

**CYBER YOUTH A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND
INFORMATION DISSEMINATION FOR CATHOLIC
YOUTH ORGANIZATION**

A Capstone Project Presented
to the
Faculty of the Department of Information Technology
College of Engineering
Eastern Visayas State University
Tacloban City

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science in Information Technology

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December 2024

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ACKNOWLEDGEMENTS

As we wrap up this thesis, we want to take a moment to thank everyone who played a part in making this journey possible. First and foremost, we are incredibly grateful to our adviser, Prof. Rustom D. Clemente. Your guidance, advice, and the time you spent discussing our work to ensure it was the best it could be mean so much to us. Your suggestions and feedback were invaluable in improving our thesis.

We also want to thank our instructors for their patience and for sharing their knowledge with us. To our defense panel members, Prof. Jude Allan A. Urmeneta, Prof. Benito V. Badilla Jr., and Prof. Ronnie G. Cabillan, your comments and advice from our pre-oral to the final defense made a huge difference, and we truly appreciate it.

A special thanks goes to the youth head of Santa Cruz Parish Youth Ministry in Jaro, Leyte. Despite your busy schedule, you always found time to support us. Your cooperation, understanding, and encouragement made this process smoother, and we cannot thank you enough for that.

Finally, we want to express our deepest gratitude to our families, friends, and classmates. Your love, support, and belief in us kept us going. You've all been a source of strength, and we are so thankful to have you by our side.

This milestone would not have been possible without all of you. Your kindness and support will always inspire us as we move forward. Thank you from the bottom of our hearts.

JD.V.B

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ABSTRACT

Bocabo, John Doe V.; Caaya, Elder A.; Eslera Yoj Cyril D. “CYBER YOUTH: A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION” (Eastern Visayas State University, December 2024, Tacloban City)

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The Cyber Youth Information Management System was designed to address the communication, security, and event management challenges faced by the Catholic Youth Organization in Jaro, Leyte, Philippines. The existing system relied on traditional and informal methods, such as physical flyers, word-of-mouth announcements, and social media platforms like Facebook and Messenger. This often resulted in disorganization, missed updates, and security concerns during events. The proposed system leverages modern technologies to overcome these limitations to enhance engagement, streamline processes, and foster community involvement.

The system integrates several advanced features, including a chatbot that provides quick responses to member inquiries about events and general information. Sentiment analysis ensures that inappropriate or negative comments on posts are filtered, maintaining a respectful and constructive environment for discussions. An event tracker keeps members informed of upcoming activities, while a QR code-based identification and attendance system replaces traditional methods to enhance security and reduce manipulation or errors. This system logs attendance with a single scan, ensuring only authorized members can participate in events and improving overall efficiency.

The platform's mobile-responsive design ensures accessibility across various devices, enabling members to interact with the system anytime and anywhere. Developed using Next.js and Node.js,

the system is both scalable and efficient. Following the SDLC Iterative Method, the system underwent beta testing with 50 youth members, whose feedback was used to refine its features.

In conclusion, the Cyber Youth Information Management System transforms how the organization operates by centralizing updates, automating processes, and providing tools for secure and efficient event management. By addressing communication gaps and enhancing member engagement, this project supports a more organized, interactive, and secure approach to managing youth activities, setting a benchmark for technology-driven solutions in community organizations.

Keywords — Web-Based Information System, Chatbot, Sentiment Analysis, QR Code Identification, Attendance Tracking, Youth Organization.

Chapter I

INTRODUCTION

In today's rapidly evolving Information and Communication Technology, integrating modern technologies into organizational frameworks is essential. This study proposes implementing a web-based information system with chatbot functionalities and information dissemination mechanisms for the Catholic Youth Organization in Jaro, Leyte, Philippines. The project addresses challenges in member engagement, information fragmentation, and limited technological integration.

The Catholic Youth Organization in Jaro, Leyte, significantly contributes to the spiritual, social, and personal growth of its members. However, reliance on traditional communication methods such as flyers, bulletin boards, and in-person announcements often results in disorganized information, making it challenging for members to stay updated. Additionally, the organization lacks modern communication tools and a centralized system capable of generating IDs and securely managing attendance through scanning technology.

Our solution, "Cyber Youth," is a web-based information system designed to enhance member engagement, and centralize information. It will use email notifications to encourage active participation and serve as a central hub for event schedules, announcements, and resources (Reyes et al., 2022). Chatbot functionality will provide instant assistance and information retrieval, improving member interaction (Kuhail et al., 2022). An event tracking system will simplify event planning and management, ensuring members are well-informed and can participate effectively as well as a QR identification for security and automated attendance.

We aim to create a centralized platform to improve communication and engagement within the Catholic Youth Organization. By addressing information fragmentation and technological gaps, it ensures easy access to information and engaging interactions. Featuring a chatbot, event tracker,

QR identification, sentiment analysis, the platform facilitates swift communication, efficient event management,

and prevents negative postings, enhancing operational efficiency and community involvement (Birjali et al. 2021).

Objectives of the Project

The primary objective is to develop a web-based information system with chatbot and information dissemination functionalities for the Catholic Youth Organization in Jaro, Leyte, Philippines, aiming to enhance member engagement, facilitate efficient communication, and foster community involvement.

1. To be able to incorporate sentiment analysis to prevent negative postings.
2. To be able to integrate features like a chatbot and event tracker.
3. To be able to generate QR identification for security.
4. To be able to create a mobile-responsive interface.
5. To evaluate the system's quality using the ISO 9126 standard.

Scope and Delimitations of the Project

The scope of this study encompasses the design and development of a web-based information system tailored for the Catholic Youth Organization in Jaro, Leyte, Philippines. The system will incorporate features such as a chatbot, event tracker, QR identification, sentiment analysis and information dissemination functionalities to enhance member engagement and facilitate communication within the organization.

However, this study is delimited to the specific context of the Catholic Youth Organization in Jaro, Leyte, Philippines, and does not extend to other youth organizations or geographical locations. Additionally, the study focuses solely on the technical implementation and usability aspects of the

information system and does not address broader organizational or societal issues beyond the scope of technology integration.

Significance of the Project

The significance of this project lies in its ability to transform how the Catholic Youth Organization in Jaro, Leyte, operates and engages its members by leveraging modern technologies. It enhances member engagement through interactive features like chatbots, improves communication with a centralized system that provides accurate and up-to-date information, and fosters community involvement by offering an easy-to-use platform that encourages participation in events. Additionally, the integration of sentiment analysis helps maintain a positive and respectful environment by filtering inappropriate comments. At the same time, the introduction of QR-based identification increases security by ensuring only authorized members can access events. The QR code-based attendance system also provides an efficient, tamper-proof method for tracking attendance, replacing traditional manual sheets, and minimizing errors and manipulation.

Stakeholder

Catholic Youth Organization Members. The primary users of the web-based information system, including youth members, volunteers, and administrators.

Organization Leadership. Key decision-makers such as Youth Directors and Parish members who provide strategic guidance and support to ensure the project aligns with organizational goals.

End Users. Individuals or groups outside of the Catholic Youth Organization who may interact with the system, such as parents, community members, or potential sponsors.

Project Team. The team responsible for designing, developing, and implementing the web-based information system, including developers, designers, testers, and project managers.

Chapter II

THEORETICAL FRAMEWORK

This literature review sought to delve into the related literature on developing and implementing Web-Based Information System in Jaro, Leyte. This literature review aims to determine the features and technologies implemented in the existing systems. The review also intends to investigate the advantages and difficulties of information system development. This study sought insight and recommendations for developing and implementing an effective and efficient information system that may help the community in emergencies by reviewing the available literature.

Review of Related Literature

Information Management System

Information Management Systems are essential for improving organizational performance by enhancing decision-making, operational efficiency, and overall outcomes. For the Cyber Youth web-based information system, these benefits translate into better managing of youth activities, events, and communication within the Catholic Youth Organization. According to a study by Arvidsson and Holmström (2019), effectively adopting information management systems positively impacts key performance indicators such as productivity, cost savings, and user satisfaction. Emerging technologies like artificial intelligence, machine learning, blockchain, and the Internet of Things are transforming information management systems by enhancing capabilities such as predictive analytics, real-time data processing, and secure transactions (Smith & Brown, 2020). However, these advancements also bring challenges, including high implementation costs and the need for specialized skills.

Moreover, user experience and usability are critical in the design and implementation of IMS. Effective UX design can significantly enhance user adoption, satisfaction, productivity, and reduce errors (Campbell, 2024). This highlights the importance of incorporating user-centered design principles and usability testing methods to ensure that the Cyber Youth information system is intuitive and meets the needs of its users. Ensuring that the system is easy to use and responsive to feedback will help maintain high levels of engagement and satisfaction among youth members and leaders.

Information Dissemination

Nwonu (2019) highlights the importance of effective information dissemination for promoting good governance and positive social change by communicating the achievements of political leaders in Nigeria. This concept is relevant to the Cyber Youth system, ensuring effective sharing of events and updates to enhance engagement within the Catholic Youth Organization.

Raweewan and Ferrell (2018) emphasize information sharing's role in supply chain collaboration, highlighting strategic considerations for improving efficiency and cooperation. This perspective underscores the need for strategic information sharing within the Cyber Youth system to foster collaboration among youth leaders and members.

These studies show that information dissemination is crucial in various contexts, from promoting transparency in governance (Nwonu, 2019) to enhancing collaboration in business (Raweewan & Ferrell, 2018). Understanding the context and audience is essential for designing effective information-sharing strategies in the Cyber Youth system.

Sentiment Analysis

Sentiment analysis techniques are crucial for automatically identifying the emotional tone of text data, making them highly applicable to various tasks within the Cyber Youth information system. Sailunaz and Alhajj (2019) explored sentiment analysis of tweets and replies to understand public

opinion and generate recommendations. Although their study focuses on social media data, it does not directly mention Term Frequency-Inverse Document Frequency (TF-IDF) or K-means clustering. Another study, "Real time sentimental analysis on Twitter" (2021), employs TF-IDF to weigh words based on their significance and rarity within the Twitter corpus and hints at the potential of K-means clustering for grouping tweets. This study provides insights into real-time sentiment analysis and the potential applications of these techniques.

Additionally, a study on sentiment analysis of comment texts using BiLSTM (2019) showcases an advanced technique that leverages complex relationships within text data, though it does not discuss TF-IDF or K-means directly. Collectively, these references highlight the potential of TF-IDF and K-means for analyzing large datasets and emphasize the benefits of advanced methods like BiLSTM networks. In the context of the Cyber Youth information system, sentiment analysis helps gather opinions, determine if a post is negative, and prevent explicit content, ensuring that the information provided is beneficial and appropriate for the Catholic Youth Organization.

Chatbot integration

The study by Ong et al. (2021) focus on a chatbot integrated knowledge management system for small-scale farmers, illustrating the broader applicability of chatbots as information-sharing platforms in educational contexts, emphasizing their benefits in disseminating knowledge and building networks among learners and experts. Nagarhalli et al. (2020) provide a broad overview of chatbot development trends across various domains, including education, highlighting the growing popularity of chatbots and the importance of the type of knowledge provided to the system.

Clarizia et al. (2018) present a chatbot prototype designed for educational purposes, using natural language processing techniques to understand student questions and deliver relevant answers. Their experimental campaign further demonstrates the utility of chatbots in educational

settings. Collectively, these references suggest that chatbots hold promise for various educational applications, serving as knowledge-sharing platforms, providing student support, and potentially personalizing the learning experience. However, it is crucial to consider the specific domain and objectives when designing and implementing chatbots to ensure their effectiveness.

Mobile Responsiveness

The increasing reliance on mobile devices for accessing information makes mobile accessibility crucial for the Cyber Youth web-based information system. Mobile responsiveness ensures that the system is fully functional on smartphones and tablets, enhancing accessibility and productivity for the Catholic Youth Organization. As the organization adopts mobile-first strategies, it is essential that the Cyber Youth system can be seamlessly accessed and operated on mobile devices.

This shift not only improves efficiency by allowing youth leaders and members to access information and communicate on the go but also boosts user satisfaction and engagement. Additionally, organizations find that access to the system through mobile web browsers is faster and more convenient, further supporting their operational needs. A study by Ortiz and Aryal (2022) found that companies focusing on mobile accessibility see higher productivity and better user experiences.

Next.js for Mobile Responsiveness

Next.js is an excellent choice for developing the mobile-responsive Cyber Youth web-based information system. Its built-in features and streamlined approach make it ideal for developers. Next.js offers automatic code splitting, optimizing performance for various screen sizes and ensuring fast loading times. The component-based structure promotes reusability and efficient layout adjustments, simplifying the creation of responsive designs. With features like Image Optimization tailored for different devices and compatibility with CSS Grid and Flexbox, Next.js allows developers

to create web experiences that adapt seamlessly to any screen. This ensures an outstanding user experience across all platforms, making it perfect for the Catholic Youth Organization's needs (Riva, 2022).

Comments and Feedback

Comments and feedback mechanisms are vital in the Cyber Youth web-based information system for fostering user engagement and continuous improvement. These features allow youth members and leaders to share opinions, provide suggestions, and report issues, contributing to system enhancement and user satisfaction.

Effective feedback mechanisms create a loop where users feel heard and valued, which can lead to higher adoption rates and better system performance. Research by Dawson et al. (2018) emphasizes that a robust feedback system can significantly improve user experience by addressing pain points and incorporating user suggestions into system updates. This study highlights the importance of user feedback in shaping system functionalities and enhancing overall satisfaction for the Catholic Youth Organization.

Sentiment Analysis and Content Moderation

Sentiment analysis and content moderation algorithms are essential for managing comments and feedback within the Cyber Youth information system. Sentiment analysis categorizes feedback into positive, negative, or neutral sentiments, providing valuable insights for system administrators. Content moderation algorithms filter inappropriate content, ensuring that feedback remains constructive and safe.

These technologies enable administrators to manage large volumes of feedback effectively, derive actionable insights, and maintain a positive user environment. According to a study by Aimal et al. (2023), integrating sentiment analysis and content moderation tools in information systems can

significantly enhance the quality and usability of user feedback, leading to better decision-making and system optimization.

QR Code for Security

Integrating QR code technology into the Cyber Youth information system enhances security and efficiency in managing attendance and participation within Catholic youth organizations activities. Traditional attendance methods are prone to errors and manipulation, but QR codes ensure accurate tracking, reducing these issues significantly (Iskandar et al., 2022). Many institutions still rely on manual recording, which is time-consuming and inefficient, but implementing a QR code-based system can streamline the process.

A study at Sunway University demonstrated that QR codes effectively prevent cheating by verifying details such as class hour, registered device, and geolocation (QR Code-Based Student Attendance System, 2021). Additionally, combining QR codes with facial recognition provides flexibility and transparency, as shown in a university college system that improved usability and user satisfaction (Siew et al., 2023). By adopting these technologies, the Cyber Youth system can ensure secure, accurate attendance and participation tracking, enhancing overall organizational management.

Best Practices for Implementing Feedback Systems

Best practices for implementing effective comments and feedback systems within the Cyber Youth information system include encouraging user participation, ensuring timely responses, and integrating feedback into system development and improvement processes. User-friendly interfaces and incentives can significantly boost user engagement. Timely responses to feedback foster trust and demonstrate that user input is valued.

Integrating feedback into the development process ensures continuous improvement and responsiveness to user needs. A study by Zhang and Venkatesh (2019) outlines these strategies and underscores their importance in maintaining a dynamic and user-centric information system. The study emphasizes that active engagement and responsive feedback mechanisms are key to sustaining user interest and achieving long-term success for the Catholic Youth Organization's information system.

Youth Engagement and Empowerment

The importance of youth engagement and empowerment is emphasized by Swist & Collin (2020) and Kraft & Manning (2023), who advocate for meaningful partnerships to achieve the Sustainable Development Goals and promote democratic inclusion of young people. Similarly, involving youth in positive Youth Development underscores the benefits of meaningful engagement, leading to more effective programs and empowering youth to contribute to their communities. In conclusion, the review highlights the necessity of fostering mutually beneficial relationships between young people and organizations through meaningful partnerships and democratic structures.

Effective Communication and Information Sharing in Youth Organizations

The role of communication technologies and strategies in enhancing youth engagement within organizational contexts is crucial. Sage & Jackson (2021) discuss how internet communication technologies empower foster youth, promoting positive development and safe online engagement. Similarly, the United Nations Department of Social Affairs (2023) emphasizes the role of digital technologies in facilitating inclusive decision-making processes for sustainable development. Additionally, Bunquin (2020) explores the impact of social media on political participation among Filipino youth, revealing disparities beyond technology access. In conclusion, effective

communication in youth organizations necessitates understanding youth perspectives, strategic use of digital tools, and fostering inclusive communication networks.

Building Inclusive Online Communities for Catholic Youth

Creating inclusive online communities for Catholic youth involves leveraging digital spaces for positive youth development and implementing strategies to cultivate welcoming environments. Ross & Tolan (2021b) advocate for integrating digital settings into Positive Youth Development frameworks, highlighting their potential for identity exploration, skill development, and fostering positive relationships.

Earnshaw & Al-Sharif (2023) explore strategies for inclusivity in online learning communities, emphasizing intentional design and ongoing assessment of student needs. Similarly, Bonfiglio & Kroh (2020) discuss the importance of inclusivity in Catholic schools and suggest adapting inclusive practices to establish inviting online communities for Catholic youth. In conclusion, nurturing inclusive online communities for Catholic youth requires leveraging digital spaces effectively, creating intentionally designed environments, and adapting successful inclusion practices.

Web-Based Strategies for Effective Youth Organizations

Web-based strategies are being explored to enhance positive youth development and address youth-related issues. Esposito et al. (2023) suggest technology-based interventions like interactive games and online training to prevent youth violence and develop crucial skills such as conflict resolution and emotional regulation. However, further research is needed to ensure their long-term effectiveness and accessibility.

Nazari et al. (2023) focus on web-based educational interventions to boost mental health literacy among youth, but stress the need for refinement to reduce stigma and encourage help-seeking behaviors. Meanwhile, Nuncio (2019) discusses youth internet use in the Philippines,

acknowledging its benefits for education and development but also highlighting concerns like internet addiction and online safety. Overall, successful implementation of web-based strategies requires tailored approaches, evidence-based methods, and ongoing evaluation to maximize impact.

Youth Development and Skill Enhancement in the Digital Age

The evolving landscape of youth development in the digital era underscores the importance of digital literacy skills and the potential of online environments for growth. Ross & Tolan (2021) advocate for integrating digital settings into Positive Youth Development frameworks, highlighting their role in identity exploration, skill development, and relationship building. Buchan et al. (2024) stress the need for tailored digital literacy programs for youth, focusing on data safety, cyberbullying awareness, and responsible online behavior.

DeSouza et al. (2022) explore the connection between online and offline social networks, suggesting that positive youth development can be fostered through peer connections from extracurricular activities. In conclusion, navigating the digital world effectively requires digital literacy, as online spaces offer both risks and opportunities for growth, especially when young people establish positive social networks, both online and offline.

Conceptual Framework

The conceptual framework is crucial in the research process. Research begins with an idea or concept that needs to be defined and refined to target specific objectives. This framework shapes the study's topic and dictates the flow and outcome of the research.

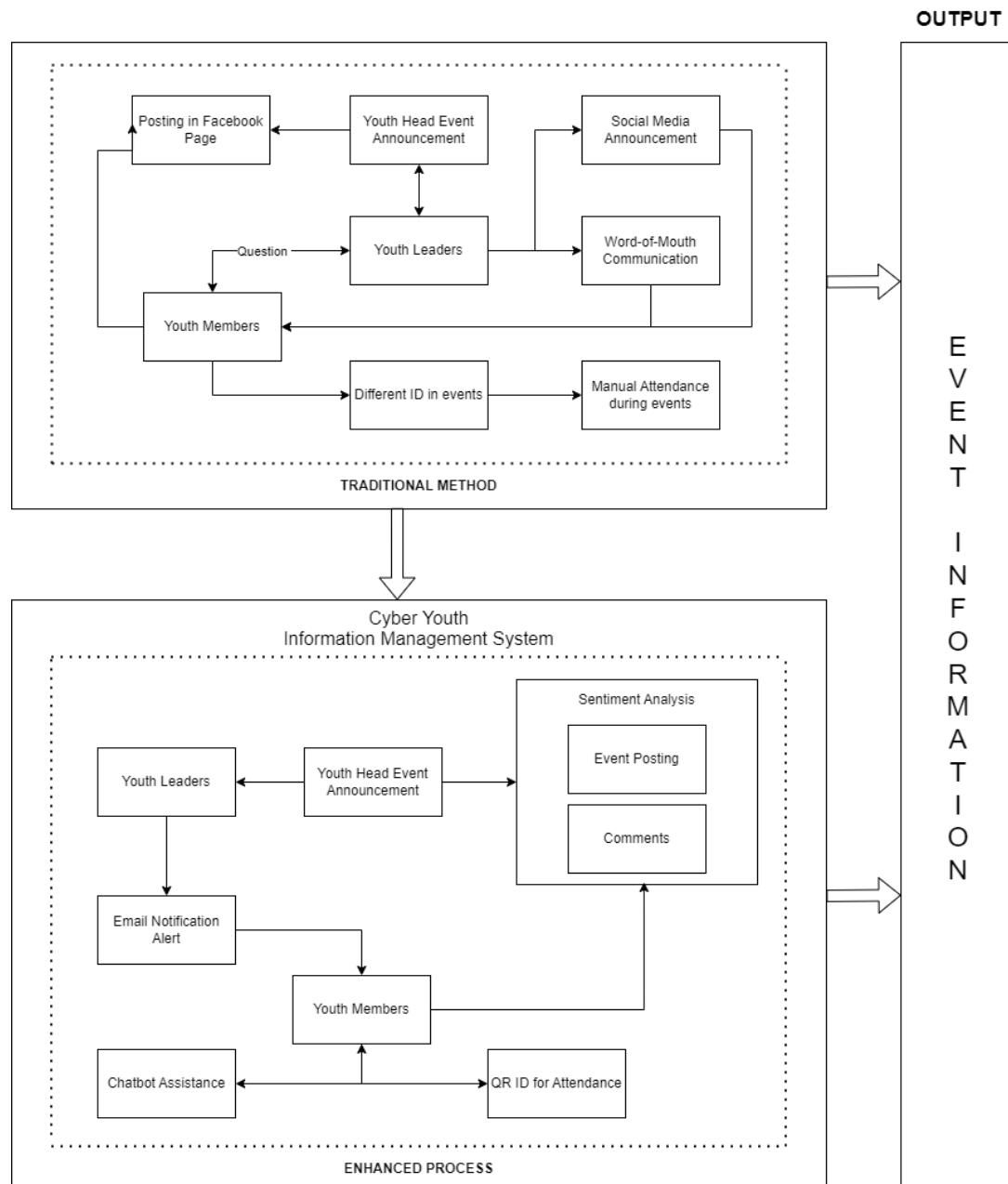


Figure 2-0. Conceptual Framework

Figure 2-0 shows the Conceptual Framework of the study. The framework contrasts the traditional and enhanced methods for disseminating event information and managing security and attendance among the youth in Jaro, Leyte.

In the traditional method, the youth head shares event announcements primarily by posting on the Facebook page and through word-of-mouth communication. Youth leaders receive these announcements and then pass the information to youth members through social media or in-person conversations. If youth members have questions, they must ask their youth leaders, who may, in turn, need to consult the youth head for more detailed information. Additionally, event security and attendance tracking rely on a manual system involving different identification IDs and a handwritten attendance sheet. This method is prone to tampering and errors, as attendance records can be easily manipulated, and outsiders can enter events without proper checks due to the lack of a standardized ID system.

In the enhanced method, the Cyber Youth Information Management System is introduced, streamlining communication, security, and attendance processes. The system allows the youth head to make event announcements automatically sent to youth leaders through email notifications. Youth members receive these notifications directly and can interact with the system's chatbot for additional event details and assistance. Sentiment analysis is also integrated into the system to filter inappropriate or negative comments, ensuring that discussions remain constructive and respectful. The enhanced method introduces a QR-based ID system for event security and attendance. This system generates a unique QR code for each member, which serves as their identification and is used to check in to events. With just one scan, a member's attendance is logged into the system, significantly reducing the possibility of tampering or errors, and ensuring that only authorized individuals can participate in the event.

Definition of Terms

Mobile Responsive. Mobile responsive design ensures that a website or application works well and displays properly on various devices, adjusting to different screen sizes (W3Schools). The project's web system is mobile responsive, ensuring accessibility and usability on smartphones and tablets.

Youth Organization. Youth of Color are young individuals often involved as leaders in social justice movements. Their participation in organizing efforts has both positive effects on their mental health and potential challenges, such as experiencing strain from the systems they seek to change (DeBower et al., 2021). In this context, the term refers to community groups involved in the study, focusing on youth engagement and participation.

Sentiment Analysis. Sentiment analysis uses technology to analyze and understand emotions and opinions expressed in text (Sánchez-Rada & Iglesias, 2019). This project employs sentiment analysis to gauge public opinion and emotional response to disseminated information. This also help prevent unwanted words.

Push Notification. Push notification is a communication feature within the Cyber Youth Information Management System. It is envisioned as timely alerts or messages sent to users, providing event information or updates, ensuring swift and effective communication (Oxford Learner's Dictionaries). In this project, push notification is an automated message from the Cyber Youth Information Management System. These messages are sent to the youth members to inform them about an upcoming event or activities in the organization.

User. A user is an individual who interacts with a computer system or application, typically through a user interface (Oxford Learner's Dictionaries). In this study, the term user refers to anyone utilizing the web system to access information.

Web System. An automated monitoring system is a tool designed to detect changes in web resources and notify users of unwanted modifications. This system reduces the need for constant content monitoring by developers and allows users to quickly correct unauthorized changes, improving the security and maintenance of websites. It also facilitates competitive analysis by tracking changes on competitors' web pages (Vysotska et al., 2019). The web system in this study is designed to integrate various functionalities to support user needs and improve information access.

QR Code. A QR code is a widely used two-dimensional barcode for applications like marketing and ticketing, known for its high data capacity and ease of use. However, QR codes pose security risks, including the potential for malicious redirection and lack of content authenticity (Focardi et al., 2019). In our study, QR codes are utilized for identification and attendance tracking, emphasizing the importance of secure data management.

Chapter III

OPERATIONAL FRAMEWORK

The materials used to develop the system include software, hardware, data, and system environments. This chapter covers the materials needed for designing the proposed system, describes the client's environment, and discusses the study's location and population. The project's goal is to create a centralized information management system for better information sharing.

Materials

The materials used to develop the system are software, hardware, data, and systems environment, as discussed below.

Software

Software refers to developing the Cyber Youth Information Management System. It sets out features, speeds up development, and aids in creating high-quality web-based applications for all devices.

Table 3-0. Software

Name of Software	Specification
Operating System	Windows 11 Home
Visual Studio Code	1.91.0
Next.js	14.2
Node.js	21.4
MySQL Community Server	8.2.0

Hardware

The hardware refers to the system requirements that specify which electronic components are used to develop the Cyber Youth Information Management System.

Table 3-1. Hardware

Name of Hardware	Specification
Laptop	Lenovo Legion 5 AMD Ryzen 5 4600H 3.00Ghz
Processor	2 Cores 2.00Ghz or Higher
Random Access Memory (RAM)	4GB or Higher
Storage	SSD/HDD 120GB or Higher
Graphics Processor (GPU)	Integrated or Discrete will do.
Smartphone	Android 8 or Higher

Data

Literature Sources

The data used comes from the youth organization. Registration data is based on the leader's list and manual records. This data helps us understand the challenges our proposed study needs to address.

Interview

We collected information by interviewing target users and asking them various questions. This allowed us to get direct feedback and better understand their perspectives.

Through these interviews, we gained valuable insights that highlighted the importance of our proposed study.

Systems Environment

Locale of the Study. The research was conducted and developed for Jaro, Leyte only.

Figure 3-0 shows the map of Jaro, Leyte, which visually explains the locale.

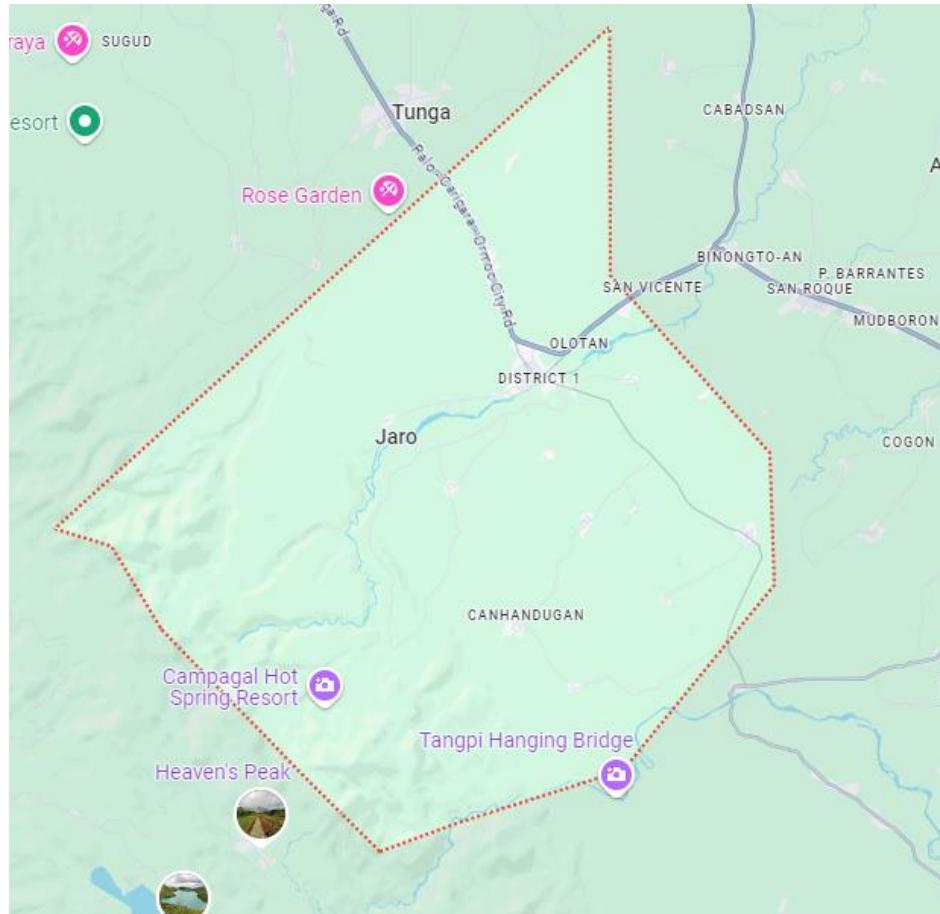


Figure 3-0. Map of Jaro, Leyte

Organizational Chart/Profile

An organizational chart visually represents the internal structure of an organization, clearly outlining the roles, responsibilities, and relationships among its members. Figure 3-1 shows the visual diagram of the organizational chart.

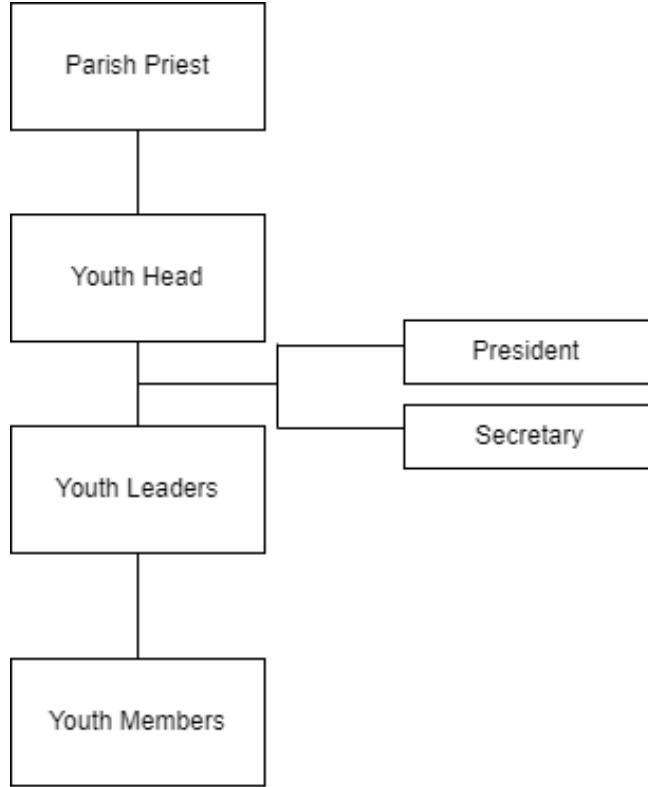


Figure 3-1. Organizational Chart

Figure 3-1, shown above, introduces the organizational structure of the proponents' client. System administration and user management are part of managing the new system. By acknowledging this structure, the proponents can identify who manages and sends alert messages to its members or users to keep them updated.

Population of the Study. The study includes a parish priest, the youth head, the president, the secretary, 13 youth leaders, and 400 members. They participated in this research and will use the Cyber Youth Information Management System. The Catholic Youth Organization is in Jaro, Leyte.

Description of the Present System. The Catholic youth organization in Jaro, Leyte, Philippines, uses a mix of traditional and digital methods to communicate with its members and manage activities. They use physical flyers and posters to announce events and important information, which are distributed by hand or posted on community boards. The organization also has a presence on social media platforms like Facebook and Messenger, where they share updates, event invitations, and announcements. Additionally, information is often passed informally through conversations among members during gatherings and meetings. Regular in-person meetings are held to discuss upcoming events and organizational matters, providing direct communication to members. Lastly, during events, outsiders can sometimes enter without permission, and attendance records can be easily manipulated due to manual input methods.

Limitations/Drawbacks of the Present System. The current system has several key limitations. Communication methods are mostly one-way, lacking interactivity and making it hard to engage members and understand their needs. Information is scattered across different channels like flyers, social media, and word of mouth, causing confusion and missed updates. The organization has not fully adopted modern tools like QR Identification, chatbots, web apps, or event tracking systems, missing out on the benefits these technologies offer. There is no unified platform to manage all communications, leading to inefficiencies and extra work. Additionally, there's resistance to adopting new technologies due to a lack of awareness or materials. Manual attendance further complicates tracking participation, making it prone to errors and manipulation. Moreover, the absence of a mandatory ID system for the youth members allows outsiders to enter without restrictions during an event, compromising security. Lastly, without a consistent approach to managing information, things often become disorganized, leading to confusion and duplication of effort.

Methods

SDLC Model

The proponents utilized the Software Development Life Cycle (SDLC), a crucial process for designing, developing, and evaluating high-quality software applications using an iterative method. The SDLC consists of various phases that must be followed to ensure the project's smooth development.

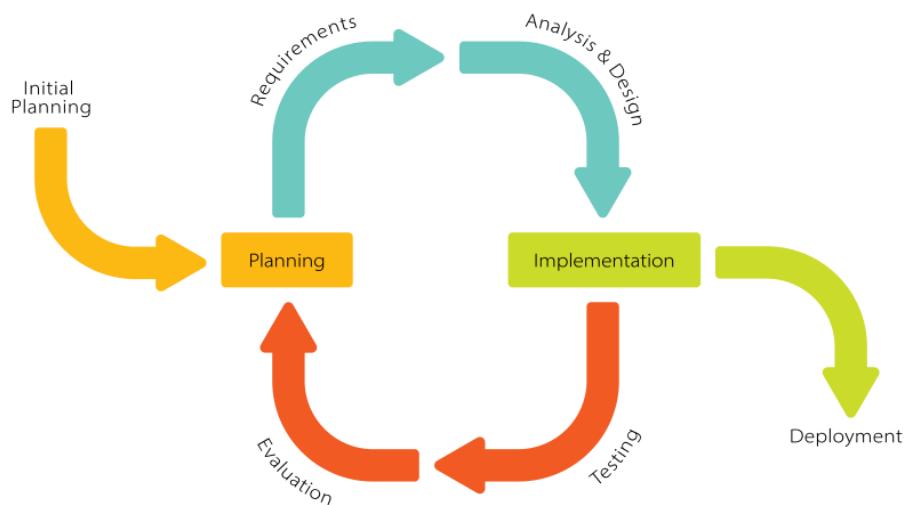


Figure 3-2. SDLC Iterative Model

The Iterative Method is designed to help developers create projects that can quickly adapt to evolving requirements. This approach transitions from planning to handling change requests, encompassing all stages from planning to requirements analysis, design, implementation, and testing (Martins, 2024). If a test fails, the system remains in testing mode until fully functional. Once the system is built, it is ready for the client and a select group of users to test and review, completing the evaluation stage. During the review, suggestions are implemented. Each piece of feedback helps identify blind spots for the

developer, addressing any flaws users find. After the system is finalized, the deployment phase begins.

Qualitative

This study used a qualitative method to understand issues with the Information Management System for the Catholic youth organization in Jaro, Leyte, Philippines. This approach was chosen to explore the participants' experiences and interactions with the system in detail. We gathered data through semi-structured interviews, focus group discussions, and direct observations. Key stakeholders, including parish priest, youth head, youth leaders, and youth members, participated to provide insights into the system's challenges and potential improvements. Observations helped us see how the system was used in real time and identify usability issues. We analyzed the data by identifying patterns and themes related to the system's usability, effectiveness, and areas for enhancement. This comprehensive approach ensured that the proposed solution aligned well with the actual needs of the organization. It also allowed us to uncover important factors that might be missed with quantitative methods, making it a crucial part of the research (Peterson, 2019).

Procedures for the different phases

Planning and Requirements

In this phase, the proponents decided to develop the system using a Gantt Chart to facilitate smoother development. The researchers thoroughly examined their proposed project to ensure that all specified objectives were met. They divided the paperwork into three parts and consulted with their project adviser and class instructor to ensure each chapter was completed correctly. Additionally, they reviewed numerous related studies to highlight the novelty of their proposed project.

Gantt Chart

The Gantt chart displays the project's development timeline and essential tasks. It visually represents the different stages, such as requirements, design, development, testing, and deployment, ensuring an organized method to reach the project's objectives.

Table 3-2. Gantt Chart

ACTIVITIES	2024											
	July	August	September	October	November	December						
Iteration 1												
Planning	■	■	■									
Requirements			■	■	■	■						
• Securing Letters to Youth Org & EVSU												
Analysis & Design				■	■	■	■	■				
• Create Mockups												
• Login & Registration												
• Design Interface												
• Landing Page												
Implementation				■	■	■	■	■				
Testing					■	■	■	■	■			
Evaluation						■	■	■	■	■		
Iteration 2												
Planning			■	■	■	■						
Requirements				■	■	■	■	■				
Analysis & Design					■	■	■	■	■	■		
• Chatbot Development												
• QR ID												
• Sentiment Analysis												
• Implementing Comments Filter												
Implementation					■	■	■	■	■	■		
Testing						■	■	■	■	■	■	
Evaluation							■	■	■	■	■	

Iteration 3																	
Planning																	
Requirements																	
• Survey Questionnaires																	
Data Gathering																	
Analysis & Design																	
• Adding Contents																	
• Event Calendar																	
• Mobile Responsiveness																	
• Email Notification																	
Implementation																	
Testing																	
Evaluation																	
Deployment																	

Requirement Analysis

The analysis of the system, focusing on data and process modeling. The model includes diagrams and flowcharts to provide a clearer understanding of the system's flow and concept.

Data and Process Modeling

Context Flow Diagram

Figure 3-3 depicts the context flow diagram, which describes all the flow data activity inside the system of a single process symbol.

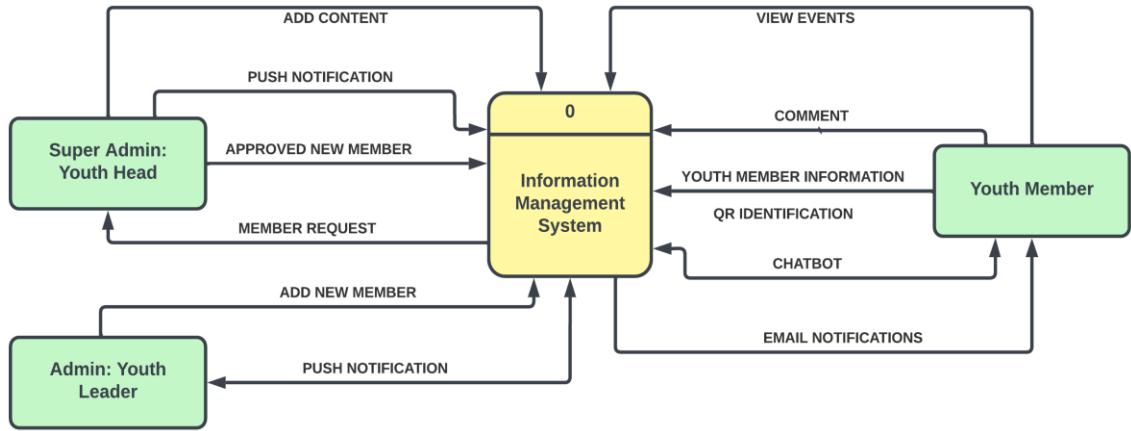


Figure 3-3. Context Flow Diagram

Figure 3-3, shown above, shows the context flow diagram of the Information Management System for a youth organization. In this system, the Super Admin (Youth Head) has the authority to approve new member requests, add content, and send out push notifications. The admin (Youth Leader) can also add new members, send push notifications, and contribute content. Youth Members can view events, comment on posts, interact with content, and receive notifications via email. All users can access a chatbot for help and support. The system helps with spreading information, ensuring that members stay informed about the youth organization's activities and updates. Each member is assigned a unique QR code for secure identification and precise attendance tracking.

Data Flow Diagram

A data flow diagram is a visual representation of a system that shows how data moves through it, highlighting the main requirements and processes. Figure 3-4 gives a clear picture of this data flow diagram.

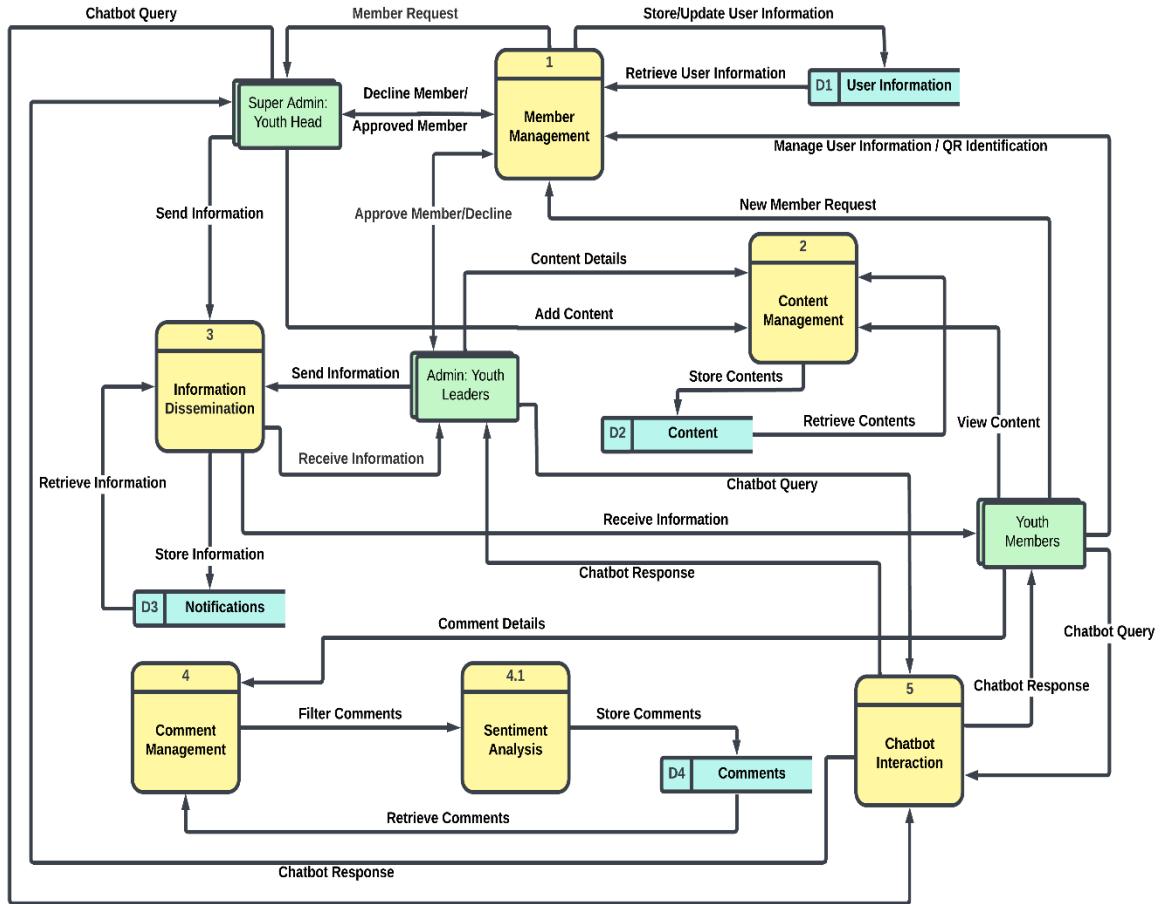


Figure 3-4. Data Flow Diagram

Figure 3-5, shown above, presents the Data Flow Diagram (DFD) for the Information Management System of a youth organization. It illustrates how different user roles, such as the Super Admin, Admin, and Youth Members, interact with system components. The Super Admin handles member requests, approves new members, add contents, and sends notifications, while the admin add new members and interacts with content and member management. Youth Members can view events, comment, and use the chatbot for queries. The diagram also details various system components like Member Management, Content Management, Information Dissemination, Comment Management, and Chatbot Interaction, showing how data flows through the system to ensure efficient management and communication.

System Flow Chart

The system flowchart explains how the flow of the system works. Figure 3-5 visually explains the flow through a flowchart.

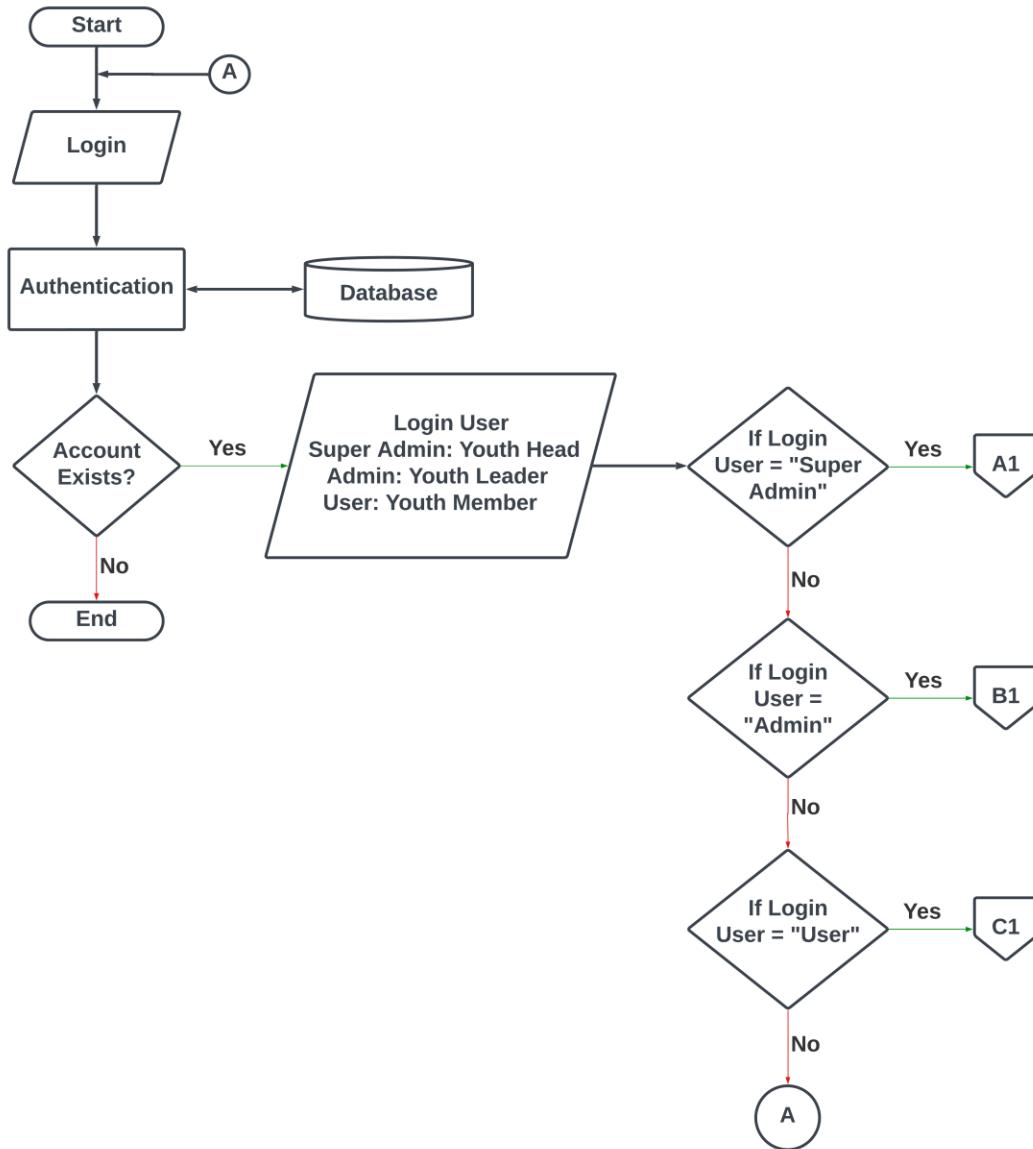


Figure 3-5. System Flowchart

Figure 3-6, shown above, illustrates the login process for the Information Management System. The steps include user login, system authentication against the database, and role-based redirection. If the account exists, the system identifies the user's role and redirects them to the

appropriate dashboard. If the account does not exist or authentication fails, the process ends. This flowchart shows how users are authenticated and directed within the system.

Program Flow Chart

A program flowchart is a picture that shows an algorithm, workflow, or process. It uses different types of boxes to represent steps and connects them with arrows to show the order. This visual helps to solve a specific problem.

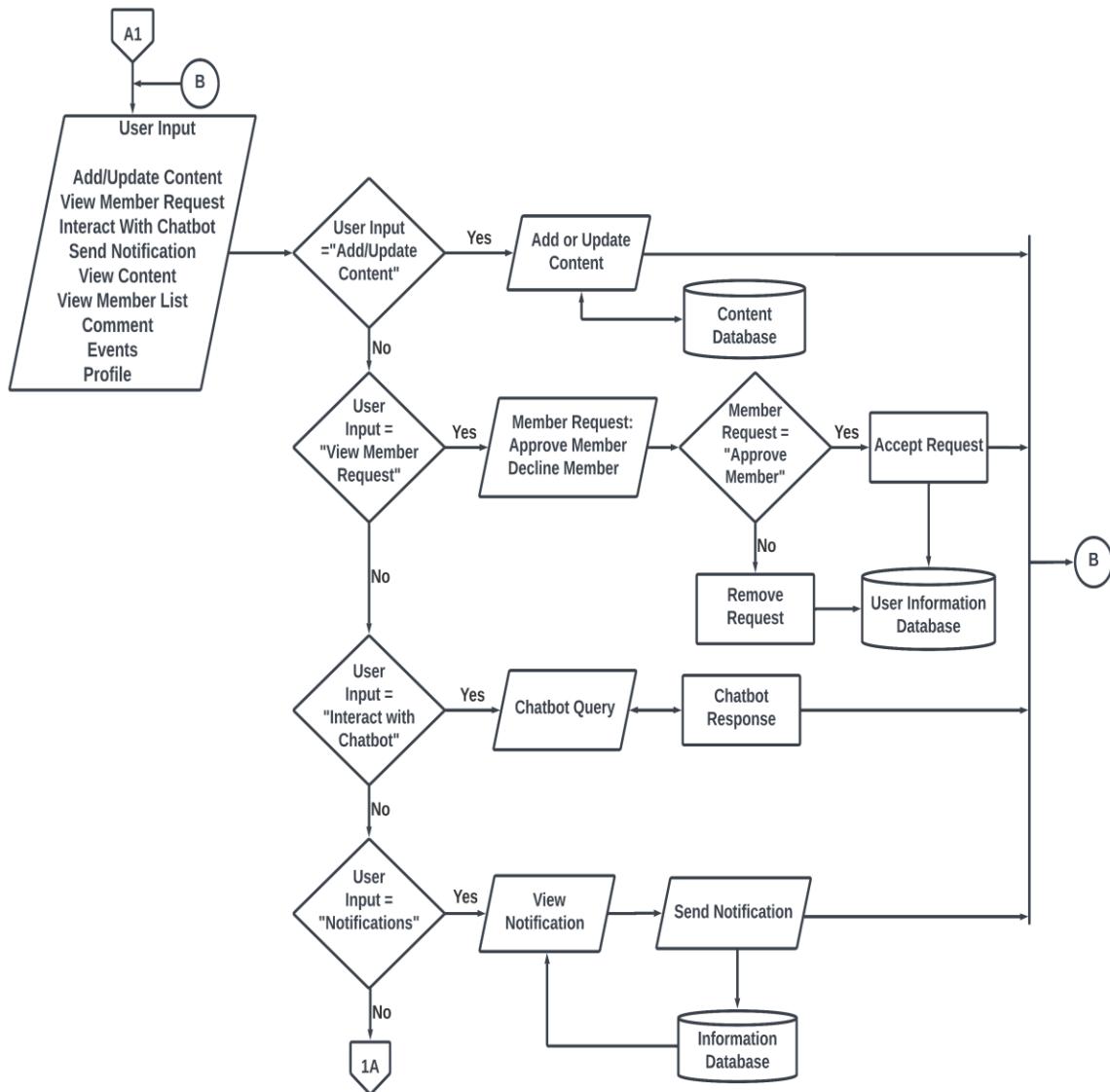


Figure 3-6. Youth Head Flowchart

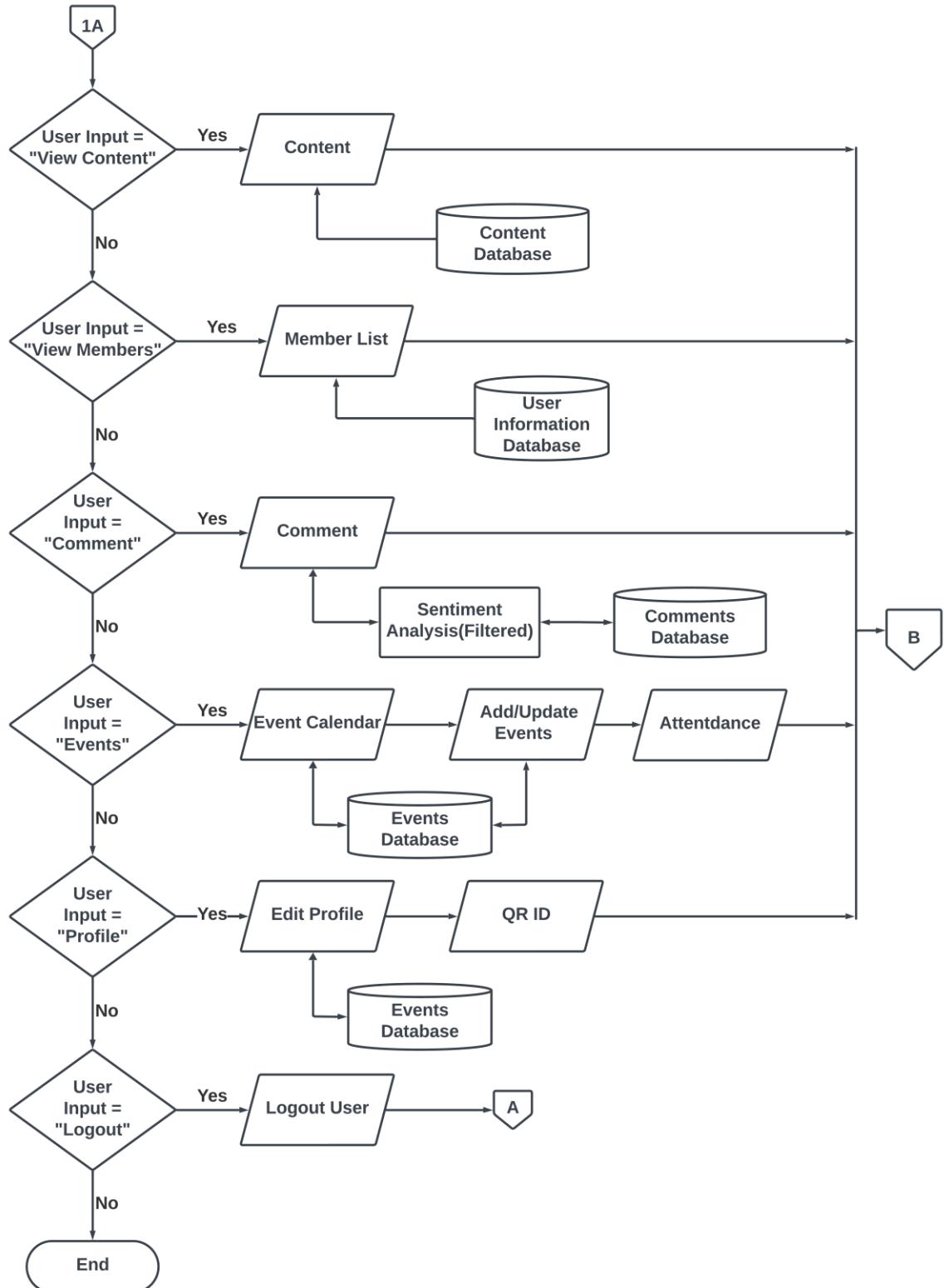


Figure 3-6-1. Youth Head Flowchart Continuation

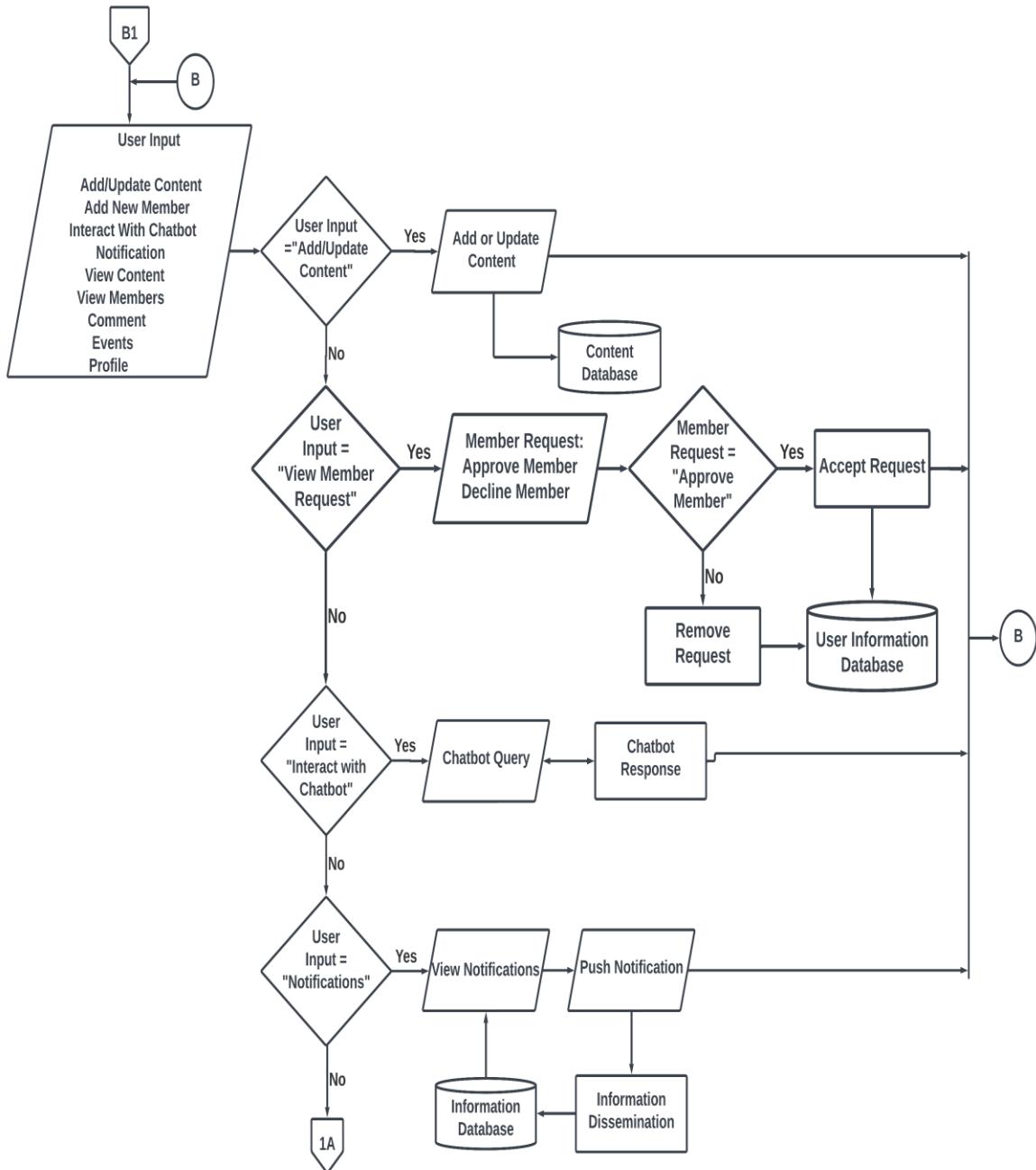


Figure 3-6-2. Youth Leader Flowchart

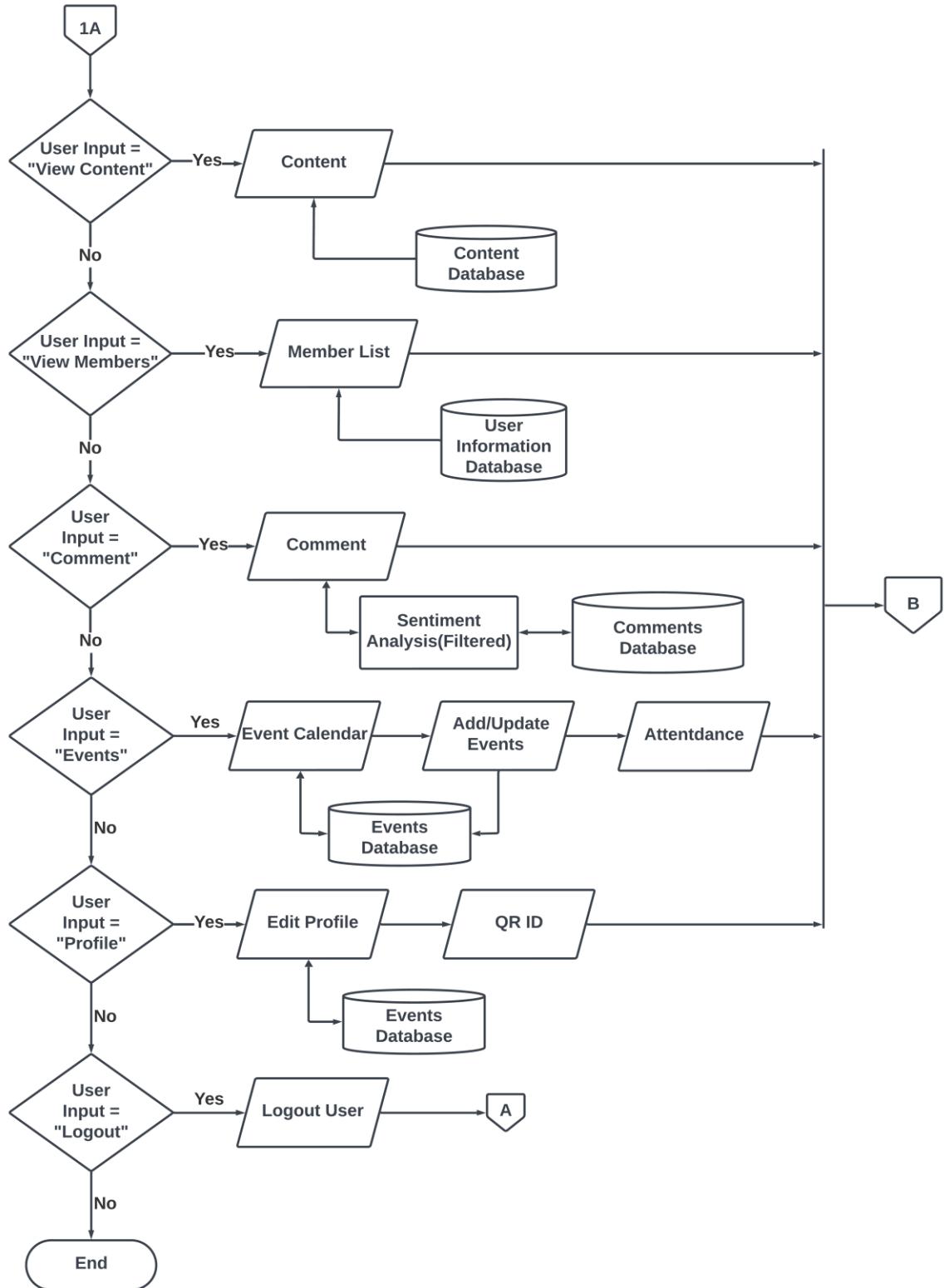


Figure 3-6-3. Youth Leader Flowchart Continuation

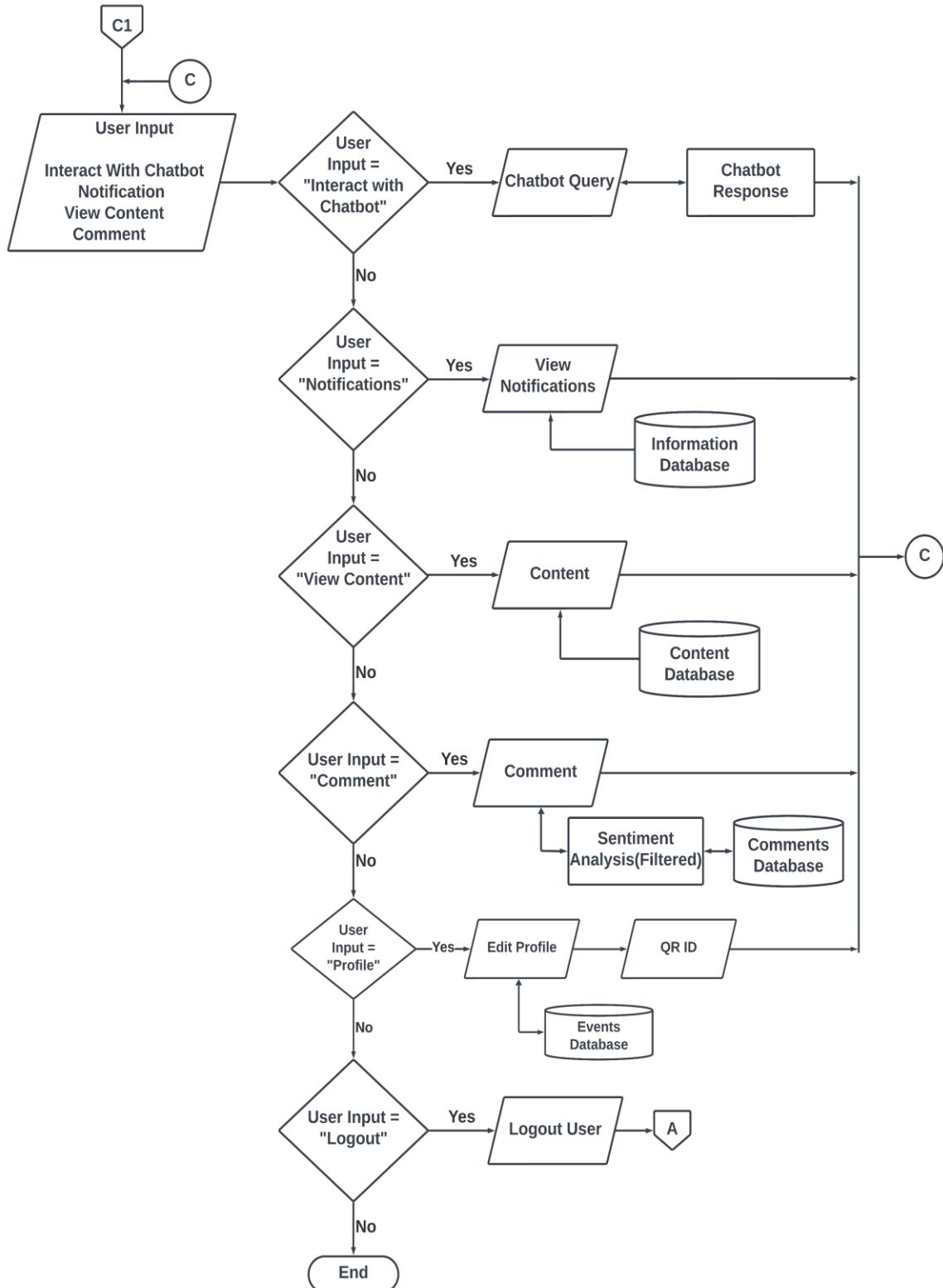


Figure 3-6-4. Youth Member Flowchart

Design

The design of this system discusses the architecture and techniques to solve the problem.

This design shows the involved stakeholders in the system and their specific roles.

System Architecture

A system flowchart shown in Figure 3-5 explains how the system's flow works.

Figure 3-7 emphasizes the process and how the system is being processed.

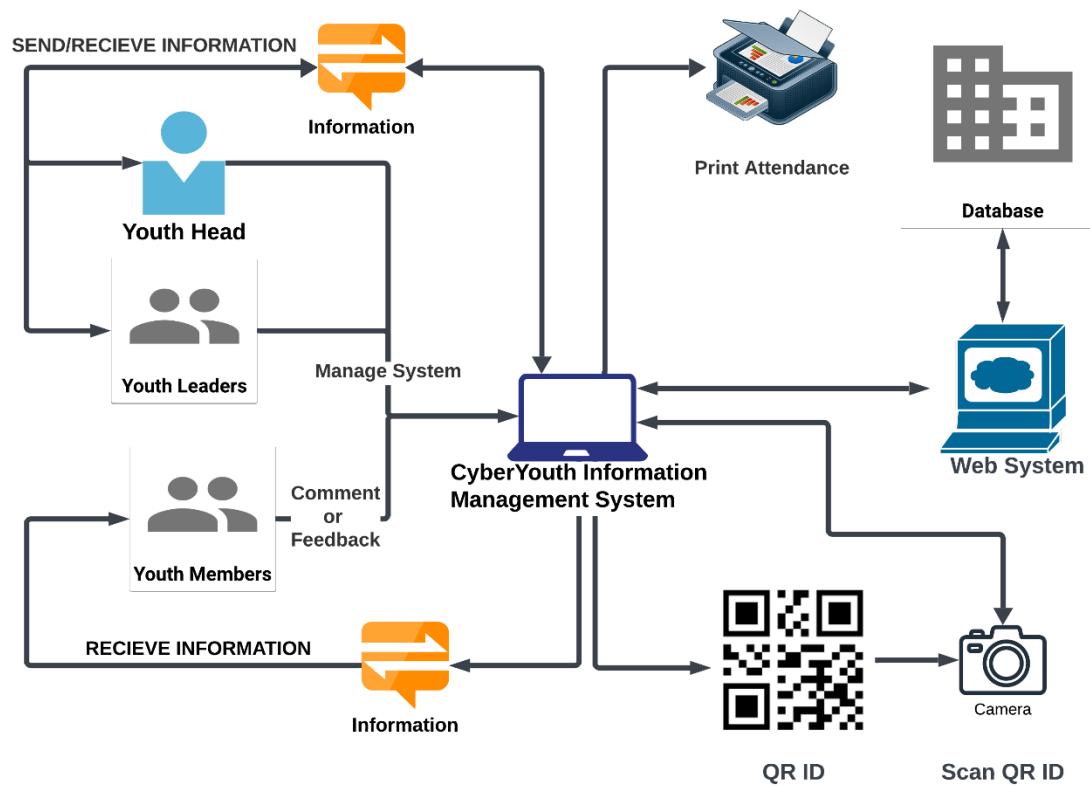


Figure 3-7. System Architecture

The system architecture diagram shows the flow of information within the Cyber Youth Information Management System. The Youth Head sends and receives notifications, which are managed by the system and stored in a database. Youth Leaders and Youth Members also receive information through the system, which generates a unique QR Identification for each member. Additionally, the system connects with a web platform for broader access and management.

Output and User-Interface Design

When designing UI/UX for a software system, it is crucial to focus on simplicity and intuitive navigation, ensuring that users can easily understand how to interact with the interface. Human-Computer Interaction principles emphasize the importance of user-centered design, making interfaces not only functional but also visually appealing and responsive. This approach helps reduce learning curves, minimizes user errors, and enhances overall satisfaction, leading to a more effective and enjoyable user experience (Issa & Isaias, 2022).



Figure 3-8. Homepage

Figure 3-8 shows the main interface displayed for all users upon accessing the system. It includes links to key features and recent updates.

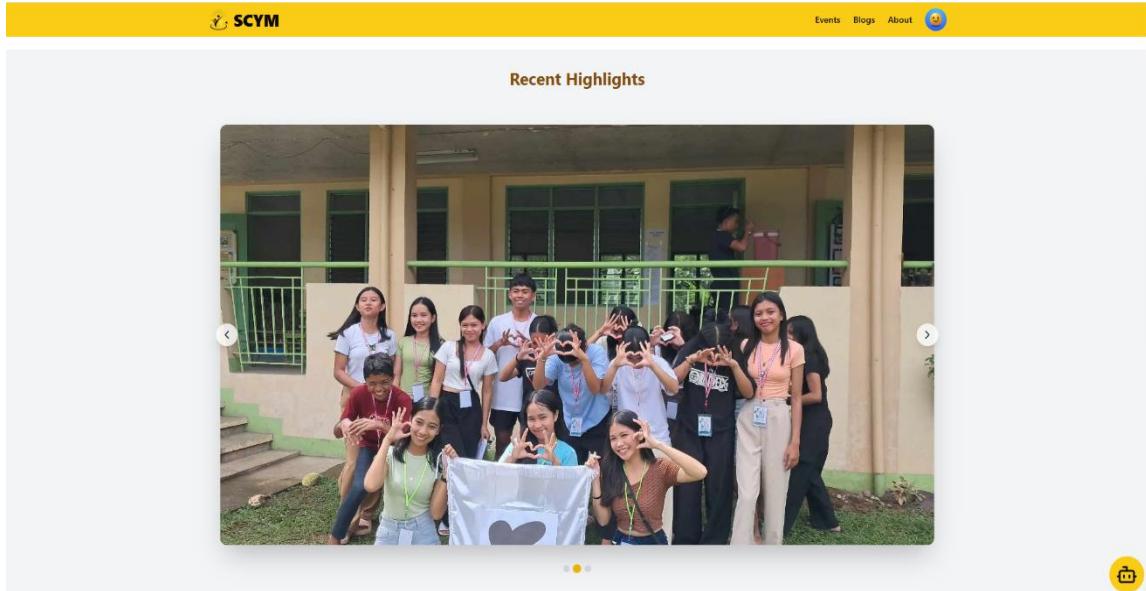


Figure 3-9. Homepage Recent Highlights

Figure 3-9 displays the homepage's recent highlights section, featuring the latest updates and posts. This section keeps users informed on recent activities and announcements.

Post Title	Description	Action
Parish Youth Day	Parish Youth Day is a vibrant gathering designed to empower and inspire young members of the parish. Through engaging activities, prayer, an...	Read more
Parish Summer Youth Camp	This summer youth camp brought together young parishioners for an engaging day filled with faith, fellowship, and fun. Through various inter...	Read more
Senior Sto. Niño Celebration	The Senior Sto. Niño Celebration is a joyous occasion honoring the Child Jesus, Sto. Niño, a beloved symbol of faith, protection, and devot...	Read more

January 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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Figure 3-10. Featured Contents

Figure 3-10 highlights the featured content area, showcasing selected events and announcements. This area prioritizes important content for users.

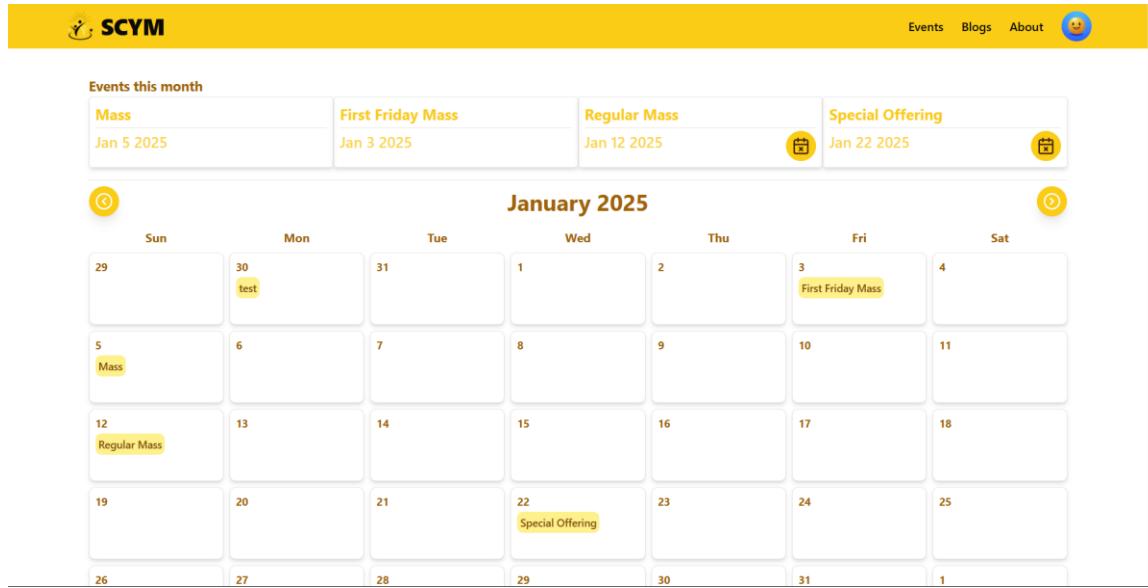


Figure 3-11. Event Calendar with Upcoming Events

Figure 3-11 presents an interactive event calendar displaying upcoming events. It allows users to view event dates and plan attendance accordingly.

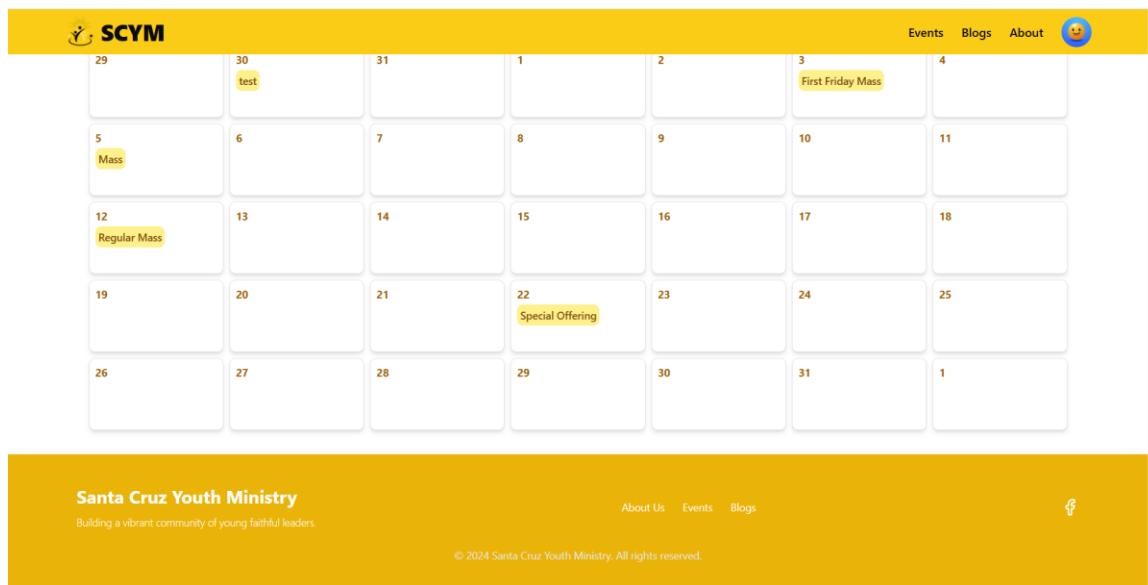


Figure 3-12. Footer

Figure 3-12 shows the footer section located at the bottom of each page. It includes contact information and navigation links for easy access.

The screenshot shows the SCYM Event Management dashboard. At the top, there's a yellow header bar with the SCYM logo, user info (Yoj Eslera, ADMIN), and navigation links for Contents, Members, Emails, Logs, Events, and Reports. Below the header is a title bar for 'Event Management' with a plus icon. The main area features a monthly calendar for January 2025. Specific events are highlighted in yellow boxes: 'test' on Monday, 'Mass' on Tuesday, 'Regular Mass' on Wednesday, and 'Special Offering' on Friday. To the right of the calendar, two event details are listed: 'Regular Mass' on January 12 at 11:00 AM and 'Special Offering' on January 22 at 11:00 AM.

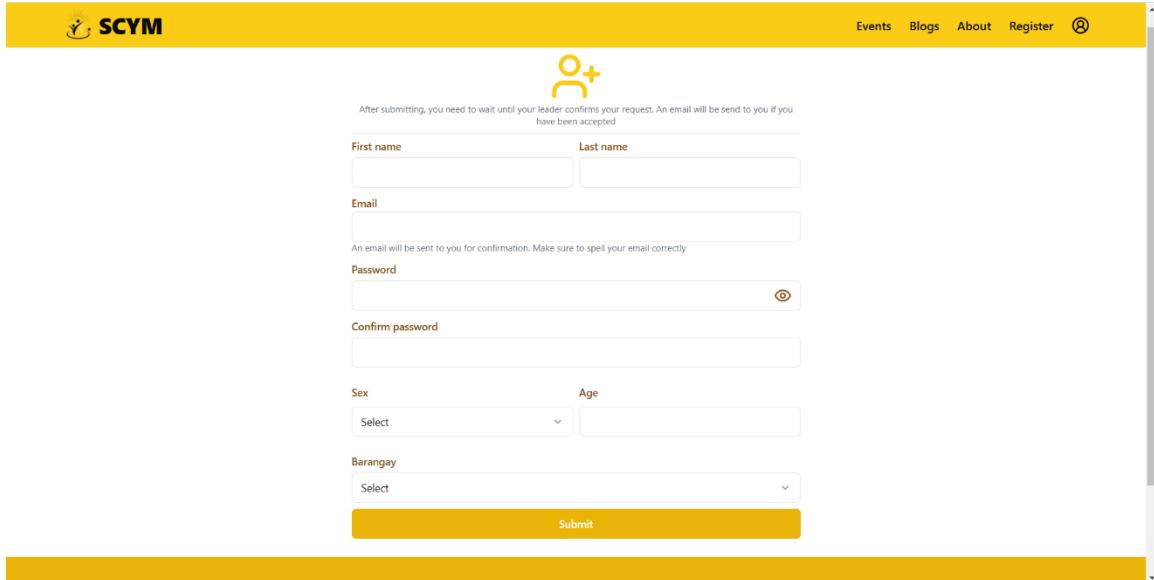
Figure 3-13. Event Calendar Dashboard

Figure 3-13 depicts the event calendar dashboard used by administrators to manage events. This feature enables event additions, updates, and deletions.

The screenshot shows the SCYM 'About Us' page. At the top, there's a yellow header bar with the SCYM logo, user info (Yoj Eslera, ADMIN), and navigation links for Events, Blogs, and About. The main title is 'About Us'. Below the title is a large group photograph of many young people. To the right of the photo is a block of text about the organization's mission: 'We are a Catholic youth organization dedicated to empowering young individuals to live their faith with passion, service, and purpose. Our community fosters spiritual growth, leadership, and a deep connection with the teachings of the Church.' Below this is another block of text about the vision: 'Since our foundation, we have made it our mission to create an environment where young people can grow in their faith, develop leadership skills, and engage in meaningful service. Through various programs, workshops, and outreach initiatives, we help young Catholics realize their full potential, nurturing them to become future leaders of both the Church and society. Our organization is built on values of integrity, compassion, and unwavering dedication to the Gospel message.' At the bottom of the page, there are sections for 'Mission' and 'Vision' with their respective descriptions.

Figure 3-14. About Us

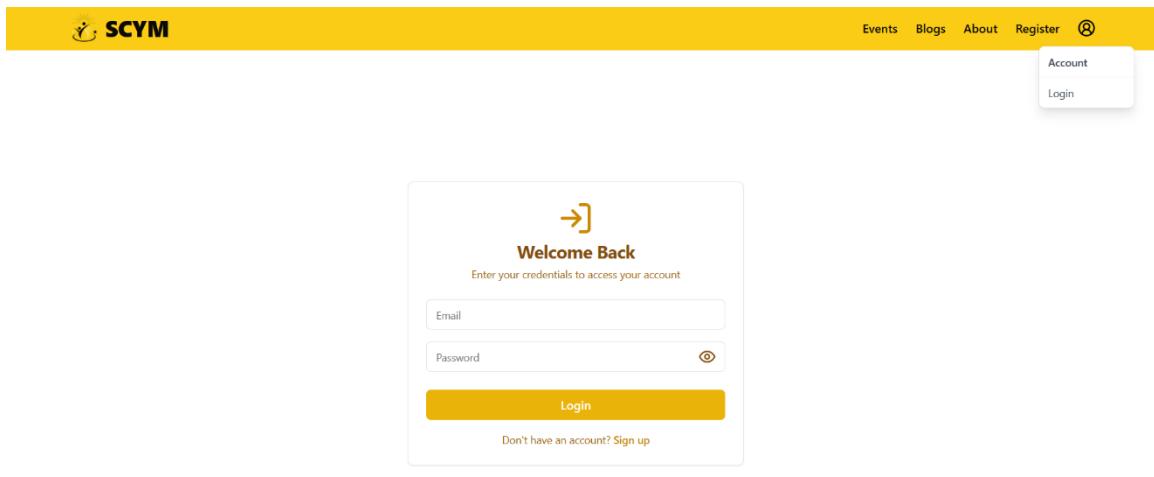
Figure 3-14 shows the "About Us" page, which details background information about the organization. It helps users understand the organization's mission and values.



The registration form is titled 'SCYM' at the top left. It features a yellow header bar with navigation links: Events, Blogs, About, Register, and a user icon. A yellow sidebar on the right contains 'Account' and 'Login' buttons. The main form area has a yellow background and includes fields for First name, Last name, Email, Password, Confirm password, Sex (dropdown), Age (dropdown), Barangay (dropdown), and a large yellow 'Submit' button.

Figure 3-15. Registration Form

Figure 3-15 displays the registration form, where new users can register and create an account. It collects essential user information for onboarding.



The login form is titled 'SCYM' at the top left. It features a yellow header bar with navigation links: Events, Blogs, About, Register, and a user icon. A yellow sidebar on the right contains 'Account' and 'Login' buttons. The main form area has a white background with a yellow border and includes fields for Email and Password, a yellow 'Login' button, and a link for 'Don't have an account? Sign up'.

Figure 3-16. Login Form

Figure 3-16 shows the login form interface, where registered users can securely log in to the system. It ensures access to user-specific content.

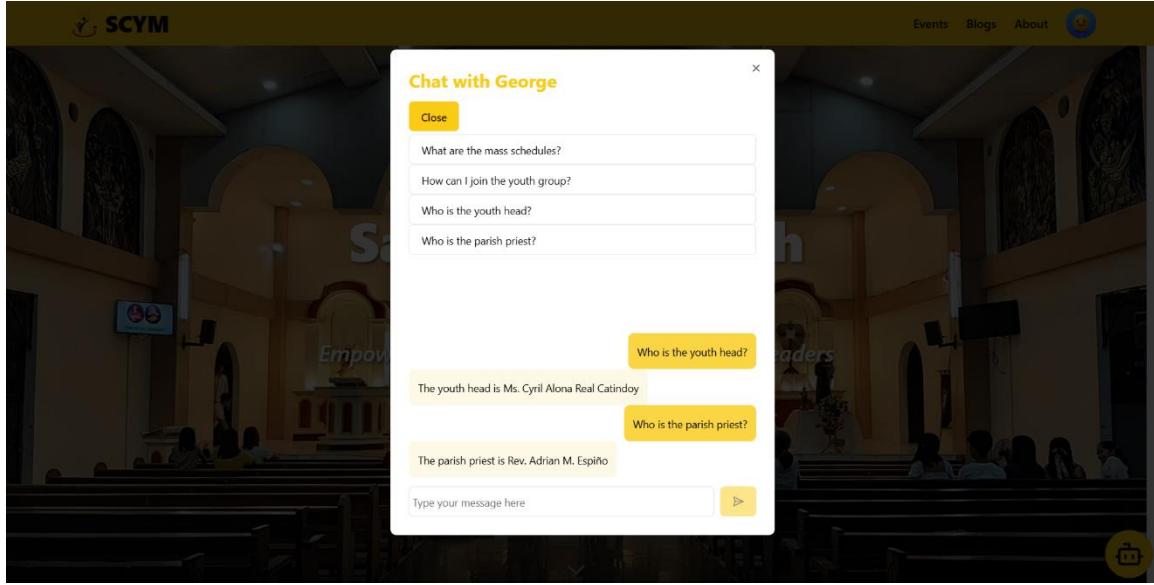


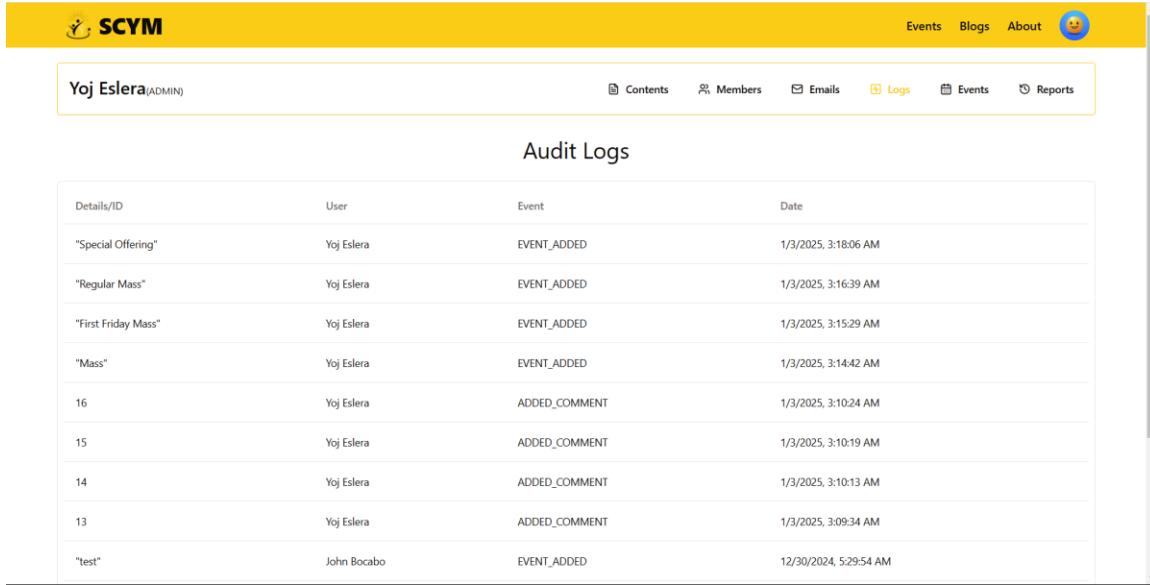
Figure 3-17. Chatbot

Figure 3-17 presents the chatbot interface, which assists users with navigation and common queries. It provides quick responses and enhances the user experience.

Event	Attendance	Date	Action
Mass	3.17%	11/10/2024	View
Test Event	1.59%	11/11/2024	View
Testing	4.76%	11/28/2024	View
TestingTesting	6.35%	11/28/2024	View
Demo	0.00%	11/30/2024	View
test	0.00%	12/30/2024	View
Mass	0.00%	01/04/2025	View
First Friday Mass	1.59%	01/03/2025	View
Regular Mass	1.59%	01/12/2025	View

Figure 3-18. Reports

Figure 3-18 displays the history section, showing a user's activity log within the system. This feature allows users to review their past interactions and actions.

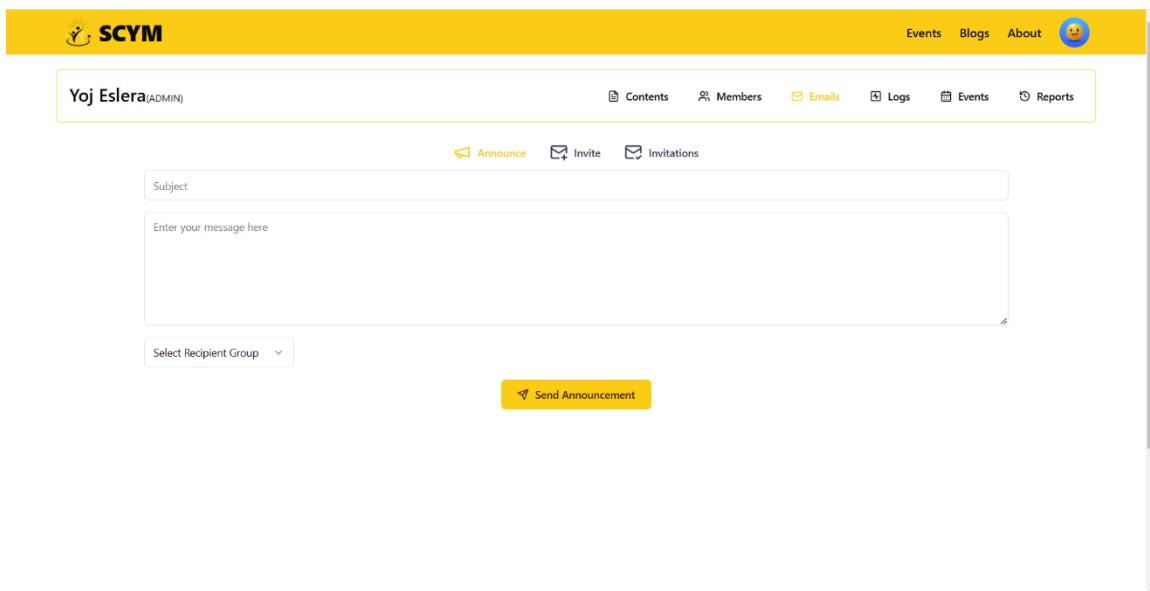


The screenshot shows the SCYM application interface with a yellow header bar. The header includes the SCYM logo, navigation links for Events, Blogs, About, and a user icon, and a search bar with placeholder text "Search". Below the header is a secondary navigation bar with links for Contents, Members, Emails, Logs, Events, and Reports. The main content area is titled "Audit Logs" and displays a table of system activity logs. The table has columns for Details/ID, User, Event, and Date. The data in the table is as follows:

Details/ID	User	Event	Date
"Special Offering"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:18:06 AM
"Regular Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:16:39 AM
"First Friday Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:15:29 AM
"Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:14:42 AM
16	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:24 AM
15	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:19 AM
14	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:13 AM
13	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:09:34 AM
"test"	John Bocabo	EVENT_ADDED	12/30/2024, 5:29:54 AM

Figure 3-19. Audit Logs

Figure 3-19 shows the audit logs, which track system activities for administrative monitoring. This feature enhances transparency and accountability.



The screenshot shows the SCYM application interface with a yellow header bar. The header includes the SCYM logo, navigation links for Events, Blogs, About, and a user icon, and a search bar with placeholder text "Search". Below the header is a secondary navigation bar with links for Announce, Invite, and Invitations. The main content area is titled "Announce" and contains fields for "Subject" and "Enter your message here". There is also a dropdown menu for "Select Recipient Group" and a large yellow button labeled "Send Announcement".

Figure 3-20. Dashboard Announcement

Figure 3-20 presents the dashboard announcement area for sending announcements or invites to specific users. It keeps users informed of important updates.

The screenshot shows the SCYM Content Dashboard. At the top, there's a yellow header bar with the SCYM logo, user information (Yoj Eslera, ADMIN), and navigation links for Events, Blogs, About, and a user icon. Below the header is a toolbar with buttons for Contents, Members, Emails, Logs, Events, and Reports. The main area is titled 'Contents' and contains a table listing various posts. The columns are Title, Author, Date Created, Description, and Action (with a three-dot menu). Each post has a brief description and a '...' button. At the bottom of the table, there are URL, Author, Date, and a '...' button.

Title	Author	Date Created	Description	Action
Synod on Synodality	Yoj Eslera	11/5/2024, 1:46:23 PM	The Synod on Synodality is a global init...	...
1st Parish Anniversa...	Yoj Eslera	11/5/2024, 1:46:51 PM	This celebration marks a dual milestone
Holy Rosary Month Ce...	Yoj Eslera	11/5/2024, 1:47:15 PM	As the month of October, dedicated to th...	...
2nd Parish Summer Yo...	Yoj Eslera	11/5/2024, 1:47:37 PM	This youth camp brought together young m...	...
Agape Feast in Honor...	Yoj Eslera	11/5/2024, 1:48:00 PM	The Agape Feast of Our Lady of the Rosar...	...
Senior Sto. Niño Cel...	Yoj Eslera	11/5/2024, 1:48:22 PM	The Senior Sto. Niño Celebration is a jo...	...

Figure 3-21. Content Dashboard

Figure 3-21 displays the content dashboard for managing posts and content across the system. This feature allows for organized creation and editing of published materials.

The screenshot shows the "Create Content" interface. At the top, there's a yellow header bar with the SCYM logo, navigation links for Events, Blogs, About, and a user icon. Below the header is a form titled "Create Content". It includes fields for "Image" (with a "Choose File" button), "Title" (text input), "Description" (text input), and "Content Body" (text area with placeholder "Content body here"). At the bottom is a large yellow "Submit" button.

Figure 3-22. Create Content

Figure 3-22 illustrates the "Create Content" interface, where users can generate and customize new blogs or content within the web system.

The screenshot shows a web application interface for 'SCYM'. At the top, there's a yellow header bar with the SCYM logo on the left and navigation links for 'Events', 'Blogs', 'About', and a user icon on the right. Below the header, a user 'Yoj Eslera (ADMIN)' is logged in. A secondary navigation bar includes 'Contents', 'Members', 'Emails', 'Logs', 'Events', and 'Reports'. The main content area is titled 'Reported Comments' and contains a table with two rows. The columns are 'Comment', 'Report count', 'Commented By', and 'Action'. The first row has a comment 'Fuck', a report count of 2, commented by 'Yoj Cyril Eslera', and an 'Actions' button with three dots. The second row has a comment 'Fuck', a report count of 1, commented by 'Yoj Cyril Eslera', and an 'Actions' button with three dots.

Figure 3-23. Reported Comments

Figure 3-23 shows the "Reported Comments" section, where flagged or inappropriate comments are listed for review. This feature enables administrators to manage and moderate content, ensuring a respectful and safe environment within the system.

The screenshot shows the 'Attendance Page' for an event titled 'Mass' occurring on November 10, 2024, from 02:00 PM to 03:00 PM at Santa Cruz - Parish. It includes a 'Scanned' and 'Confirmed' status filter. The 'Attendance' section displays a progress bar showing 2 / 63 | 3.17% and a table of participant records. The table columns are 'First Name', 'Last Name', 'Email', and 'Barangay'. Two entries are shown: 'Elder' with email 'elderagres@gmail.com' and 'Barangay' 'San Agustin', and 'CYRIL ALONA' with email 'alonacyrilreal@gmail.com' and 'Barangay' 'Santa Cruz'.

Figure 3-24. Attendance Page

Figure 3-24 displays the "Attendance Page," where users can track and record attendance details. This feature allows for efficient management of participant records, providing an organized view of attendance history for events or meetings.

The screenshot shows a web application interface for SCYM. At the top, there's a yellow header bar with the SCYM logo and navigation links for Events, Blogs, About, and a user icon. Below the header, a user profile for 'Yoj Eslera (ADMIN)' is displayed. A toolbar below the profile includes buttons for Scanned and Confirmed. The main content area is titled 'Mass' and shows details for an event on November 10, 2024, from 02:00 PM to 03:00 PM at Santa Cruz - Parish. A section titled 'Confirmed Attending' lists two individuals: Yoj Eslera and John Bocobo, along with their contact information and barangay details.

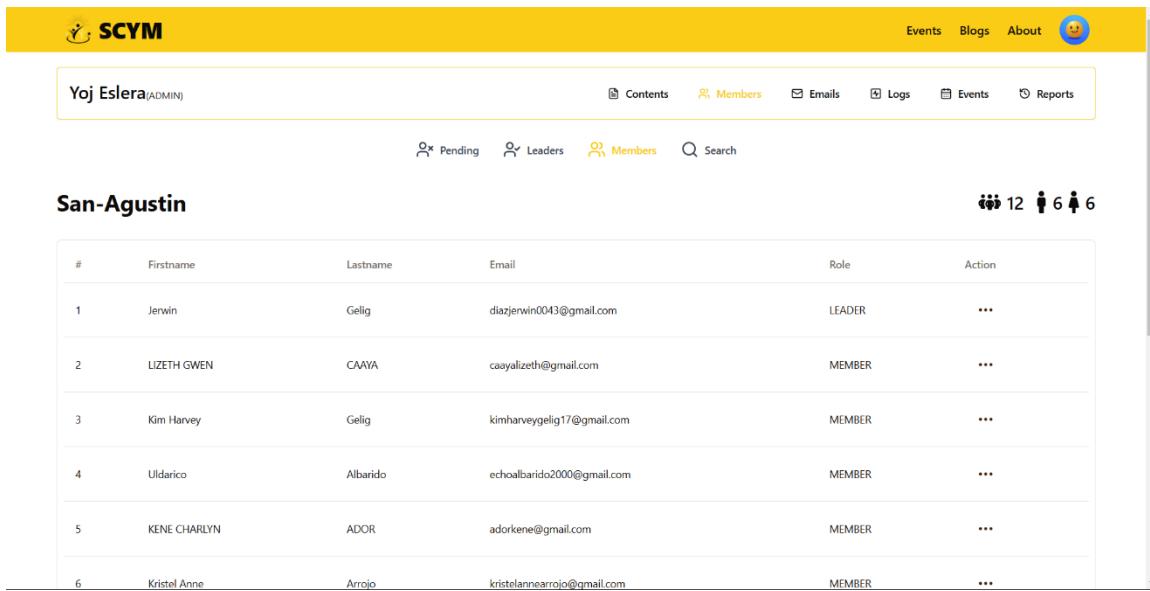
Figure 3-25. Pre-attendance page

Figure 3-25 shows the "Pre-Attendance Page," where users can confirm planned attendance for upcoming events. This feature enables efficient tracking of expected participants, helping organizers prepare in advance.

The screenshot shows the 'Members' section of the SCYM Admin Page. It features a grid of categories with their respective counts: Atipolo (1), Badiang (2), Batug (0), Caalonsohan (7), Hibunawon (4), Lapaz (0), Palanog (0), Pange (7), Parasan (4), San-Agustin (12), San-pedro (1), Santa-Cruz (17), Sari-sari (1), and Villapaz (7). Above the grid, there are summary statistics: 63 total members, 22 males, and 41 females.

Figure 3-26. Member Management Page

Figure 3-26 displays the "Member Management Page," which provides comprehensive tools for managing member registrations. Administrators can enable or disable registration, view total member counts (including by sex), analyze membership statistics across barangays, and view member profiles. Admins also have the authority to assign or demote leaders, accept new members, suspend accounts, or remove members. Leaders, in contrast, are limited to accepting, suspending, or removing members and viewing member profiles.



The screenshot shows a web application interface for managing member profiles. At the top, there's a yellow header bar with the logo 'SCYM' and navigation links for 'Events', 'Blogs', 'About', and a user icon. Below the header, a secondary navigation bar includes 'Contents', 'Members', 'Emails', 'Logs', 'Events', and 'Reports'. A search bar is also present. The main content area is titled 'San-Agustin' and displays a table of member records. The table has columns for '#', 'Firstname', 'Lastname', 'Email', 'Role', and 'Action'. The data in the table is as follows:

#	Firstname	Lastname	Email	Role	Action
1	Jerwin	Gelig	diazjerwin0043@gmail.com	LEADER	...
2	LIZETH GWEN	CAAYA	caayalizeth@gmail.com	MEMBER	...
3	Kim Harvey	Gelig	kimharveygelig17@gmail.com	MEMBER	...
4	Uldarico	Albarido	echoalbarido2000@gmail.com	MEMBER	...
5	KENE CHARLYN	ADOR	adorkene@gmail.com	MEMBER	...
6	Kristel Anne	Arrojo	kristelanearrojo@gmail.com	MEMBER	...

At the top right of the table, there are icons for gender counts: 12 males and 6 females. Below the table, there's a vertical scrollbar.

Figure 3-27. Specific Barangay Members Page.

Figure 3-27 displays the "Specific Barangay Members Page" from the leader's perspective. Leaders can only view members within their assigned barangay and are limited to actions such as accepting, suspending, or removing members, as well as viewing member profiles. This page ensures leaders have focused access to their designated barangay, allowing for efficient and controlled member management.

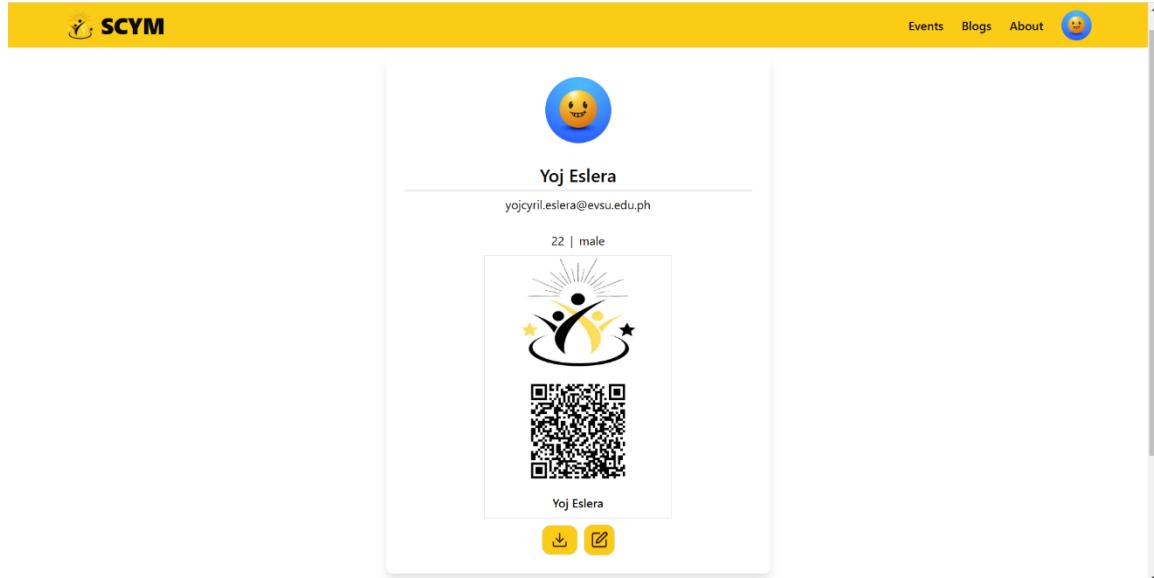


Figure 3-28. Profile Page with QR ID

Figure 3-28 shows the "Profile Page with QR ID," where individual member profiles are displayed with a unique QR ID. This ID can be scanned at events to mark attendance, making the check-in process quick and efficient while maintaining accurate attendance records within the system.

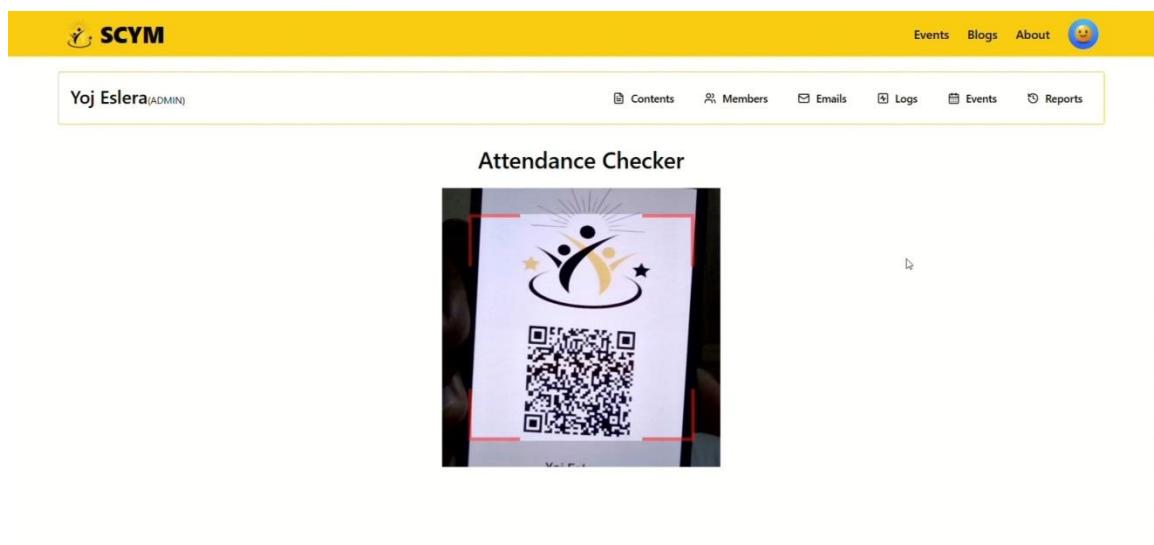


Figure 3-29. QR Scanner

Figure 3-29 shows the QR scanner interface used for scanning QR ID. This feature facilitates quick identification and attendance tracking, displaying the holder's details, picture, name, and barangay for verification.

The figures above represent the output and user-interface design for the Cyber Youth web-based information system. The user interface is presented through images, colors, and text. This system's interface was designed to be simple and visible to users, with carefully placed components and consistent use of common UI elements. This approach ensures that users can easily navigate the system, which is crucial for the Catholic Youth Organization's diverse user base.

Programming Development

Programming development is about the process of the study's system development. This is the part of the paper about the program's environment.

Programming Environment

The development of the system utilizes a single programming language that supports web-based applications. The primary language used is JavaScript, facilitated by the Visual Studio Code software. We picked Next.js to handle our project's front-end and back-end parts. It is a versatile tool that can do both, making development smoother and faster. A MySQL database is integrated for robust and efficient data management.

Web-Based

Frontend

The system's frontend is developed using Next.js, a powerful React-based framework. This allows for server-side rendering, static site generation, and seamless integration with backend services. The frontend handles the user interface, ensuring a responsive and interactive user experience.

Backend

The backend is also managed within the Next.js framework, leveraging its API routes to handle server-side logic, database interactions, and authentication processes. A MySQL database is used for storing and managing data, enabling efficient querying and robust performance. This unified approach simplifies development and maintenance, as both the frontend and backend are built within the same environment, using the same language.

Testing

The system underwent testing to assess its compliance with the specified requirements. This phase demonstrated whether the system was efficient and functional for both the admin users and the public.

Test Plan

The proponents tested the proposed system on its users to ensure efficient performance. The users involved in the testing were the stakeholders of the study. They identified flaws and errors in the system and provided detailed feedback.

Table 3-3. Test Plan for Super Admin

Step	Description	Executed	Error	Remarks
Login	Admin logs in to the system.	100%	0%	Success
Email	Admin can disseminate announcement through email.	100%	0%	Success
Receiving Notifications	Admin receives notifications from email and the system.	100%	0%	Success
Posting Events/Contents	Admin can add, edit, delete, and restore contents/events.	100%	0%	Success
Remove/Accept Members in All barangay	Admin can add and remove members.	100%	0%	Success
Chatbot	Admin can access chatbot for modifying or	100%	0%	Success

	asking for assistance.			
Generate Reports	Can generate pre-attendance / attendance report and users.	100%	0%	Success
QR Attendance	Admin can use scanner or scan their QR in an event for attendance.	100%	0%	Success
Enable/Disable Registration	Youth Head can turn on/off registration depending if the organization will accept new members.	100%	0%	Success
Assign/Demote Leaders	Youth Head can manage leaders in each barangay.	100%	0%	Success

Table 3-4. Test Plan for Admin

Step	Description	Executed	Error	Remarks
Login	Admin logins to the system.	100%	0%	Success
Email	Admin can disseminate announcement through email.	100%	0%	Success
Receiving Notifications	Admin receives notifications from email and the system.	100%	0%	Success
Posting Events/ Contents	Admin can add, edit, delete, and restore contents/ events.	100%	0%	Success
Remove/Accept Members	Admin can add and remove members.	100%	0%	Success
Chatbot	Admin can access chatbot for modifying or	100%	0%	Success

	asking for assistance.			
Generate Reports	Can generate pre-attendance / attendance report and users.	100%	0%	Success
QR Attendance	Admin can use scanner or scan their QR in an event for attendance.	100%	0%	Success

Table 3-5. Test Plan for User

Step	Description	Executed	Error	Remarks
Register	The user register to create an account.	100%	0%	Success
Login	The user can now login.	100%	0%	Success
Comment	User comments are filtered and rated.	100%	0%	Success
Receive Notification	User can receive email notification.	100%	0%	Success
Chatbot	User can ask chatbot for assistant.	100%	0%	Success
QR Attendance	User can scan their QR in an event for attendance.	100%	0%	Success

Evaluate

The system was evaluated following the testing phase to determine its overall standard and quality.

User Acceptability. End users tested the software to ensure it could handle real-world tasks effectively. The proponents conducted a Pilot Test, a type of acceptance testing used to identify potential issues before deployment. This test was performed by internal corporate staff and aimed to evaluate the average user's tasks. Since it occurs early in the development cycle, this type of testing is referred to as alpha testing.

Software Quality Assurance. The focus of software quality assurance was to enhance the efficiency and effectiveness of the development process while adhering to established quality standards. The proponents utilized the ISO 9126 standard to ensure a shared understanding of the project's goals and objectives.

Table 3-6. Five-Point Likert Scale

Rating Scale	Qualitative Description	Scale
5	Strongly Agree	4.21-5.00
4	Agree	3.41-4.20
3	Neutral	2.61-3.40
2	Disagree	1.81-2.60
1	Strongly Disagree	1.00-1.80

Deployment

Simulation

This section focuses on the deployment of the web-based system and mobile application. It assesses the readiness, functionality, and effectiveness of both platforms to ensure they are prepared for real-world use.

The steps the proponents followed to set up and deploy the Cyber Youth web-based information system.

1. Approach in Deploying the Web-Based System to the Client.
 - The proponents visited Santa Cruz Parish and deployed the web-based system to the operator in charge of the youth organization.
 - Both the client and the proponents conducted a simulation to test the functionality of the system.
2. Analysis Output from the Cyber Youth web-based information system.
 - The proponents assessed various aspects of the system, including its functionality, reliability, usability, efficiency, maintainability, and portability.
3. Report on Findings.
 - The proponents gathered all relevant data from the simulation and evaluation for further analysis.

Chapter IV

RESULT AND DISCUSSIONS

This chapter outlines the outcomes related to the study's specific objectives and analyzes or interprets the findings based on the procedures employed. Additionally, it assesses the system's operation to enhance usability at the end of the research study.

Sentiment analysis to prevent negative postings. The CyberYouth web app uses sentiment analysis to sort comments as either positive or negative by checking keywords and context in each message. This feature helps administrators quickly spot and flag any harmful content while recognizing positive feedback, which can also help improve activities and address any areas that need work. By making it easier to manage comments, sentiment analysis creates a respectful environment and gives helpful insights to improve future activities.

The screenshot shows a website for "Santa Cruz Youth Ministry". At the top, there is a yellow header bar with the logo "SCYM" and navigation links for "Events", "Blogs", and "About". Below the header, there is a blog post titled "A Meal Shared, A Community Strengthened". The post discusses a prayer service where parishioners came together in deep reverence, each offering a heartfelt expression of faith and hope in the Blessed Mother's care and protection. It follows with a description of a meal shared after the prayer, symbolizing agape love and community bonds. The post concludes with a note about the Agape Feast in honor of Our Lady of the Rosary, which served as a reminder of love, faith, and togetherness, inspiring participants to live out Mary's example in their daily lives. Below the post, there is a comment section with a "Comments" button, a text input field containing "shil", a "NEUTRAL" button with a smiley face, and a "Post Comment" button. A message indicates "No comments yet." At the bottom of the page, there is a footer with the text "Santa Cruz Youth Ministry" and "Building a vibrant community of young faithful leaders", along with links for "About Us", "Events", "Blogs", and a copyright notice: "© 2024 Santa Cruz Youth Ministry. All rights reserved."

The figure consists of three vertically stacked screenshots of a website interface, likely a forum or comment section, demonstrating sentiment analysis and content filtering.

Screenshot 1 (Top):

- Header:** SCYM (Santa Cruz Youth Ministry) logo, navigation links: Events, Blogs, About, and a user icon.
- Section Title:** A Meal Shared, A Community Strengthened
- Text:** Following the prayer, everyone shared in a feast that symbolized the spirit of agape—a love that binds us together in Christ. The meal was not only a time of joyful sharing but also an opportunity for parishioners to strengthen their bonds with one another, fostering a deeper sense of community and spiritual unity.
- Text:** The Agape Feast in honor of Our Lady of the Rosary served as a reminder of the importance of love, faith, and togetherness. Each participant left with a renewed sense of peace and dedication, inspired to live out Mary's example in their daily lives.
- Comment Section:**
 - Header:** Comments
 - Text:** comment
 - Comment by Yoj Eslera:** Yoj Eslera, 1/10/2025, 11:13:13 AM

 - Sentiment:** NEGATIVE

Screenshot 2 (Middle):

- Header:** SCYM (Santa Cruz Youth Ministry) logo, navigation links: About Us, Events, Blogs, and a user icon.
- Section Title:** Santa Cruz Youth Ministry
- Text:** Building a vibrant community of young faithful leaders.
- Text:** © 2024 Santa Cruz Youth Ministry. All rights reserved.
- Text:** Comment added

Screenshot 3 (Bottom):

- Header:** SCYM (Santa Cruz Youth Ministry) logo, navigation links: Events, Blogs, About, and a user icon.
- Text:** our intercessor. Parishioners came together in deep reverence, each prayer a heartfelt expression of faith and hope in the Blessed Mother's care and protection.
- Text:** A Meal Shared, A Community Strengthened
- Text:** Following the prayer, everyone shared in a feast that symbolized the spirit of agape—a love that binds us together in Christ. The meal was not only a time of joyful sharing but also an opportunity for parishioners to strengthen their bonds with one another, fostering a deeper sense of community and spiritual unity.
- Text:** The Agape Feast in honor of Our Lady of the Rosary served as a reminder of the importance of love, faith, and togetherness. Each participant left with a renewed sense of peace and dedication, inspired to live out Mary's example in their daily lives.
- Comment Section:**
 - Header:** Comments
 - Text:** comment
 - Comment by Yoj Eslera:** Yoj Eslera, 1/10/2025, 11:13:39 AM
mahusay
 - Sentiment:** POSITIVE
- Text:** Comment added

Figure 4-0. Sentiment Analysis to Prevent Negative Postings.

The figure illustrates the "Sentiment Analysis to Prevent Negative Postings," where the system automatically detects and classifies comments as positive or negative. It also filters inappropriate comments by flagging negative or harmful content for review, ensuring a safer and more respectful online environment.

Integrate features like a chatbot and event tracker. The CyberYouth web app offers users various features to enhance their experience and streamline organizational tasks. The integrated chatbot provides quick responses to common inquiries, assisting members in navigating the app and accessing information effortlessly. Additionally, the event tracker, complete with an event calendar, enables members to view upcoming events and confirm their pre-attendance with a simple tap, automatically logging their planned participation. These tools simplify event management and participant tracking, allowing organizers to manage attendance efficiently while keeping members informed and engaged in scheduled activities.

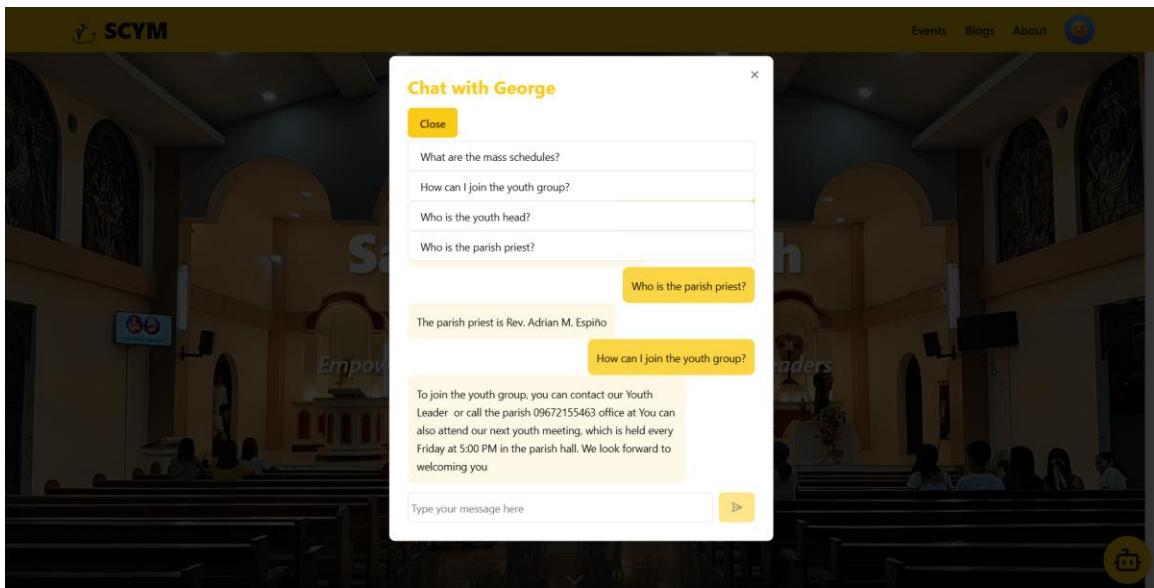


Figure 4-1. Chatbot

Figure above presents the chatbot interface, which assists users with navigation and common queries. It provides quick responses and enhances the user experience.

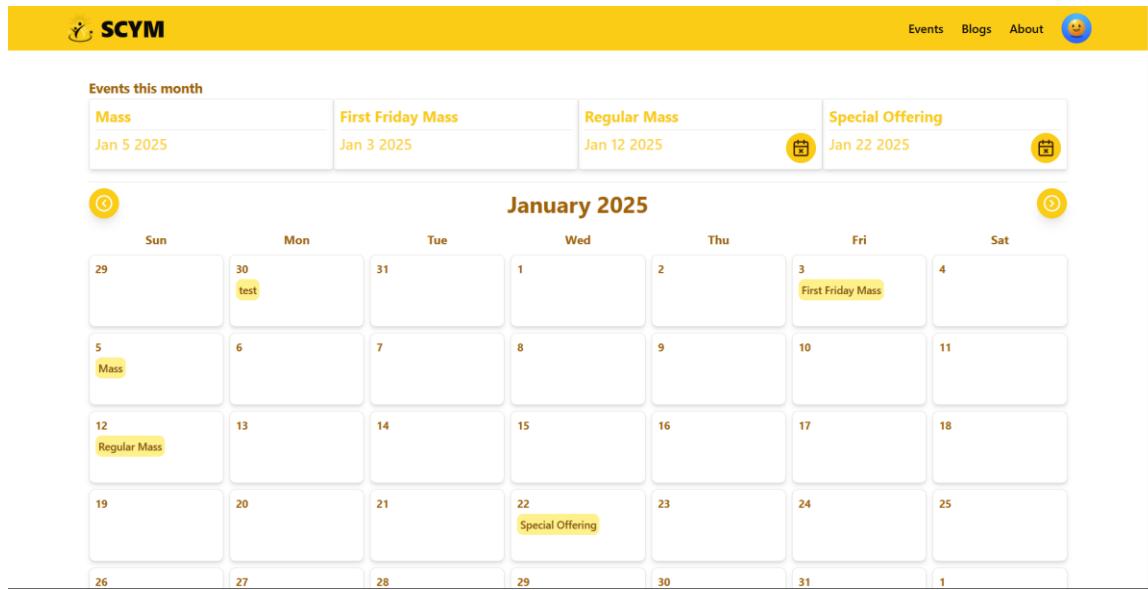


Figure 4-2. Event Calendar with Upcoming Events

The figure above shows the "Event Calendar with Upcoming Events," where youth members can view a list of scheduled events. Through this page, members have the option to confirm their attendance for each event. Once a member confirms their participation, their name is automatically recorded in the pre-attendance list, ensuring a smooth process for event preparation. This feature helps organizers track expected attendees in advance and efficiently manage event logistics.

Generate QR identification for security. The system generates unique QR IDs for each member, which are displayed alongside their profiles and serve as a secure method for event check-ins. At events, members present their QR IDs to be scanned, allowing for a quick and efficient check-in process that minimizes wait times. This system speeds up attendance tracking and enhances security, as only members with a valid QR code can access events. By preventing unauthorized access, the QR ID feature ensures attendance records are accurate and that only verified members can participate.

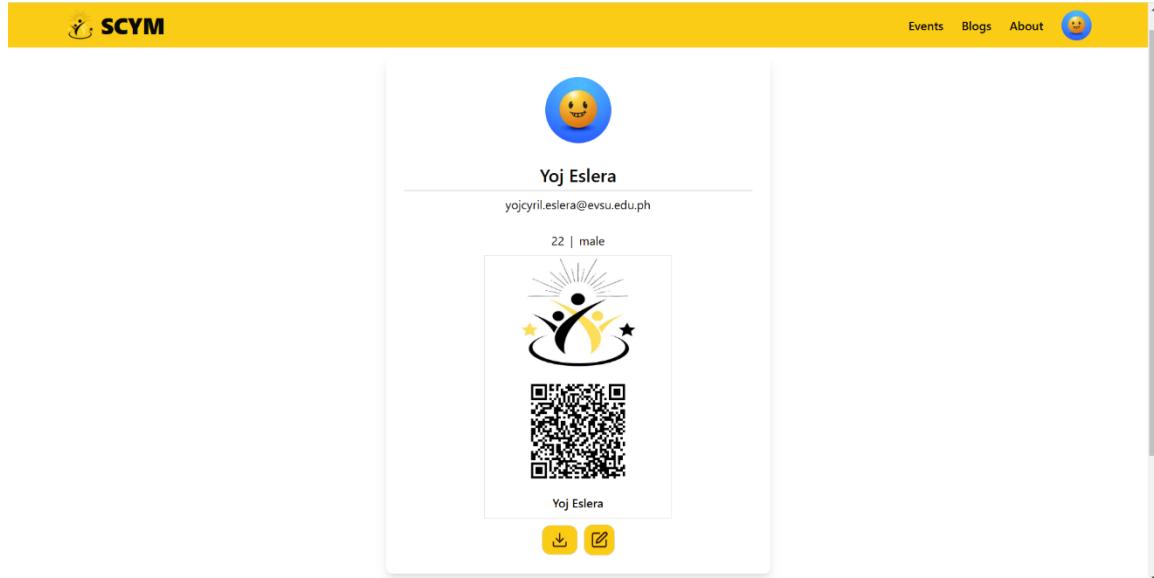


Figure 4-3. Profile Page with Qr Id

Figure shows the "Profile Page with QR ID," where individual member profiles are displayed with a unique QR ID. This ID can be scanned at events to mark attendance, making the check-in process quick and efficient while maintaining accurate attendance records within the system.

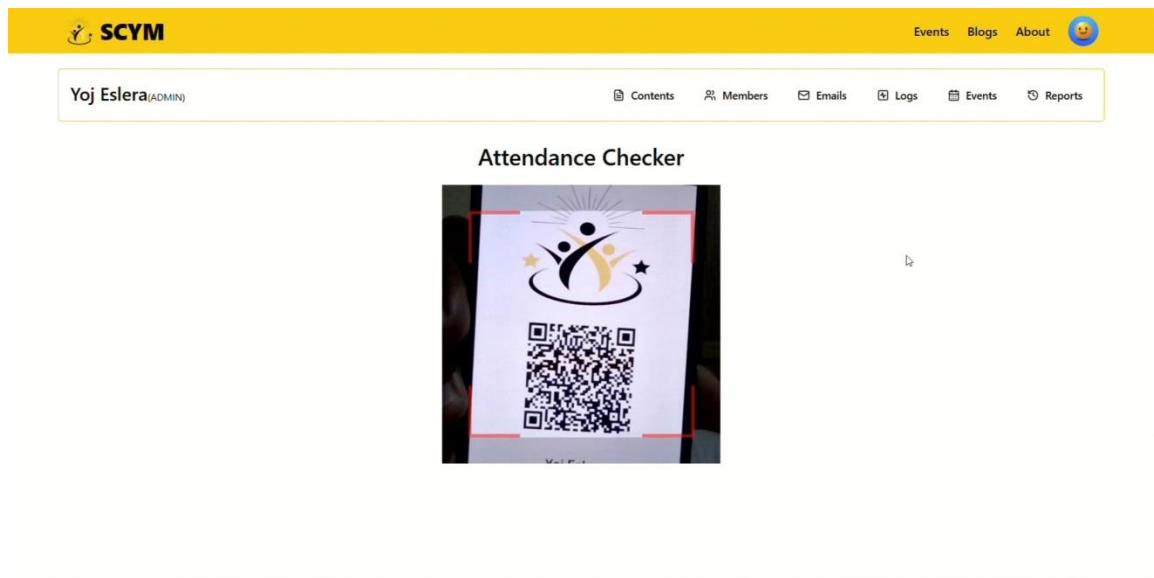


Figure 4-4. Qr Scanner

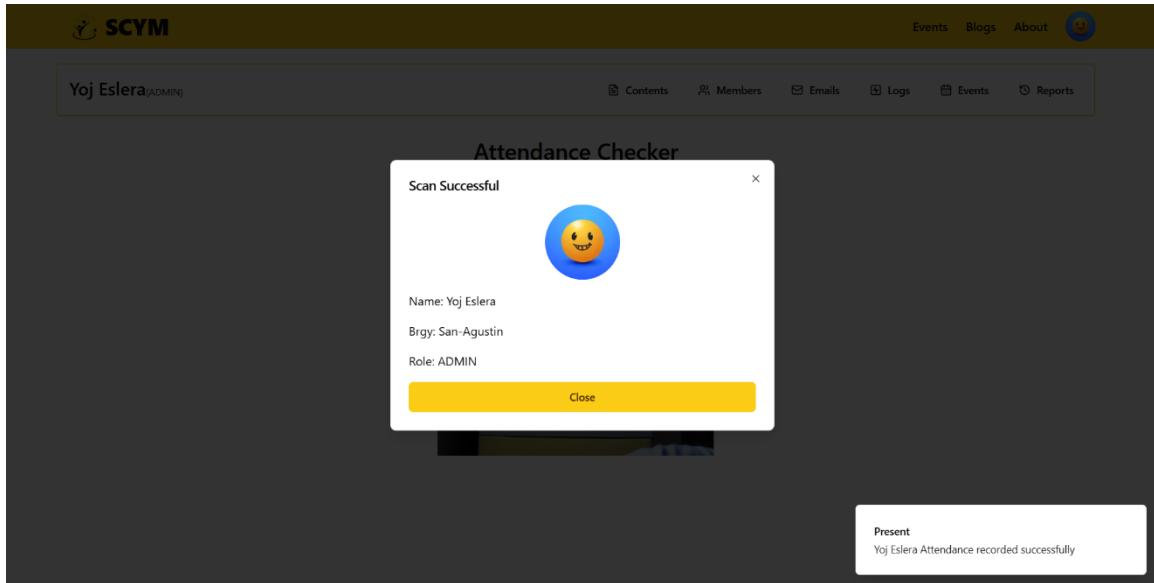


Figure 4-4-1. Qr Scanner Result

Figures above shows the QR scanner and the QR scanner result interface used for scanning QR ID. This feature facilitates quick identification and attendance tracking, displaying the holder's details, picture, name, and barangay for verification.

A mobile-responsive interface. Youth members with a mobile device can easily access the CyberYouth web app through their web browser, utilizing its fully mobile-responsive interface. This design ensures that the app's layout, features, and content adjust smoothly to fit various screen sizes, providing an optimal experience on smartphones and tablets. Youth leaders can navigate through sections, view events, check attendance, and announce events or meetings directly from their mobile devices. This responsive setup enhances accessibility and convenience, helping leaders stay connected and actively engage with the SCYM community anytime, anywhere.

The screenshot shows the SCYM mobile application interface. At the top, there's a navigation bar with icons for home, back, search, and more. The main header says "SCYM". Below it, a sub-header shows "Yoj Eslera(ADMIN)". A navigation bar at the top of the content area includes "Members", "Emails", "Logs", "Events", and "Reports". Under "Events", there are tabs for "Scanned" and "Confirmed". The main content area displays a "Mass" event with the following details:

- Time:** November 10, 2024 at 02:00 PM - November 10, 2024 at 03:00 PM
- Location:** Santa Cruz - Parish

Below this, there's a section for "Attendance" with a table showing two attendees:

First Name	Last Name	Email
Elder	Caaya	elderagres@gmail.com
CYRIL ALONA	CATINDOY	alonacyrilreal@gmail.com

Attendance statistics: 2 / 63 | 3.17%. To the right, there's a detailed "Attendance Report" section with a table showing the same two attendees under "Name" and "Barangay". The report also includes the time range (November 10, 2024 at 06:00 AM - November 10, 2024 at 07:00 AM), total attendees (2 / 63 or 3.17%), and download date (1/19/2025). At the bottom right, there are four icons: "Mobile view", "Preview", "Projection", and "Edit".

The screenshot shows the SCYM mobile application interface. At the top, there's a navigation bar with icons for home, back, search, and more. The main header says "SCYM". Below it, a sub-header shows "Yoj Eslera(ADMIN)". A navigation bar at the top of the content area includes "Contents", "Members", "Emails", "Logs", "Events", and "Reports". Under "Members", there are tabs for "Pending", "Leaders", "Members", and "Search". The main content area displays a list of members for the "San-Agustin" community, with a total count of 12 males and 6 females.

#	Firstname	Lastname	Email
1	Jerwin	Gelig	diazjerwin0043@gmail.com
2	LIZETH GWEN	CAAYA	caayalizeth@gmail.com
3	Kim Harvey	Gelig	kimharveygelig17@gmail.com
4	Uldarico	Albarido	echoalbarido2000@gmail.com
5	KENE CHARLYN	ADOR	adorkene@gmail.com
6	Kristel Anne	Arrojo	kristelanearrojo@gmail.com
7	Jemalyn	Garrido	jemalyngarrido@gmail.com

To the right, there's a "Previous Events" section with a table listing past events:

Event	Attendance	Date	Action
Mass	3.17%	11/10/2024	View
Test Event	1.59%	11/11/2024	View
Testing	4.76%	11/28/2024	View
TestingTesting	6.35%	11/28/2024	View
Demo	0.00%	11/30/2024	View
test	0.00%	12/30/2024	View
Mass	0.00%	01/04/2025	View
First Friday Mass	1.59%	01/03/2025	View
Regular Mass	3.17%	01/12/2025	View
Special Offering	0.00%	01/22/2025	View

Contents

Title	Author	Date Created	Description
Synod on Synodality	Yoj Eslera	11/5/2024, 1:46:23 PM	The Synod on Synodality is a global init...
1st Parish Anniversa...	Yoj Eslera	11/5/2024, 1:46:51 PM	This celebration marks a dual milestone ...
Holy Rosary Month Ce...	Yoj Eslera	11/5/2024, 1:47:15 PM	As the month of October, dedicated to th...
2nd Parish Summer Yo...	Yoj Eslera	11/5/2024, 1:47:37 PM	This youth camp brought together young m...
Agape Feast in Honor...	Yoj Eslera	11/5/2024, 1:48:00 PM	The Agape Feast of Our Lady of the Rosar...
Senior Sto. Niño Cel...	Yoj Eslera	11/5/2024, 1:48:22 PM	The Senior Sto. Niño Celebration is a la...

Members

Category	Count
63	63
22	22
41	41

Admin Page

Location	Members
Atipolo	1
Badiang	2
Batug	0
Caalonsohan	7
Hibunawon	4
Lapaz	0
Palanog	0
Pange	7

Announce

Subject:

Enter your message here:

Select Recipient Group:

Send Announcement

Audit Logs

Details/ID	User	Event	Date
20	Yoj Eslera	ADDED_COMMENT	1/10/2024 3:13:39 AM
19	Yoj Eslera	ADDED_COMMENT	1/10/2024 3:13:13 AM
18	Yoj Eslera	ADDED_COMMENT	1/10/2024 3:11:24 AM
17	Yoj Eslera	ADDED_COMMENT	1/10/2024 3:11:10 AM
"Special Offering"	Yoj Eslera	EVENT_ADDED	1/3/2024 3:18:06 AM
"Regular"	Yoj	EVENT_ADDED	1/3/2024 3:16:39



Welcome Back

Enter your credentials to access your account

(eye)

[Login](#)

[Don't have an account? Sign up](#)



After submitting, you need to wait until your leader confirms your request. An email will be sent to you if you have been accepted

An email will be sent to you for confirmation. Make sure to spell your email correctly

(eye)

[Submit](#)



Parish Priest

"As the parish priest, I am committed to guiding our youth towards a deeper understanding of their faith and encouraging them to become compassionate leaders. Our mission is to nurture their spiritual growth and support them in making a positive impact in our community." - Father Adrian Macole Espriño





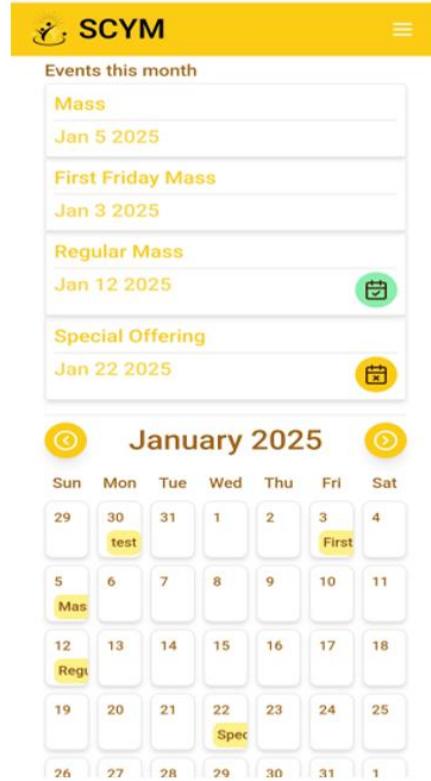
Event Management

January 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30 t...	31	1	2	3 F...	4
5 M...	6	7	8	9	10	11
12 R...	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1

Regular Mass
January 12, 2025 at 11:00 AM

Special Offering
January 22, 2025 at 11:00 AM



Events this month

- Mass**
Jan 5 2025
- First Friday Mass**
Jan 3 2025
- Regular Mass**
Jan 12 2025
- Special Offering**
Jan 22 2025

January 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30 <small>test</small>	31	1	2	3 <small>First</small>	4
5 <small>Mas</small>	6	7	8	9	10	11
12 <small>Regu</small>	13	14	15	16	17	18
19	20	21	22 <small>Spec</small>	23	24	25
26	27	28	29	30	31	1

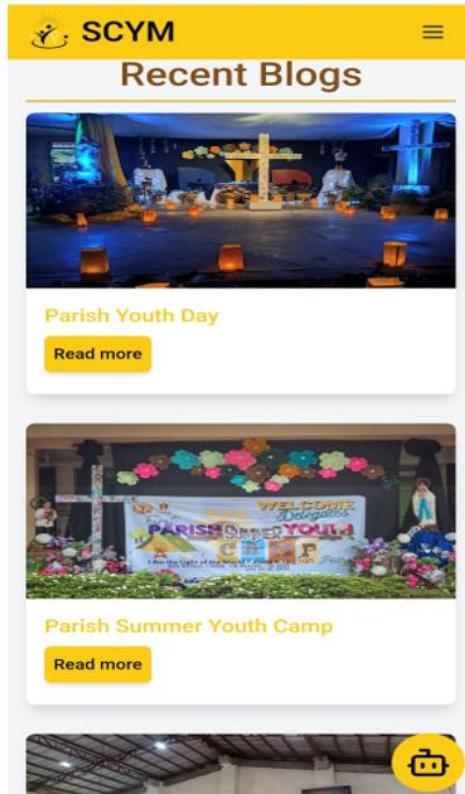


About Us



We are a Catholic youth organization dedicated to empowering young individuals to live their faith with passion, service, and purpose. Our community fosters spiritual growth, leadership, and a deep connection with the teachings of the Church.

Since our foundation, we have made it our mission to create an environment where young people can grow in their faith, develop leadership skills, and engage in meaningful service. Through various programs, workshops, and outreach initiatives, we help young Catholics realize their full potential nurturing them to



Recent Blogs


Parish Youth Day
[Read more](#)


Parish Summer Youth Camp
[Read more](#)



Sun	Mon	Tue	Wed	Thu	Fri	Sat
5 <small>Ma...</small>	6	7	8	9	10 <small>10</small>	11
12 <small>Re...</small>	13	14	15	16	17	18
19	20	21	22 <small>Sp...</small>	23	24	25
26	27	28	29	30	31	

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Santa Cruz Youth Ministry
Building a vibrant community of young faithful leaders.

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Figure 4-5. Mobile Responsive Interface

The figures above display the "Mobile Responsive UI," which showcases the user interface optimized for mobile devices. This design ensures that all features and content are easily accessible and functional on smaller screens, providing a seamless experience for users accessing the system via smartphones or tablets. The layout adjusts dynamically to different screen sizes, maintaining usability and visual appeal across various mobile devices.

Evaluate the system using ISO 9126 regarding functionality, reliability, usability, efficiency, maintainability, and portability. Testing is essential for ensuring the quality and performance of any software system. The main goal of testing is to identify flaws, improve the system's overall quality, reliability, and performance, and ensure it meets the requirements set by the Catholic Youth Organization. In this project, Beta Testing was conducted. During beta testing, the system was released to a select group of youth members, allowing for additional testing to identify and resolve any bugs or issues before a full-scale release.

The proponents selected 50 respondents from the organization using a simple random sampling method. This approach was chosen because it ensures that each member of the population

has an equal chance of being included. The sample size of 50 was appropriate for gathering feedback and assessing the system's performance. Simple random sampling is favorable in homogeneous populations as it ensures unbiased and representative sampling; however, it may pose challenges if the population is widely dispersed or heterogeneous (Noor, Tajik, & Golzar, 2022).

The system's functionality in managing youth information, event notifications, and attendance was evaluated using survey questionnaires based on ISO 9126 criteria. Respondents rated the system on a five-point Likert scale, assessing functionality, reliability, usability, efficiency, maintainability, and portability. The responses were analyzed using the weighted mean to measure user satisfaction and system performance, with interpretations based on Table 4-0.

Table 4-0. ISO 9126 Evaluation Result

ISO 9126 Characteristic	Grand Mean	Qualitative Description
Functionality	4.69	Strongly Agree
Reliability	4.54	Strongly Agree
Usability	4.75	Strongly Agree
Efficiency	4.60	Strongly Agree
Maintainability	4.66	Strongly Agree
Portability	4.75	Strongly Agree
Overall Grand Mean:	4.66	Strongly Agree

Table 4-1 shows the overall result and performance of Cyber Youth A Web-Based Information System with Chatbot and Information Dissemination for Catholic Youth Organization. The evaluation result indicates that the proponents successfully achieved the specific objective of the study.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The Catholic Youth Organization in Jaro, Leyte, faces challenges in effectively managing communication, attendance, and event coordination. The current system relies on a mix of traditional methods, such as physical flyers and word of mouth, as well as informal digital platforms like Facebook and Messenger. These approaches lead to disorganization, missed updates, and difficulty tracking event participation. Additionally, the absence of a mandatory ID system allows unauthorized outsiders to attend events, compromising security.

To address these issues, this project introduces the Cyber Youth Information Management System, a web-based platform integrated with chatbot support, event tracking, and sentiment analysis. The system streamlines communication by centralizing event updates, notifications, and attendance tracking. It incorporates modern tools such as a QR code-based attendance system to reduce manipulation and errors. Additionally, sentiment analysis is used to filter inappropriate comments, ensuring constructive feedback. The system was developed using Next.js and Node.js, ensuring high efficiency and scalability.

The development process followed the SDLC Iterative Method, and the system's performance was evaluated using ISO 9126 standards for functionality, reliability, usability, efficiency, maintainability, and portability. Beta testing was conducted with 50 youth members, whose feedback was used to enhance the system. The Catholic Youth Organization found that the system greatly improved their operations, making it easier to manage events, communicate with members, and secure event attendance, ensuring a more organized and effective approach to their activities.

Conclusions

The Cyber Youth Information Management System successfully fulfills the objectives outlined for the project. This web-based platform has significantly improved communication, event management, and member engagement within the Catholic Youth Organization in Jaro, Leyte, Philippines. By centralizing updates, notifications, and event tracking, the system has streamlined the way information is disseminated, ensuring that members are consistently informed and actively involved in organizational activities.

Sentiment analysis was integrated into the system to filter out negative or inappropriate comments in posts and discussions. This feature helps maintain a constructive and respectful environment, encouraging positive interactions among members and ensuring that feedback remains helpful and relevant.

The chatbot feature has proven to be an effective tool for providing quick responses to members' inquiries. It assists users by offering information about upcoming events, general queries, and other common concerns, improving the overall efficiency of communication within the organization. Additionally, the event tracker makes it easier for members to stay updated on events, track attendance, and follow relevant schedules.

The QR code-based attendance system has greatly enhanced the accuracy and security of tracking attendance. This system minimizes manual errors and manipulation, ensuring that attendance records are reliable. It also improves security during events, as QR codes, combined with ID verification, prevent unauthorized individuals from entering events, creating a safer environment for participants.

The platform's mobile-responsive design allows members to access the system from any device, whether a smartphone, tablet, or desktop. This ensures that the system is convenient and accessible, providing a seamless user experience regardless of the device being used.

In conclusion, the Cyber Youth Information Management System offers a comprehensive solution to the communication challenges faced by the Catholic Youth Organization. By incorporating modern tools such as sentiment analysis, chatbots, QR code-based attendance, and a mobile-responsive interface, the system has improved the organization's ability to engage with members, manage events efficiently, and maintain a secure and organized environment. This project represents a significant step forward in leveraging technology to foster better community involvement and streamline operations within the organization.

Recommendations

For future researchers looking to carry out a similar study and explore ways to enhance and expand the system, the following recommendations are suggested:

1. Broaden the system's usability to cater to other youth organizations.
2. Integrate a localhost chatroom for easier communication in remote areas.
3. Develop a mobile app platform for better accessibility.

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APPENDICES

APPENDIX A

LETTER REQUEST TO CLIENT


**Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY**
 Tacloban City
 COLLEGE OF ENGINEERING


BAGONG PILIPINAS

July 29, 2024

CYRIL ALONA CATINDOY
 President of Sta. Cruz Youth Organization
 Brgy. Santa Cruz Jaro, Leyte

Dear Ma'am Cyril,

We are writing to formally request a permission to conduct a survey to The Members of Sta. Cruz Youth Organization as part of our capstone project titled "*Cyberyouth: A web-based information system with chatbot and information dissemination for catholic youth organization.*" The purpose of this survey is to gather valuable feedback and insights that will aid us in the development and improvement of our system project

Our capstone project, *Cyberyouth*, encompasses the design and development of a web-based information system tailored for the Catholic Youth Organization in Jaro, Leyte, Philippines. Below are the key features of our project:

- **Event Tracker.** Displays of upcoming events organized by the Catholic Youth Organization. Users can view event details, and receive reminders. Administrators can manage event schedules through the system.
- **Chatbot Assistance.** Integrates a chatbot feature to provide instant assistance and information retrieval for users. The chatbot can answer frequently asked questions, provide event details, and offer guidance on accessing resources within the platform.
- **Announcement and Email Notification.** Enables administrators to broadcast announcements and notifications to all members of the Catholic Youth Organization. Users receive alerts for important updates, event invitations, and reminders via email or sms notifications. We believe that the insights gathered from the survey will significantly contribute to the development of *Cyberyouth*, ensuring that it meets the needs and preferences of its users effectively.

We assure you that the survey will be conducted with utmost professionalism and adherence to ethical standards. All data collected will be handled confidentially and used solely for the purpose of our capstone project.


“Building Globally Competitive Professionals”
 ARCHBISHOP LINO R. GONZAGA AVENUE, TACLOBAN CITY, 6500 PHILIPPINES
 Email: ramon.lim@evsu.edu.ph | website: www.evsu.edu.ph



Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

COLLEGE OF ENGINEERING



We kindly request your approval to distribute the survey questionnaire among the Sta. Cruz Youth Organization and seek their participation in providing valuable feedback. Your support in this matter would be greatly appreciated.

Thank you for considering our request. Should you have any questions or require further information, please do not hesitate to contact us at 09380374837 or yojcyril.eslera@evsu.edu.ph.

Sincerely,

YOJCYLIR D. ESLERA

JOHN DOE V. BO CABO

ELDER A. CAAYA
Researchers

Noted:

RUSTOM D. CLEMENTE, MSIT
 Capstone Project 1 Adviser

JESSIE R. PARAGAS, DIT
 Head, Information Technology Department



"Building Globally Competitive Professionals"

ARCHBISHOP LINO R. GONZAGA AVENUE, TACLOBAN CITY, 6500 PHILIPPINES
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APPENDIX B

EVALUATION TOOL

SURVEY QUESTIONNAIRE (BASED ON ISO 9126 SOFTWARE QUALITY STANDARD)

Title of System: Cyber Youth A Web-Based Information System with Chatbot and Information Dissemination for Catholic Youth Organization

Name _____ **Date:** _____
 (Optional): _____
Designation: _____

Direction: Please put check (✓) on the Rating Scale on every statement with the most appropriate response.

FUNCTIONALITY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system provides all the necessary features (chatbot, event tracker, etc.).					
2. The sentiment analysis effectively filters out inappropriate content.					
3. The QR identification feature improves security for events.					

RELIABILITY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system functions without crashes or unexpected errors.					
2. The system provides consistent performance even during peak usage.					
3. Encountering bugs or errors when using the system is rare.					

USABILITY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system is easy to use and navigate.					
2. The mobile-responsive design enhances accessibility across devices.					
3. The chatbot is helpful and user-friendly.					

EFFICIENCY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system responds quickly without significant lag.					
2. The system performs efficiently when multiple users are accessing it simultaneously.					
3. Features like event tracking and QR verification process efficiently.					

MAINTAINABILITY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system can be updated or modified easily to accommodate new requirements.					
2. There is minimal downtime when updates are made.					
3. The system is easy to update and maintain (based on your usage).					

PORTABILITY	Rating Scale				
	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The system can be easily accessed on different devices (phones, tablets, etc.).					
2. The system performs consistently across different operating systems.					

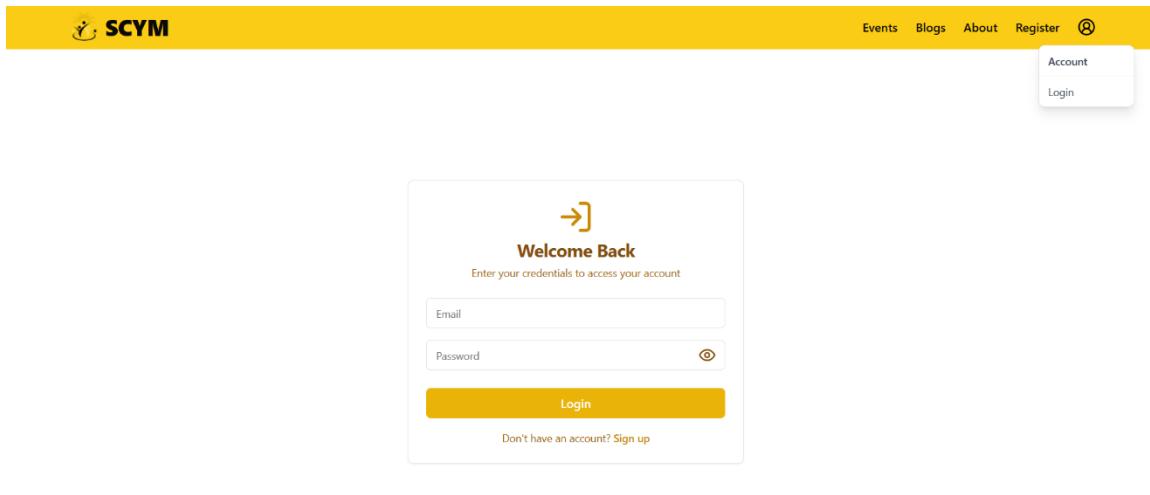
THANK YOU!

APPENDIX C

USER'S MANUAL

A. Login

1. Enter your credentials (email and password).



2. You will be redirected to the homepage upon successful login.



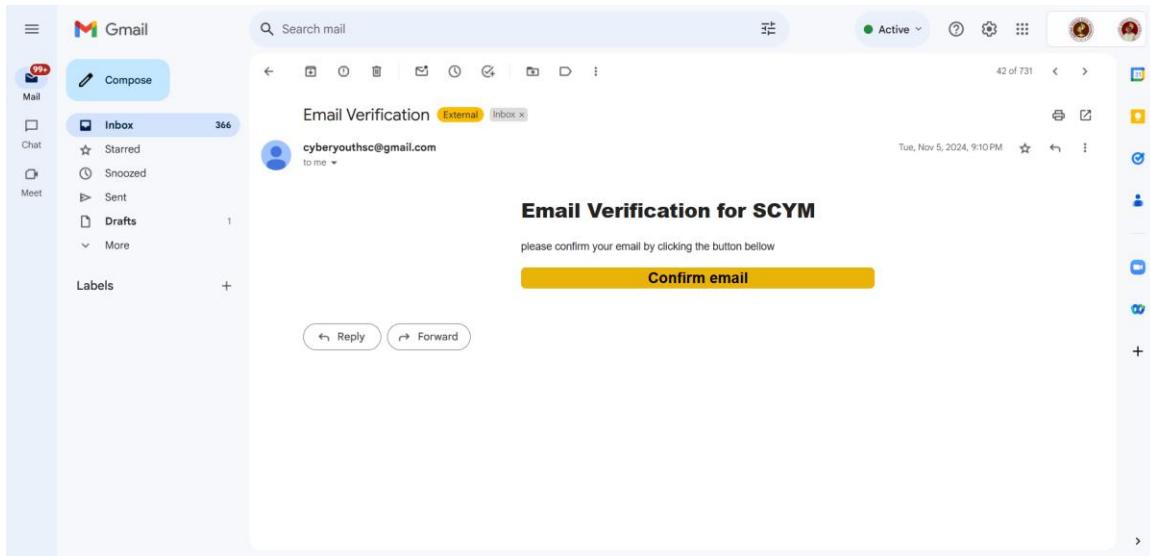
B. Registration

- Fill out all required fields using an active email address.

The screenshot shows the SCYM registration form. At the top, there is a yellow header with the SCYM logo and navigation links for Events, Blogs, About, Register, and a user icon. Below the header is a yellow circular icon with a person and a plus sign. A note below it says: "After submitting, you need to wait until your leader confirms your request. An email will be sent to you if you have been accepted." The form fields include:

- First name and Last name (text input fields)
- Email (text input field with a note: "An email will be sent to you for confirmation. Make sure to spell your email correctly")
- Password (text input field with a visibility icon)
- Confirm password (text input field)
- Sex (dropdown menu: Select)
- Age (text input field)
- Barangay (dropdown menu: Select)
- A large yellow "Submit" button at the bottom.

- Submit the form and wait for a verification email.



3. Await approval from your barangay's Youth Leader or the Youth Director.

The screenshot shows the SCYM website interface. At the top, there is a yellow header bar with the SCYM logo and navigation links for Events, Blogs, About, and a user icon. Below the header, a sub-header bar shows the user 'Yoj Eslera(ADMIN)' and links for Contents, Members, Emails, Logs, Events, and Reports. A search bar and a 'Clear' button are also present. The main content area is titled 'Brgy. San-Agustin Pending members'. It displays a table with one row of data:

#	Firstname	Lastname	Email	Email Status	Role	Status	Action
1	Andrei	Co	andreisabalburo@gmail.com	Verified	MEMBER	NOT ACCEPTED	...

A context menu is open over the first row, listing actions: Accept, Make Leader, Suspend, View profile, and Delete.

4. Once approved, you will receive a confirmation email and can log in to your account.

The screenshot shows a Gmail inbox with 366 messages. The message list on the left includes Mail, Chat, Meet, and Labels. The inbox message is from 'cyberyouthsc@gmail.com' with the subject 'Welcome to Cyberyouth'. The message content is as follows:

Welcome to Santa Cruz Parish Youth Family!

Hi, Yoj

We're thrilled to have you join our community of passionate young people committed to faith, fellowship, and service. Your presence brings new energy and ideas, and we can't wait to see the positive impact we'll create together. Welcome aboard, and here's to a journey filled with growth, friendship, and meaningful experiences!

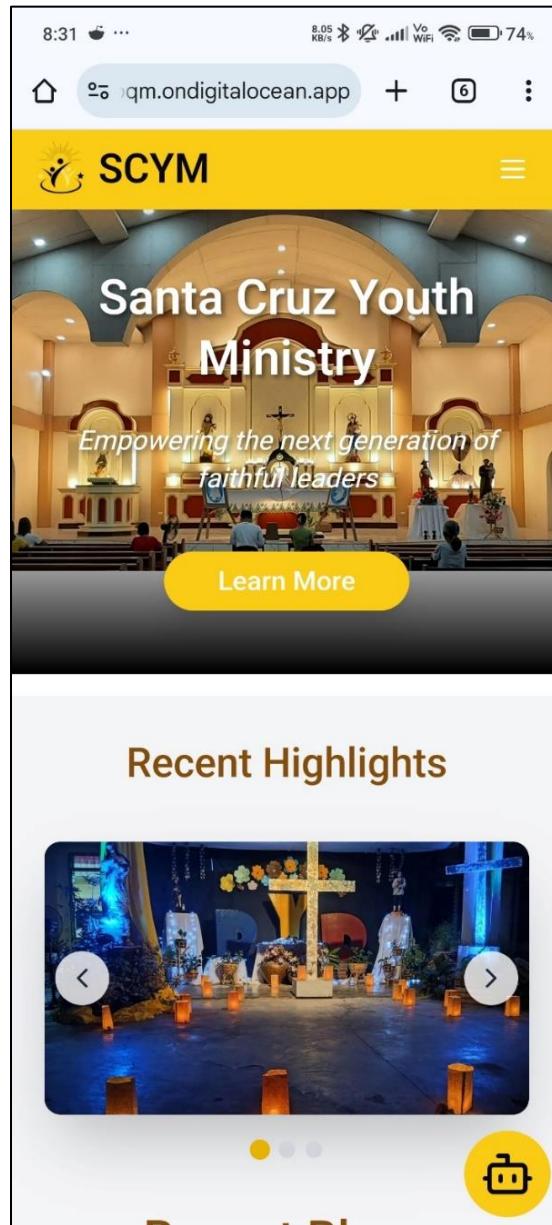
You can now log in to our website. Click the button.

Confirm

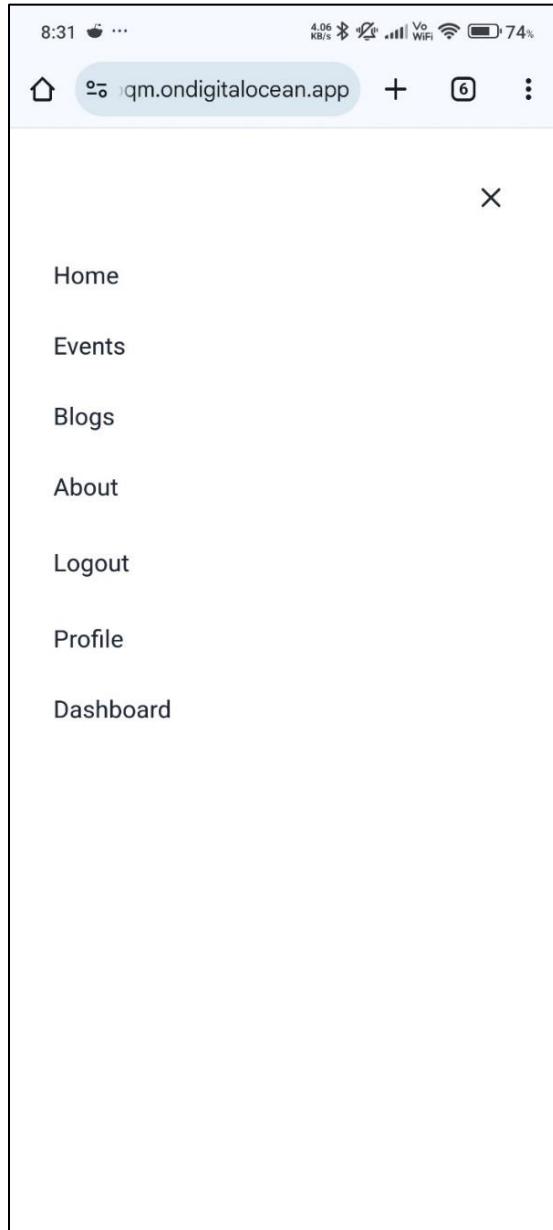
At the bottom of the message are 'Reply' and 'Forward' buttons.

C. Homepage

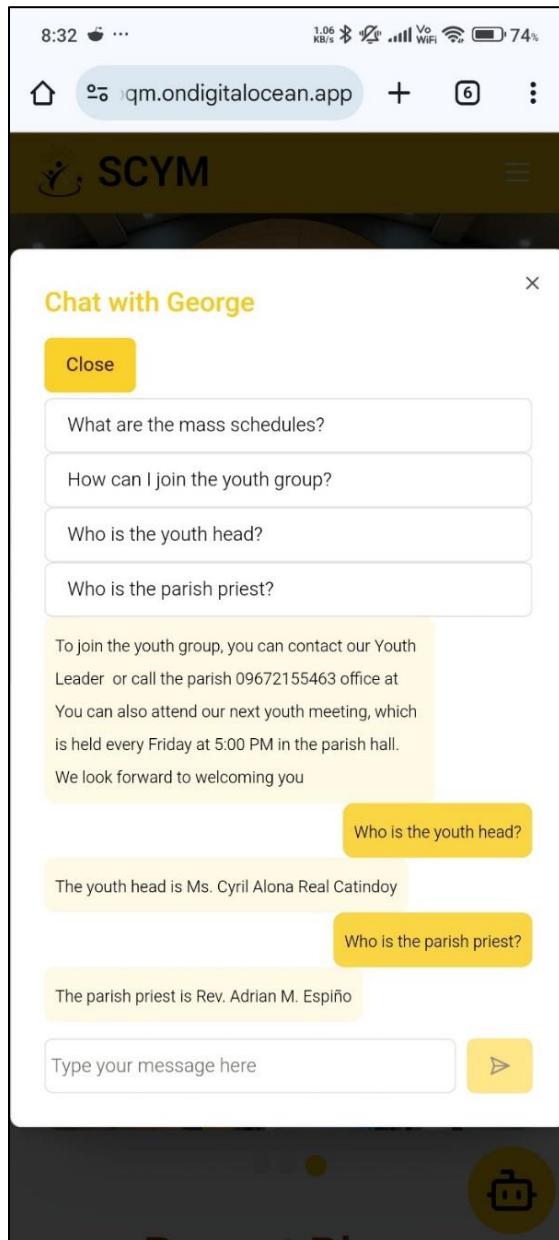
1. View the main page with the chatbot, recent blogs, and events.



2. Use the navigation bar to explore the Profile, Blog, Event, and About pages. Access Dashboard for Super Admin and Admin.



3. Interact with the chatbot for assistance or queries.

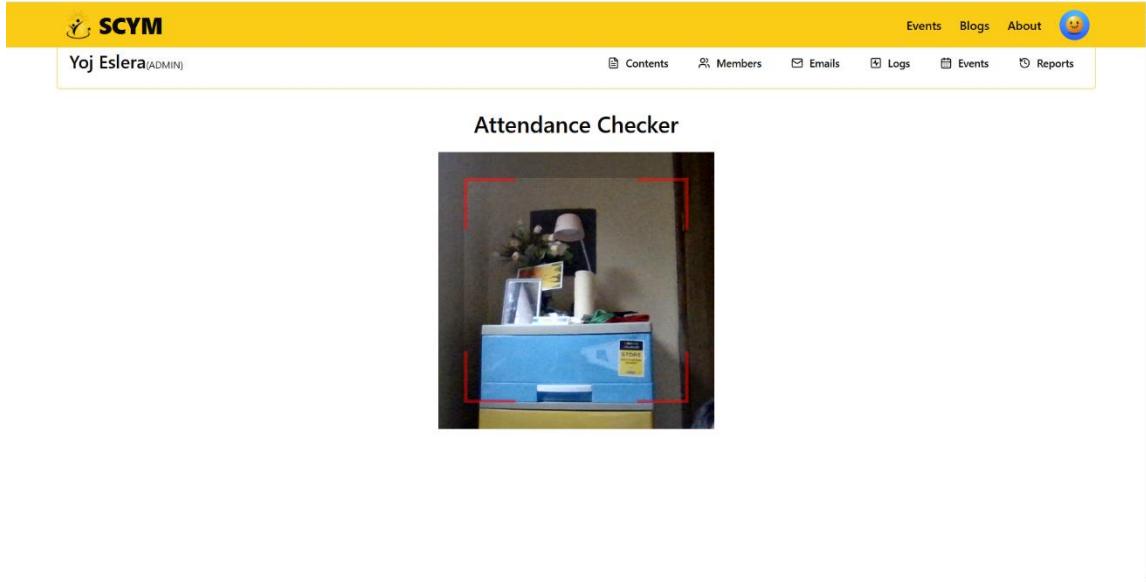


D. Super Admin Dashboard (Youth Director)

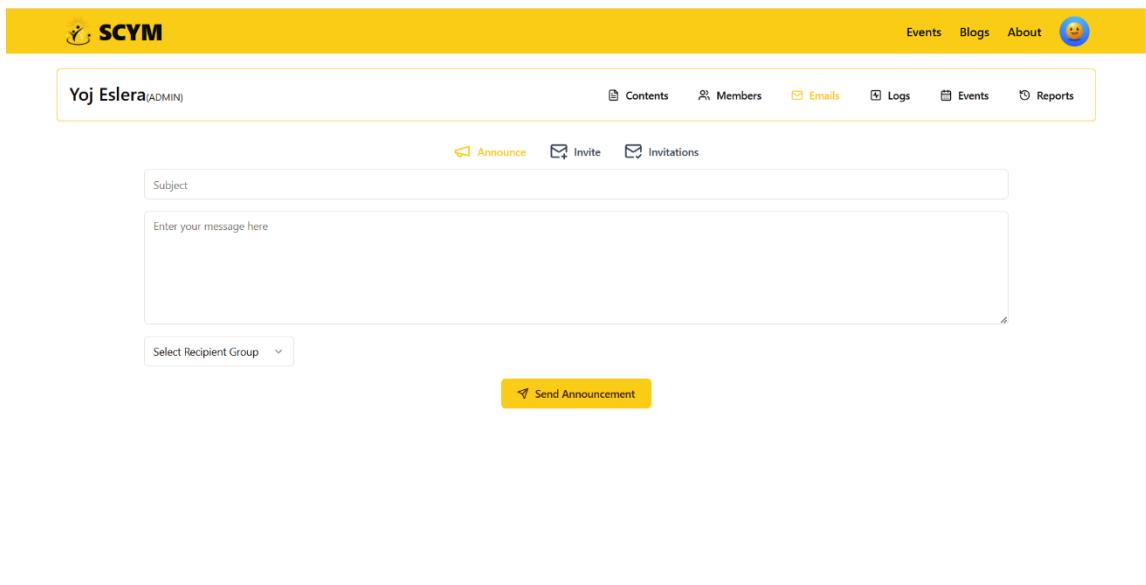
1. **Events Page:** Manage attendance by pressing the QR icon, add, and edit events.

The screenshot shows the SCYM Super Admin Dashboard with the title "Event Management". A modal window titled "Add New Event" is open, containing fields for "Event Title", "Event Description", "Start Time", "End Time", and "Location", along with a "Add Event" button. The main calendar view shows various events scheduled for January 2025, including "test" on Monday, "Mass" on Saturday the 5th, "Regular Mass" on Sunday the 12th, and "Special Offering" on Saturday the 22nd.

The screenshot shows the SCYM Super Admin Dashboard with the title "Event Management". A modal window titled "Add New Event" is open, containing fields for "Event Title", "Event Description", "Start Time", "End Time", and "Location", along with a "Add Event" button. Below the modal, a calendar for January 2025 is displayed, showing events like "test" on Monday, "Mass" on Saturday the 5th, "Regular Mass" on Sunday the 12th, and "First Friday Mass" on Friday the 3rd. To the right, event cards for "Regular Mass" (January 12, 2025 at 11:00 AM) and "Special Offering" (January 22, 2025 at 11:00 AM) are shown.



2. **Announcements:** Send invitations, announcements via email. You can view the invites confirmation the invitation is only applicable in meetings like on a specific group, like per barangay or to the leaders only. While the announcement has a feature that can send to everyone.



3. View Logs: Track system activities.

The screenshot shows the SCYM application interface. At the top, there's a yellow header bar with the SCYM logo and navigation links for Events, Blogs, About, and a user icon. Below the header, a sub-header bar shows the user 'Yoj Eslera (ADMIN)' and links for Contents, Members, Emails, Logs, Events, and Reports. The main content area is titled 'Audit Logs' and displays a table of log entries. The table has columns for Details/ID, User, Event, and Date. The data includes various events like 'EVENT_ADDED' for different offerings and comments, all performed by 'Yoj Eslera' or 'John Bocobo' on dates ranging from 1/3/2025 to 12/30/2024.

Details/ID	User	Event	Date
"Special Offering"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:18:06 AM
"Regular Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:16:39 AM
"First Friday Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:15:29 AM
"Mass"	Yoj Eslera	EVENT_ADDED	1/3/2025, 3:14:42 AM
16	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:24 AM
15	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:19 AM
14	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:10:13 AM
13	Yoj Eslera	ADDED_COMMENT	1/3/2025, 3:09:34 AM
"test"	John Bocobo	EVENT_ADDED	12/30/2024, 5:29:54 AM

4. Manage Members: Oversee members across all barangays.

The screenshot shows the SCYM application interface. At the top, there's a yellow header bar with the SCYM logo and navigation links for Events, Blogs, About, and a user icon. Below the header, a sub-header bar shows the user 'Yoj Eslera (ADMIN)' and links for Contents, Members, Emails, Logs, Events, and Reports. The main content area is titled 'Members' and displays a grid of barangay names and their respective member counts. A button labeled 'Disable Registration' is visible at the top left of the grid. The grid shows the following data:

Atipolo	63	Badiang	2	Batug	0
Caalonsohan	7	Hibunawon	4	Lapaz	0
Palanog	0	Pange	7	Parasan	4
San-Agustin	12	San-pedro	1	Santa-Cruz	17
Sari-sari	1	Villapaz	7		

<https://scym-6ubqm.ondigitalocean.app/dashboard/members>

5. Content Management:

- Add, edit, or delete posts.

Title	Author	Date Created	Description	Action
Synod on Synodality	Yoj Eslera	11/5/2024, 1:46:23 PM	The Synod on Synodality is a global init...	...
1st Parish Anniversary	Yoj Eslera	11/5/2024, 1:46:51 PM	This celebration marks a dual milestone
Holy Rosary Month Ce...	Yoj Eslera	11/5/2024, 1:47:15 PM	As the month of October, dedicated to th...	...
2nd Parish Summer Yo...	Yoj Eslera	11/5/2024, 1:47:37 PM	This youth camp brought together young m...	...
Agape Feast in Honor...	Yoj Eslera	11/5/2024, 1:48:00 PM	The Agape Feast of Our Lady of the Rosar...	...
Senior Sto. Niño Cel...	Yoj Eslera	11/5/2024, 1:48:22 PM	The Senior Sto. Niño Celebration is a jo...	...

- Review and handle reported comments (suspend accounts or delete flagged comments).

The screenshot shows a web application with a yellow header bar. The header contains the logo 'SCYM' and navigation links for 'Events', 'Blogs', 'About', and a user icon. Below the header, a user 'Yoj Eslera (ADMIN)' is logged in. A menu bar includes 'Contents', 'Members', 'Emails', 'Logs', 'Events', and 'Reports'. The main content area is titled 'Reported Comments' and displays a table with two rows of data. The columns are 'Comment', 'Report count', 'Commented By', and 'Action'. Both rows show the comment 'Fuck' with a report count of 2, commented by 'Yoj Cyril Eslera', and an 'Action' column with three dots (...).

6. You can view reports, and generate a pdf.

View Previews events in reports page.

The screenshot shows a web application with a yellow header bar. The header contains the logo 'SCYM' and navigation links for 'Events', 'Blogs', 'About', and a user icon. Below the header, a user 'Yoj Eslera (ADMIN)' is logged in. A menu bar includes 'Contents', 'Members', 'Emails', 'Logs', 'Events', and 'Reports'. The main content area is titled 'Previous Events' and displays a table with ten rows of data. The columns are 'Event', 'Attendance', and 'Date'. Each row has a 'View' link in the last column. The events listed are: Mass (3.17%, 11/10/2024), Test Event (1.59%, 11/11/2024), Testing (4.76%, 11/28/2024), TestingTesting (6.35%, 11/28/2024), Demo (0.00%, 11/30/2024), test (0.00%, 12/30/2024), Mass (0.00%, 01/04/2025), First Friday Mass (1.59%, 01/03/2025), and Regular Mass (1.59%, 01/12/2025).

You can check attendance records, review pre-attendance details, and generate a PDF for printing.

The screenshot shows the SCYM application interface. At the top, there is a yellow header bar with the logo 'SCYM' and navigation links for Events, Blogs, About, and a user icon. Below the header, the user 'Yoj Eslera (ADMIN)' is logged in. A toolbar at the top has buttons for Scanned and Confirmed. The main content area displays a 'Mass' event from November 10, 2024, at 02:00 PM to November 10, 2024, at 03:00 PM, located at Santa Cruz - Parish. Below the event details is a section titled 'Attendance' with a table showing two attendees: Elder Caaya and CYRIL ALONA CATINDOY.

Name	Barangay
Elder Caaya	San-Agustin
CYRIL ALONA CATINDOY	Santa-Cruz

The generated PDF provides a copy of the attendance record for printing as a hardcopy.

The screenshot shows a PDF document titled 'Attendance Report' for a 'Mass' event. The report includes the event details: Time: November 10, 2024 at 06:00 AM - November 10, 2024 at 07:00 AM, and Total Attendees: 2 / 63 or 3.17%. It lists the two attendees from the previous screenshot. The PDF is displayed in a dark-themed browser window.

Name	Barangay
Elder Caaya	San-Agustin
CYRIL ALONA CATINDOY	Santa-Cruz

Downloaded on: 1/10/2025

E. Admin Dashboard (Youth Leader)

- Similar functionality as the Youth Director but limited to managing members and activities within their assigned barangay.

The screenshot shows the SCYM Admin Dashboard. At the top, there's a yellow header bar with the SCYM logo and navigation links: Events, Blogs, About, and a user icon. Below the header, a sub-header bar shows the current user as 'Yoj Eslera (ADMIN)' and includes links for Contents, Members, Emails, Logs, Events, and Reports. The main content area is titled 'San-Agustin' and displays a table of member data. The table has columns for #, Firstname, Lastname, Email, Role, and Action. There are 6 rows of data:

#	Firstname	Lastname	Email	Role	Action
1	Jerwin	Gelig	diazjerwin0043@gmail.com	LEADER	...
2	LIZETH GWEN	CAAWA	caayalizeth@gmail.com	MEMBER	...
3	Kim Harvey	Gelig	kimharveygelig17@gmail.com	MEMBER	...
4	Uldarico	Albarido	echoalbarido2000@gmail.com	MEMBER	...
5	KENE CHARLYN	ADOR	adorkene@gmail.com	MEMBER	...
6	Kristel Anne	Arrojo	kristelannearrojo@gmail.com	MEMBER	...

F. User Dashboard (Youth Members)

- Edit your profile and download your unique QR ID.

The screenshot shows the SCYM User Dashboard for 'Yoj Eslera'. At the top, there's a yellow header bar with the SCYM logo and a menu icon. Below the header, a profile picture of a smiling emoji is displayed. The profile information includes the name 'Yoj Eslera' and the email 'yojcyril.eslara@evsu.edu.ph'. It also shows the age '22 | male'. A large QR code is centered in the profile area. At the bottom, there are two buttons: a yellow one with a download icon and a blue one with an edit icon.

2. Comment on blogs to provide feedback (comments are filtered for appropriateness).

The screenshot shows a blog post titled "A Meal Shared, A Community Strengthened". The post discusses the Agape Feast, noting its importance in sharing love, faith, and togetherness. Below the post is a comment section. A comment from "Yoj Eslera" is displayed, consisting of four asterisks ("****"). To the right of the comment area, there are "Comments" and "NEGATIVE" buttons, along with a reply icon and a timestamp of "1/10/2025, 11:13:13 AM".

Santa Cruz Youth Ministry
Building a vibrant community of young faithful leaders.

About Us Events Blogs

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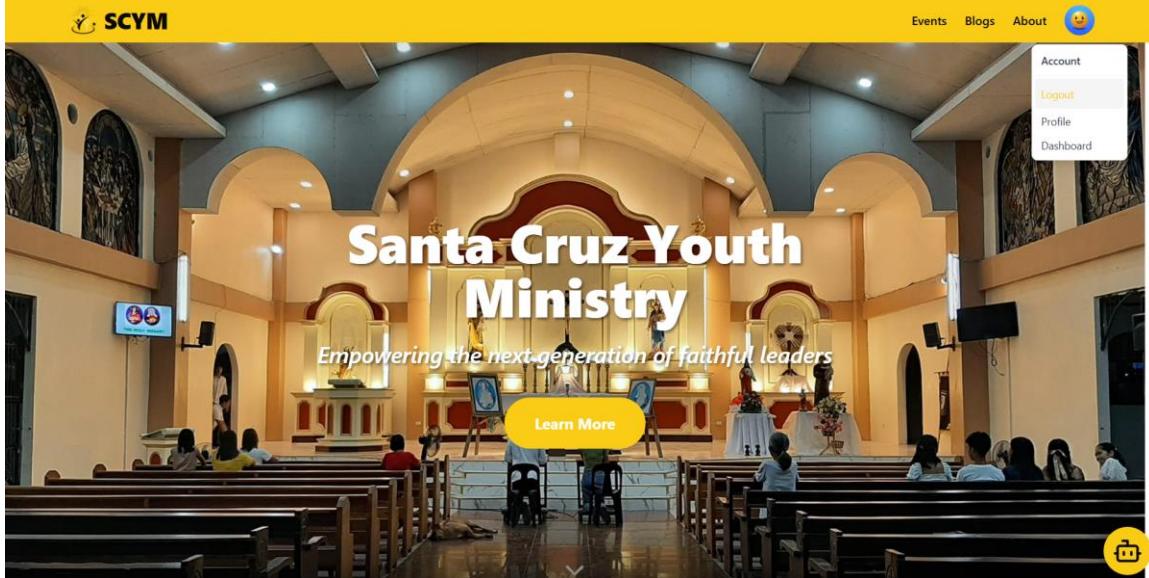
Comment added

3. You can confirm your pre-attendance to inform youth officials of your intention to participate in the event.

The screenshot shows the monthly calendar for January 2025. The days of the week are labeled Sun through Sat. Specific events are highlighted in yellow boxes:

- Sunday, Jan 5: Mass
- Monday, Jan 30: test
- Tuesday, Jan 31: First Friday Mass
- Wednesday, Jan 12: Regular Mass
- Wednesday, Jan 22: Special Offering
- Friday, Jan 3: First Friday Mass
- Saturday, Jan 13: Regular Mass
- Saturday, Jan 20: Regular Mass
- Saturday, Jan 22: Special Offering

4. You can log out by clicking on your profile in the upper-right corner on a desktop or selecting the hamburger menu on a mobile browser.



APPENDIX D

CERTIFICATE OF ACCEPTANCE



Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

COLLEGE OF ENGINEERING



CERTIFICATE OF ACCEPTANCE

THIS IS TO CERTIFY that the thesis entitled, "CYBER YOUTH A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION," a web-based system developed by John Doe V. Bocabo, Elder A. Caaya, Yoj Cyril D. Eslera, 4th year BS Information Technology students, has been tested, evaluated, and examined and therefore accepted by **CYRIL ALONA CATINDOY**.

Approved by:

CYRIL ALONA CATINDOY

President of Santa Cruz Parish
 Youth Organization



"Building Globally Competitive Professionals"
 ARCHBISHOP LINO R. GONZAGA AVENUE, TACLOBAN CITY, 6500 PHILIPPINES
 Email: ramon.lim@evsu.edu.ph | website: www.evsu.edu.ph

APPENDIX E

GRAMMARLY CERTIFICATE



Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

INFORMATION TECHNOLOGY DEPARTMENT

Certificate of Plagiarism Check

This is to certify that the Capstone Project entitled:

**CYBER YOUTH: A WEB-BASED INFORMATION SYSTEM WITH
 CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC
 YOUTH ORGANIZATION**

authored by:

John Doe V. Bocabo

Elder A. Caaya

Yoj Cyril D. Eslera

Bachelor of Science in Information Technology

has been subjected to a plagiarism check on December 1, 2024

with a generated result of **1%**

Certified true and correct:

Rustom D. Clement, MSIT

Capstone Project Adviser

Noted:

Jessie R. Paragas, DIT

Capstone Project Instructor



Report: CYBER YOUTH A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION

CYBER YOUTH A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION

by DON'T DELETE THE OTHER FILE ELSE VOID WARRANTY

General metrics

70,563	9,494	899	37 min 58 sec	1 hr 13 min
characters	words	sentences	reading time	speaking time

Score



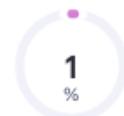
93

Writing Issues

231
Issues left**53**
Critical**178**
Advanced

This text scores better than 93%
of all texts checked by Grammarly

Plagiarism

1
%**103**
sources

1% of your text matches 103 sources on the web
or in archives of academic publications

APPENDIX F

SAMPLE SCREENSHOTS



Recent Blogs

Parish Youth Day
Parish Youth Day is a vibrant gathering designed to empower and inspire young members of the parish. Through engaging activities, prayer, an...

[Read more](#)

Parish Summer Youth Camp
This summer youth camp brought together young parishioners for an engaging day filled with faith, fellowship, and fun. Through various inter...

[Read more](#)

Senior Sto. Niño Celebration
The Senior Sto. Niño Celebration is a joyous occasion honoring the Child Jesus, Sto. Niño, a beloved symbol of faith, protection, and devot...

[Read more](#)

January 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
-----	-----	-----	-----	-----	-----	-----

The screenshot shows a list of previous events in a table format. The columns are labeled 'Event', 'Attendance', and 'Date'. Each event row includes a 'View' button.

Event	Attendance	Date	
Mass	3.17%	11/10/2024	View
Test Event	1.59%	11/11/2024	View
Testing	4.76%	11/28/2024	View
TestingTesting	6.35%	11/28/2024	View
Demo	0.00%	11/30/2024	View
test	0.00%	12/30/2024	View
Mass	0.00%	01/04/2025	View
First Friday Mass	1.59%	01/03/2025	View
Regular Mass	1.59%	01/12/2025	View

The screenshot shows details for a 'Mass' event. It includes the date range (November 10, 2024 at 02:00 PM - November 10, 2024 at 03:00 PM) and location (Santa Cruz - Parish). Below this, there is an 'Attendance' section showing 2 / 63 | 3.17% with a table of attendees.

Mass
November 10, 2024 at 02:00 PM - November 10, 2024 at 03:00 PM
Location: Santa Cruz - Parish

Attendance
2 / 63 | 3.17%

First Name	Last Name	Email	Barangay
Elder	Caaya	elderagres@gmail.com	San-Augustin
CYRIL ALONA	CATINDOY	alonacyrilreal@gmail.com	Santa-Cruz

The screenshot shows a PDF document titled 'Attendance Report' for a 'Mass' event. The report includes the time range (November 10, 2024 at 06:00 AM - November 10, 2024 at 07:00 AM), total attendees (2 / 63 or 3.17%), and a table of attendees with their names and barangays. The document is dated 1/10/2025.

Attendance Report
Mass
Time: November 10, 2024 at 06:00 AM - November 10, 2024 at 07:00 AM
Total Attendees: 2 / 63 or 3.17%

Name	Barangay
Elder Caaya	San-Augustin
CYRIL ALONA CATINDOY	Santa-Cruz

Downloaded on: 1/10/2025



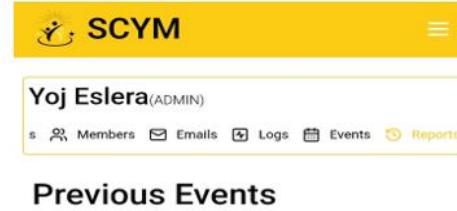
The screenshot shows the homepage of the SCYM website. At the top, there's a banner with the text "Santa Cruz Youth Ministry" and "Empowering the next generation of Faithful leaders". Below the banner is a yellow "Learn More" button. The main content area features a section titled "Recent Highlights" with a photo of a church altar decorated with flowers and candles. A camera icon in a yellow circle is located at the bottom right of this section.



This screenshot shows the homepage with a different banner: "Empowering the next generation of Faithful leaders". It includes a "Learn More" button and a "Recent Highlights" section with a photo of a group of people in a church setting. Below this is a "Recent Blogs" section with a photo of a church altar.



The screenshot shows the "Members" page. The header displays "Yoj Eslera (ADMIN)". Below it is a navigation bar with links for Contents, Members, Emails, Logs, and Events. The main content area shows a list of members under the heading "San-Agustin". It includes a table with columns for #, Firstname, Lastname, and Email, showing 12 members. A camera icon in a yellow circle is at the bottom right.



The screenshot shows the "Events" page. The header displays "Yoj Eslera (ADMIN)". Below it is a navigation bar with links for Members, Emails, Logs, Events, and Reports. The main content area shows a table of previous events with columns for Event, Attendance, Date, and View. The table lists various events like Mass, Test Event, Testing, Demo, test, and several entries starting with "First Friday".

The screenshot displays two main sections of the SCYM application:

Left Section (Mass Report):

- Header:** Shows the URL `qm.ondigitalocean.app`, a search bar with the text `un-daz`, and a menu icon.
- Title:** **Mass**
- Dates:** November 10, 2024 at 02:00 PM - November 10, 2024 at 03:00 PM
- Location:** Santa Cruz - Parish
- Attendance:** 2 / 63 | 3.17%

First Name	Last Name	Email
Elder	Caaya	elderagres@gmail.com
CYRIL ALONA	CATINDOY	alonacyrilreal@gmail.com

Right Section (Attendance Report):

- Title:** Attendance Report
- Section:** Mass
- Time:** November 10, 2024 at 06:00 AM - November 10, 2024 at 07:00 AM
- Total Attendees:** 2 / 63 or 3.17%
- Table:**

Name	Barangay
Elder Caaya	San Agustin
CYRIL ALONA CATINDOY	Santa Cruz

Downloaded on: 1/10/2025
- Actions:** Mobile view, Preview, Projection, Edit

APPENDIX G

EVALUATION RESULT

Functionality	Mean	Qualitative Description
1. The system provides all the necessary features (chatbot, event tracker, etc.).	4.68	Strongly Agree
2. The sentiment analysis effectively filters out inappropriate content.	4.58	Strongly Agree
3. The QR identification feature improves security for events.	4.80	Strongly Agree
Grand Mean	4.69	Strongly Agree

The web application scored a weighted mean of 4.69, or "Strongly Agree," showing that all required functions are effectively implemented.

Reliability	Mean	Qualitative Description
1. The system functions without crashes or unexpected errors.	4.56	Strongly Agree
2. The system provides consistent performance even during peak usage.	4.52	Strongly Agree
3. Encountering bugs or errors when using the system is rare.	4.52	Strongly Agree
Grand Mean	4.54	Strongly Agree

It achieved a reliability score of 4.54, or "Strongly Agree," proving that the web application operates dependably and consistently.

Usability	Mean	Qualitative Description
1. The system is easy to use and navigate.	4.80	Strongly Agree
2. The mobile-responsive design enhances accessibility across devices.	4.74	Strongly Agree
3. The chatbot is helpful and user-friendly.	4.70	Strongly Agree
Grand Mean	4.75	Strongly Agree

The usability score of 4.75, or "Strongly Agree," indicates that the web application is user-friendly and accessible.

Efficiency	Mean	Qualitative Description
1. The system responds quickly without significant lag.	4.58	Strongly Agree
2. The system performs efficiently when multiple users are accessing it simultaneously.	4.50	Strongly Agree
3. Features like event tracking and QR verification process efficiently.	4.72	Strongly Agree
Grand Mean	4.60	Strongly Agree

With a weighted mean of 4.60, or "Strongly Agree," the results show that the web application performs efficiently and systematically.

Maintainability	Mean	Qualitative Description
1. The system can be updated or modified easily to accommodate new requirements.	4.74	Strongly Agree
2. There is minimal downtime when updates are made.	4.60	Strongly Agree
3. The system is easy to update and maintain (based on your usage).	4.64	Strongly Agree
Grand Mean	4.66	Strongly Agree

The maintainability score of 4.66, or "Strongly Agree," confirms that the web application is easy to update and improve when needed

Portability	Mean	Qualitative Description
1. The system can be easily accessed on different devices (phones, tablets, etc.).	4.78	Strongly Agree
2. The system performs consistently across different operating systems.	4.72	Strongly Agree
Grand Mean	4.75	Strongly Agree

A portability score of 4.75, or "Strongly Agree," demonstrates that the web application can be seamlessly used in different environments or platforms.

APPENDIX H

LETTER OF REQUEST TO CONDUCT A PILOT TESTING



Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

COLLEGE OF ENGINEERING



October 22, 2024

Dear [Recipient's Name],

We are reaching out to you as a valued member of our community and a key stakeholder in our project.

Your expertise and experience will be invaluable as we continue to develop and refine our system.

We are grateful for your continued support and collaboration as we move forward.

Yours sincerely,

President of Santa Cruz Parish Youth Organization

CYRIL ALONA CATINDOY

Brgy. Santa Cruz Jaro, Leyte

The Cyber Youth Information Management System fulfills its objectives and serves its users well.

Dear Ma'am Cyril,

I hope this letter reaches you in excellent health and high spirits. We are thrilled to share some exciting news regarding the progress of our project—the completion of the

CYBER YOUTH: A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION

DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION. This achievement marks a significant milestone in our journey, and we want to express our deep gratitude for the continued support and valuable insights you have provided throughout the development process. Your input has been pivotal in helping us achieve this milestone.

As we move forward, we would like to formally invite you to participate in the upcoming testing phases of the system. Your participation will be crucial in refining the Cyber Youth Information Management System to ensure it meets the highest standards of functionality, usability, and efficiency. The alpha testing is currently scheduled for October 23 at the Sta. Cruz Parish. However, we are flexible with the dates and would be happy to adjust to your convenience, should a different time work better for you.

During these testing phases, your feedback will be invaluable in identifying any potential issues or areas of improvement. Our primary goal is to create a seamless and efficient



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Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

COLLEGE OF ENGINEERING



experience for all users of the system, and your insights will help us achieve that. We are committed to delivering a high-quality platform that effectively enhances communication, event tracking, and engagement for youth organizations. Your expert perspective will be instrumental in ensuring the system fulfills its objectives and serves its users well.

We deeply appreciate your continued collaboration and support as we enter this critical stage of development. Your involvement has been, and continues to be, a cornerstone of the project's success, and we are confident that your feedback will help us further refine and improve the system.

Sincerely,

YOF CYRIL D. ESLERA

JOHN DOE V. BOCAZO

ELDER A. CAAYA

We look forward to a positive response regarding this request.

Thank you sincerely, and may God bless you!

Noted:

RUSTOM D. CLEMENTE, MSIT
 Capstone Adviser

JESSIE R. PARAGAS, DIT
 Head, Information Technology
 Department



"Building Globally Competitive Professionals"

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APPENDIX I

LETTER TO STAKEHOLDER


**Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
Tacloban City**
 COLLEGE OF ENGINEERING


BAGONG PILIPINAS

November 3, 2024

CYRIL ALONA CATINDOY

President of Santa Cruz Parish Youth Organization
Brgy. Santa Cruz Jaro, Leyte

Dear Ms. Cyril,

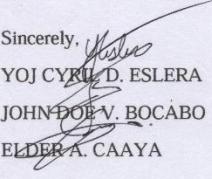
Greetings!

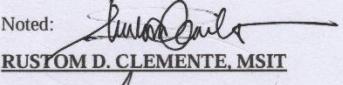
As a valued stakeholder in our capstone project, the undersigned would like to formally invite you to sit in and observe during the mock defense of our Capstone 2 titled "**CYBER YOUTH: A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION.**" The mock defense is scheduled to take place in **November 7, 2024** at 2:00PM – 3:00PM, at the Eastern Visayas State University-Main Campus Information Technology Building.

Your insights and feedback would be invaluable during this session, and we would greatly appreciate your presence as we present our developed system. Your expertise will provide a unique perspective that can help refine our final defense.

Please let us know if you are available to attend. We would be honored to have you join us and offer your feedback. Please feel free to reach out directly at **0938 037 4847** for any questions or further details regarding the mock defense.

Thank you for considering this invitation. We look forward to your response.

Sincerely,

YOJ CYRIL D. ESLERA
JOHN DOE V. BO CABO
ELDER A. CAAYA

Noted:

RUSTOM D. CLEMENTE, MSIT
 Capstone Adviser

JESSIE A. PARAGAS, DIT
 Head, Information Technology Department


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 Email: ramon.lim@evsu.edu.ph | website: www.evsu.edu.ph

APPENDIX J

INFORMED CONSENT FORM



Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
 Tacloban City

COLLEGE OF ENGINEERING



October 22, 2024

Dear Sir/Ma'am,

The fourth-year students of the **BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY** program at Eastern Visayas State University are required to complete a Capstone project as part of the **IT 433 – CAPSTONE PROJECT AND RESEARCH 2** course. The project focuses on developing "**CYBER YOUTH: A WEB-BASED INFORMATION SYSTEM WITH CHATBOT AND INFORMATION DISSEMINATION FOR CATHOLIC YOUTH ORGANIZATION**" to enhance communication and engagement within the youth organization. The system will incorporate sentiment analysis to filter out negative posts, integrate a chatbot and event tracker to assist with inquiries and updates, generate QR code-based identification for enhanced security, and provide a mobile-responsive interface for ease of use.

In this regard, we kindly request your cooperation in answering the survey below. Your participation is crucial as we gather data for the project. Rest assured that all information will be treated with the highest confidentiality and used solely for academic purposes.

Thank you, and may God bless you!

Sincerely,

YOGI CYRIL D. ESLERA

JOHN DOE V. BO CABO

ELDER A. CAAYA

BSIT Students



"Building Globally Competitive Professionals"

ARCHBISHOP LINO R. GONZAGA AVENUE, TACLOBAN CITY, 6500 PHILIPPINES
 Email: ramon.lim@evsu.edu.ph | website: www.evsu.edu.ph

APPENDIX K

DOCUMENTATIONS



Cyber Youth team presenting ideas to the Catholic Youth Organization about the project.



The team presenting the project's progress to the proponents and admins.



The team is presenting to the Parish Priest of Santa Cruz Parish.



The Cyber Youth team presents the finished system, invites the client to the mock defense, and gathers feedback for improvements.

CURRICULUM VITAE

YOJ CYRIL D. ESLERA

Address: Ponong, Carigara, Leyte

Contact No. 09380374837

E-mail Address: yojcyril.eslera@evsu.edu.ph



PERSONAL DATA

Birthdate: April 10, 2002

Age: 22

Sex: Male

Religion: Roman Catholic

Civil Status: Single

SKILLS

- PHP&JAVASCRIPT • ANDROID STUDIO
- DJANGO& PYTHON • TECHNICIAN

EDUCATIONAL BACKGROUND

TERTIARY EASTERN VISAYAS STATE UNIVERSITY

TACLOBAN CITY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

SECONDARY HOLY CROSS COLLEGE OF CARIGARA

CARIGARA, LEYTE

PRIMARY CASSIDY ELEMENTARY SCHOOL

CARIGARA, LEYTE

CURRICULUM VITAE

JOHN DOE V. BOCABO

Address: Majacob, Tarangnan, Samar

Contact No. 09672155463

E-mail Address: johndoebocabo@gmail.com



PERSONAL DATA

Birthdate: October 23, 2001

Age: 23

Sex: Male

Religion: Roman Catholic

Civil Status: Single

SKILLS

- WEB DEVELOPMENT
- GIT/GITHUB
- MySQL

EDUCATIONAL BACKGROUND

TERTIARY EASTERN VISAYAS STATE UNIVERSITY

TACLOBAN CITY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

SECONDARY MAJACOB INTEGRATED SCHOOL

MAJACOB TARANGNAN, SAMAR

PRIMARY MAJACOB INTEGRATED SCHOOL

MAJACOB TARANGNAN, SAMAR

CURRICULUM VITAE

ELDER A. CAAYA

Address: Brgy.San Agustin, Jaro, Leyte

Contact No. 09484750359

E-mail Address: elder.caaya@evsu.edu.ph



PERSONAL DATA

Birthdate: July 11, 2002

Age: 22

Sex: Male

Religion: Roman Catholic

Civil Status: Single

SKILLS

- HTML CSS
- VIDEOGRAPHY
- GRAPHIC DESIGN

EDUCATIONAL BACKGROUND

TERTIARY EASTERN VISAYAS STATE UNIVERSITY

TACLOBAN CITY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

SECONDARY GRANJA KALINAWAN NATIONAL HIGH SCHOOL

JARO, LEYTE

PRIMARY SAN AGUSTIN ELEMENTARY SCHOOL

BRGY.SAN AGUSTIN JARO, LEYTE