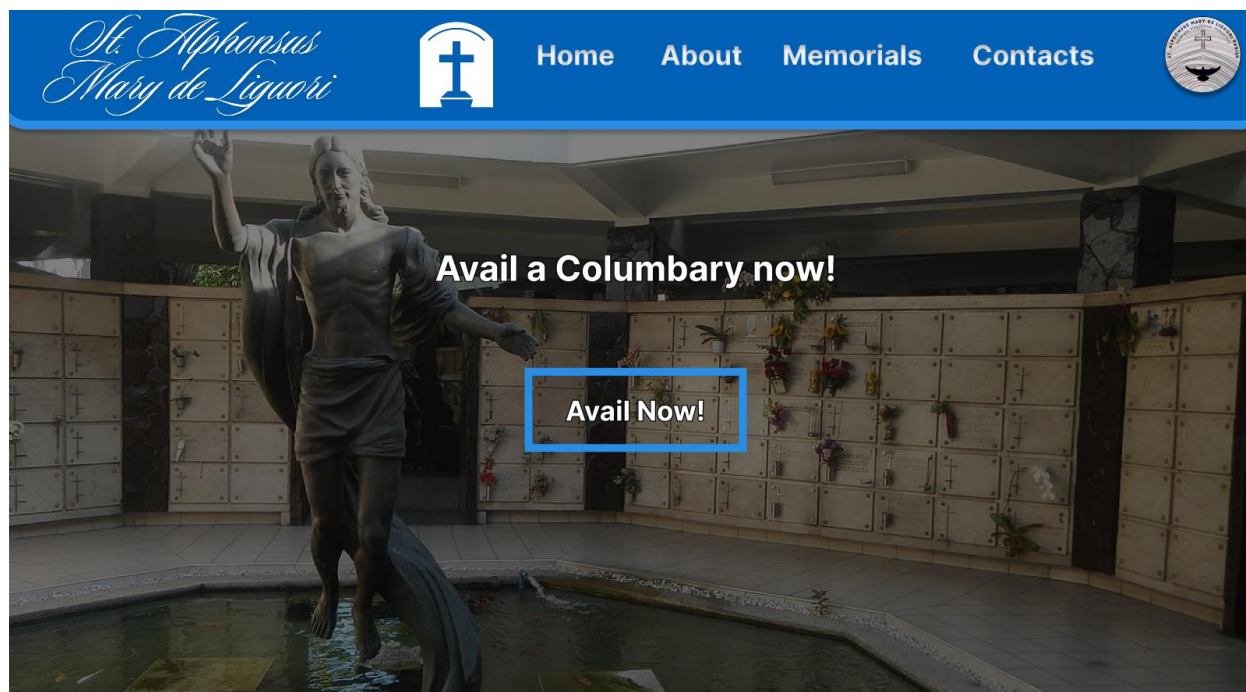


Figure 20 Customer Portal

Figure 20 demonstrates the web platform of the St. Alphonsus Mary de Liguori.

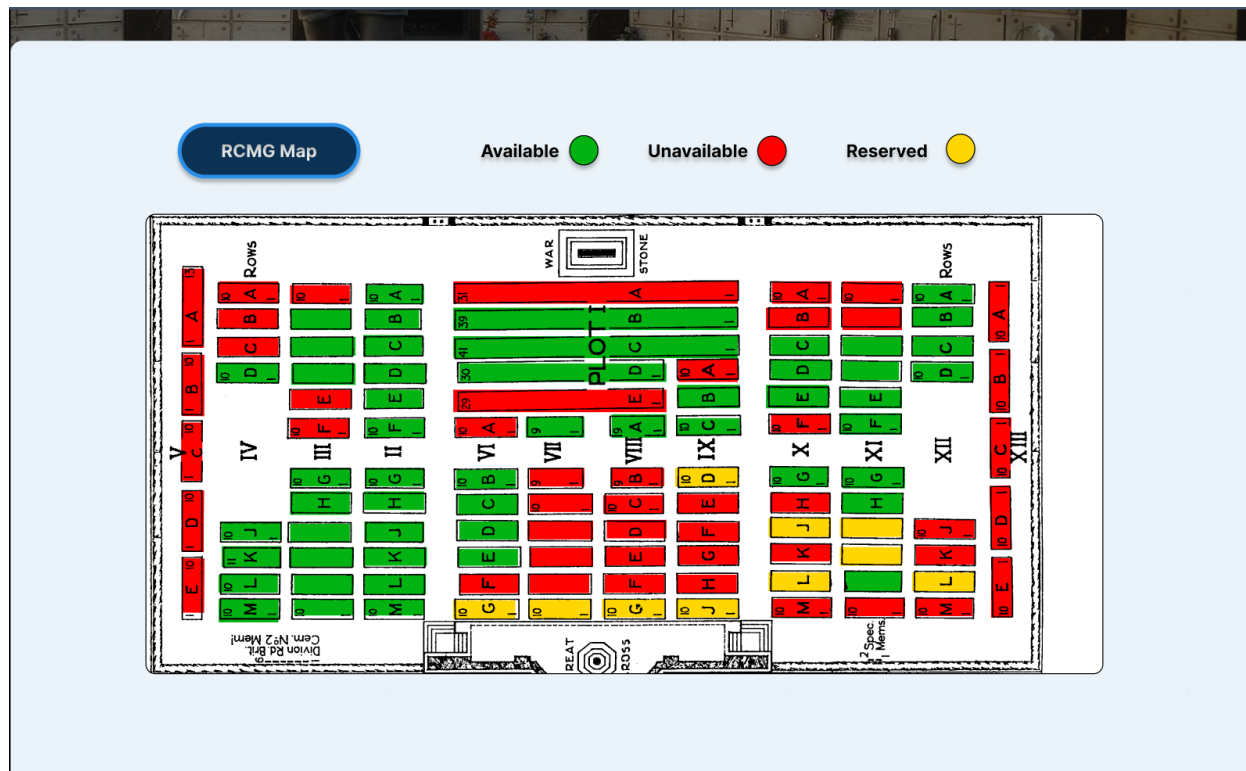


Figure 21 RCMG MAP

Figure 21 shows that after clicking the "avail now" button it will show the available columbaries.

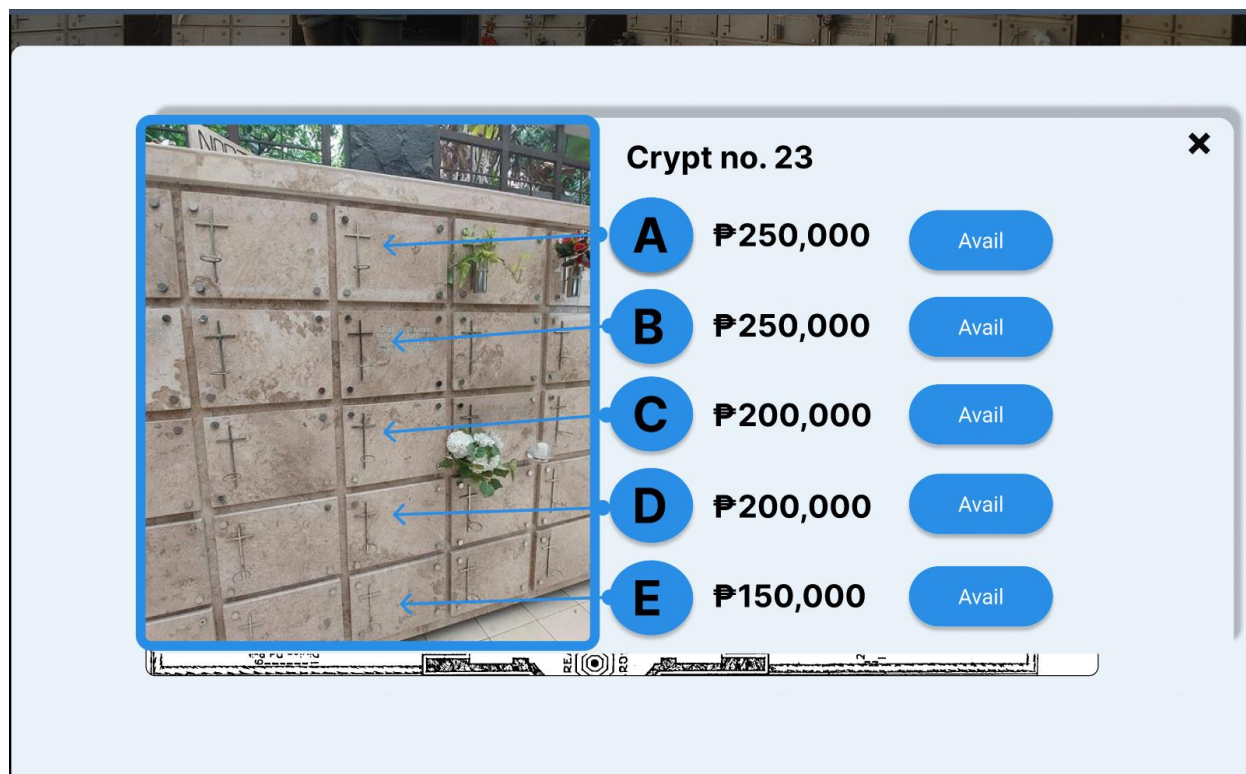
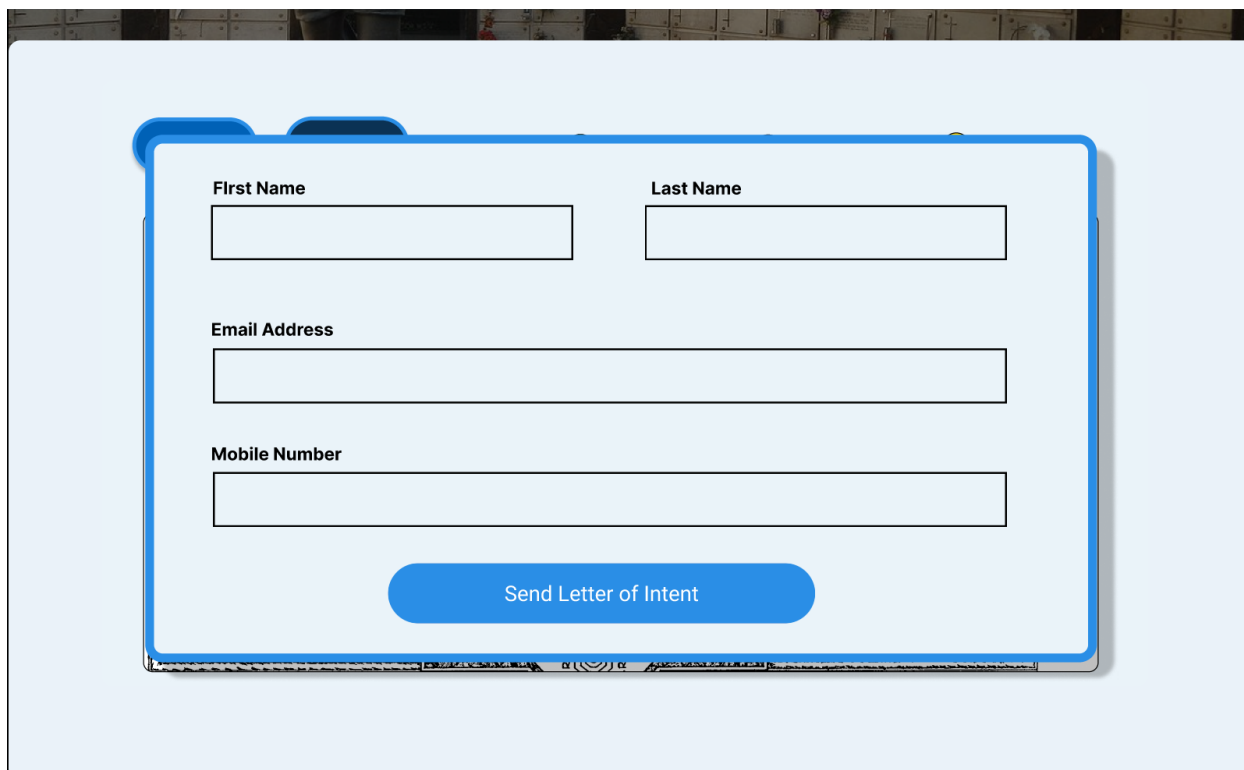


Figure 22 Avail Columbarry

Figure 22 shows the 3d image of the clicked columbarry and will show the prices for each level.



First Name

Last Name

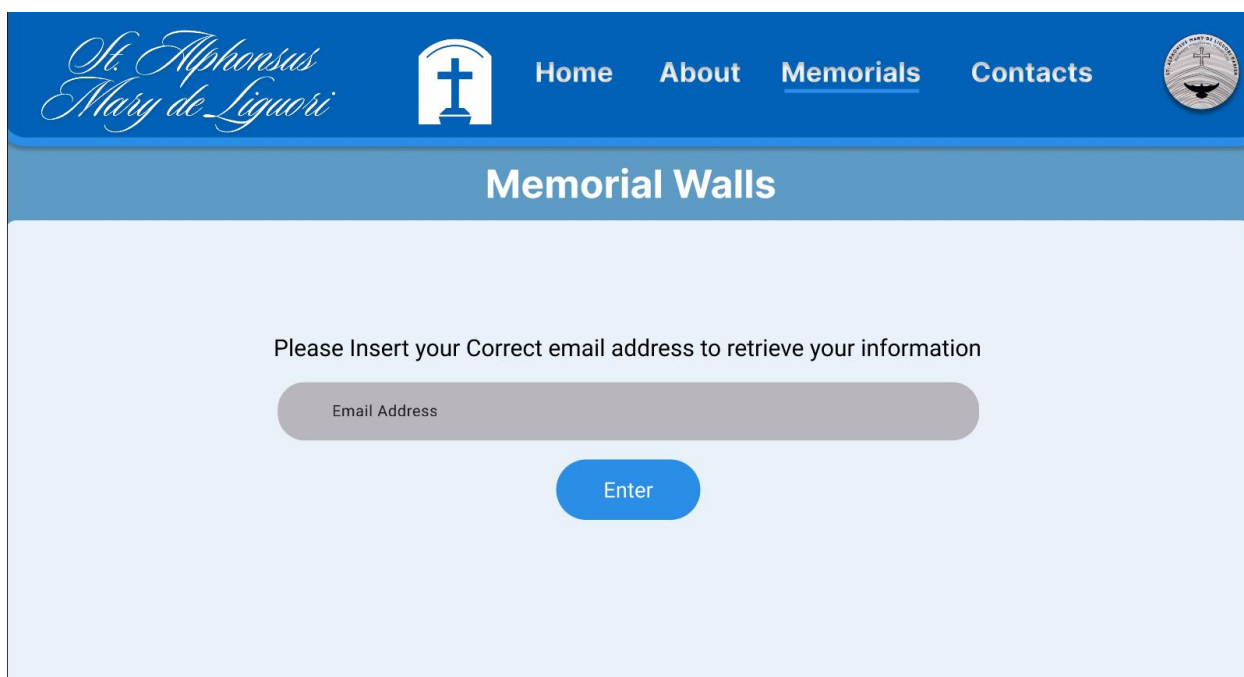
Email Address

Mobile Number

Send Letter of Intent

Figure 23 Send letter of Intent

As shown in figure 23 after clicking the avail button the customer will be prompted to add in his/her contact information.



St. Alphonsus
Mary de Liguori

Home About Memorials Contacts

Memorial Walls

Please Insert your Correct email address to retrieve your information

Email Address

Enter

Figure 24 Retrieve information

Figure 24 shows the customer's retrieval of information; they will input their registered email address to retrieve their columbary details.

5.6 Release Plan

Target Group: St Alfonso's Parish Columbarium

Goal: To digitize and create a document management system with the utilization of OCR and analytics.

Needs: To have a web-based platform.

Value: The new digitalized system will increase the security of the data due to its multiplatform capabilities and help the Parish locate certain data about columbaries without physically searching for it. Additionally, it aims to visualize data and generate reports.

Key features: Documentation Management System, AI Voice Assistant, Analytics, Nextcloud Pi.

Release Plan

Our release plan is divided into three sections according to our course subjects: MNTSDEV, MSYADD1, and MCSPROJ. The project is on schedule with the completion of Release 1, including this paper. The complete product backlog is available in Table 16.

Release 1

- Research paper
- Presentation deck
- Low-fidelity prototype

Release 2

- Model diagrams
- System design
- High-fidelity prototype

Release 3

- Functional prototype
- Deployed systems
- Quality assurance testing

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Appendices

Appendix A: Project Vision

The vision for the Chambers of the Burning Ashes System (CBAS) is to revolutionize the management of columbarium services at St. Alphonsus Mary de Liguori Parish by implementing a modern, secure, and efficient web-based application. This system will streamline and automate the parish's current manual processes, significantly reducing errors and enhancing data security. By providing a document management with robust backup and encryption capabilities,

CBAS will ensure accurate tracking of columbarium vaults, secure storage of customer data, and seamless retrieval of information. Ultimately, this project aims to improve operational efficiency, foster trust and satisfaction among customers, and empower parish staff with a user-friendly tool that simplifies their daily tasks.

Appendix B: Schedule/Release Plan

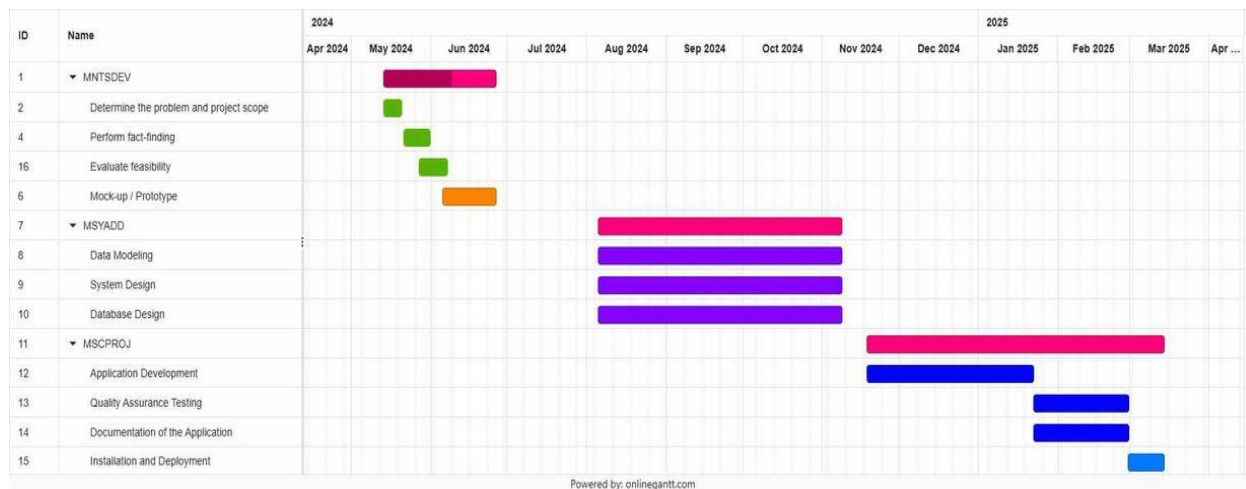


Figure 21 Gantt Chart

Appendix C: Product Roadmap

Table 12 Product Roadmap

MNSTDEV	MSYADD	MCSPROJ
Inception <ul style="list-style-type: none"> Client Search Ideation Planning <ul style="list-style-type: none"> Identify the problem/scope Evaluate Feasibility Meeting <ul style="list-style-type: none"> Meeting with the client Process Immersion Low-Fidelity Prototyping <ul style="list-style-type: none"> Create wireframe Conceptualize use process flow Proposal <ul style="list-style-type: none"> Presentation Deck Documentation Paper 	Modeling <ul style="list-style-type: none"> Data Flow Diagrams Entity-relationship Diagrams Improvement of Use Case Diagram Sequence Diagrams State Machine Diagrams Package Diagrams Design <ul style="list-style-type: none"> System Design Database Design High-fidelity Prototyping <ul style="list-style-type: none"> Figma Model Responsive Design Construction Plan <ul style="list-style-type: none"> Repository Generation Drafting of Documentation Plan Module Assignment Team Training 	Development <ul style="list-style-type: none"> Functional Prototype Documentation Testing <ul style="list-style-type: none"> Quality Assurance Client Assessment Internal Deployment <ul style="list-style-type: none"> Installation Integration External Deployment <ul style="list-style-type: none"> User-facing website Payment Gateway

Appendix E: Teams Meetings

Date: 5/29/2024

Agenda: First Meeting with the Parish.



Figure 22 First Meeting with the Parish

Date: 6/11/2024

Agenda: Signing of the NDA with the Parish office, further information's about the Parish is also discussed.



Figure 23 Signing of the NDA

Date: 6/13/2024

Agenda: Checking of the lean canvas and research paper, systems and technologies that could be applied to the study was discussed with Sir Jose Eugenio.

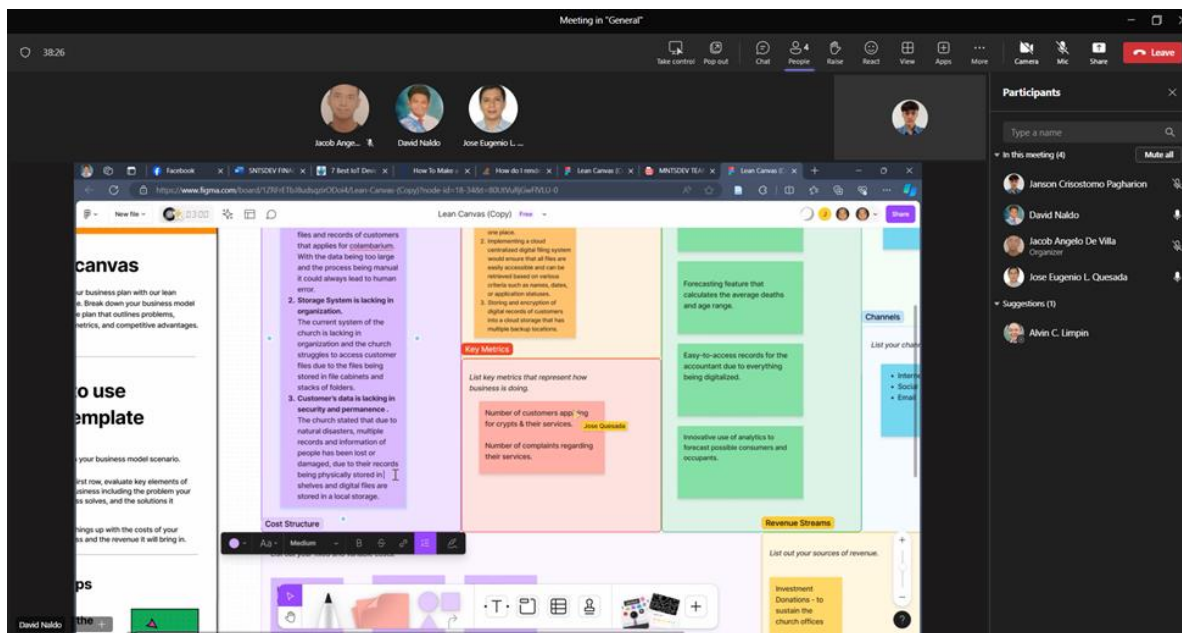


Figure 24 Online Meeting with Consultant

Date: 6/20/2024

Agenda: Paper Checking and consultation of the systems planned to be used in the study.

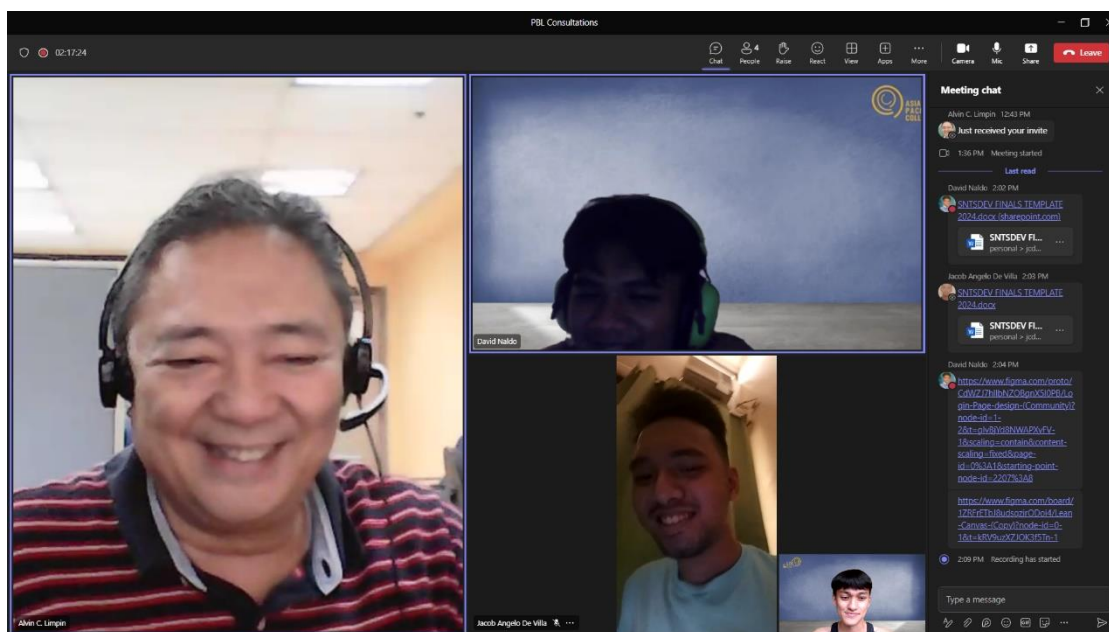


Figure 25 Online meeting with Adviser