

**DEVELOPMENT OF WEB-BASED ONLINE INFORMATION  
MANAGEMENT SYSTEM WITH DATA ANALYTICS FOR METRO  
MAHARLIKA TAGAYTAY TRICYCLE OPERATORS AND DRIVERS  
ASSOCIATION**

**Angcaya, Edson M., Balboa, Mary Rose Ann G., Mahinay, Christian A.,  
Pavillo, Judilyn A., Robis, Jezryl Mae P.**

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**CHAPTER I**

**INTRODUCTION**

Information management systems refer to a software system that collates information and helps to form a database. It deals with technology, processes, and also humans. The association's important data will be stored in a single database, ensuring that members can have their information properly stored. This system will reduce the time required for information storage, generation, and management.

The Tricycle Operators and Drivers' Association (TODA) is the organization of tricycle operators and drivers in a given local government unit. Tricycles are the Filipino's true "last mile" transportation to get to work, the market, and school, as well as for funerals in the barangays. The Statista

Research Department (2022) reported that the number of registered tricycles was down to approximately four million in the Philippines in 2021.

Data can empower organizations across multiple sectors to improve their initiatives, processes, and innovations by providing powerful insight. A data dashboard can help a user understand an organization's valuable data by taking raw data from multiple sources and gathering it before presenting it with the help of data visualization as an optical representation of data, and it can take many forms such as graphs, charts, models, infographics, etc.

To commence the development process, the researchers conducted an interview with the president of Metro Maharlika Tagaytay Tricycle Operators and Drivers Association (MMTTODA) and found that their Association continues to keep their information using a spreadsheet. The president is responsible for maintaining an Excel spreadsheet and Word document containing information about members, officials, and monthly contribution payments. The secretary must perform manual calculations to locate members' data for generating certificates and reports, as well as to search for members' units or tricycles. The secretary is also responsible for managing officials, and overseeing monthly contribution fee payments. Unfortunately, members are unable to verify and check their monthly fee payments.

Currently, the MMTTODA does not have an online information management system that can possibly optimize the stated facts above. Hence, the researchers have opted to develop a web-based online information management system with data analytics for the Metro Maharlika Tagaytay

Tricycle Operators and Drivers Association. The system aims to improve their information management capabilities in managing the information of members, officials, monthly contribution fees, certificates and reports generation, database backup, and database restoration.

## **Objectives of the Study**

The main objective of the study is to develop a system called "Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association" to optimize the information management system of MMTTODA with the help of an online system.

Specifically, the study aims to:

1. identify all the requirements needed for data gathering through interviews with the president of the MMTTODA;
2. analyze the tools and equipment required for the development of the system;
3. design and develop the "Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association" that is capable of:
  - a. providing a system that manages the MMTTODA's information;
  - b. providing an account for the system administrator;
  - c. allowing the system administrator to manage and create accounts for members and the secretary;

- d. providing a forgot password option for forgotten or compromised passwords for members, secretary, and system administrator;
  - e. providing the system administrator with different graphical representations of data stored in the system;
  - f. allowing the secretary and a system administrator to manage officials, members, and monthly contribution fees;
  - g. generating and printing certificates and reports; and
  - h. enabling members to view their unit and personal information, as well as their monthly contribution fee records.
4. test the performance of the system through unit, integration, acceptance, performance, and system testing;
  5. evaluate the web-based system compliance with ISO 9126 standards; and
  6. prepare an implementation and deployment plan for the organization's utilization.

## Scope and Limitations of the Study

The study focuses on the “Development of Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association”. This study is intended for three (3) user levels of access, namely System Administrator, Secretary, and Members.

The **System Administrator** (MMTTODA President) is capable of accessing the system with the username and password provided by the researchers. In the event of a forgotten password, the System Administrator can recover it using email verification. The system administrator is responsible for creating accounts for the members and secretary, managing the members' records, officials, and members' monthly contribution fees. Moreover, it can generate overall monthly contribution fee reports and is also responsible for generating and printing master lists and certificates for the members. The system administrator is also capable of downloading system backups and restoring the database of the system.

The **Secretary** (MMTTODA Secretary) can access the system using the account provided by the system administrator and recover the password using email verification. The secretary can edit and view the members' records, view officials, print master lists and certificates for members, as well as manage and generate the members' overall monthly contribution fee records and reports. In addition, the secretary can manage and generate members' total monthly contribution fee records and reports, as well as view and update members' records, manage officials, and print master lists and certificates.

The **Members** (MMTTODA Members) are capable of accessing the system using the account provided by the system administrator. They can also recover their forgotten passwords through email verification. The members can view unit and personal information along with their monthly contribution fee records.

The system is composed of four (4) modules namely;

**Account Management Module** allows the system administrator to create accounts for the secretary and members. The module allows the secretary and members to access the system using the account provided by the system administrator. This module also allows the system administrator, secretary, and members to recover passwords using email verification.

**Record Management Module** allows the system administrator to manage, search, and view the secretary and members' records, manage officials, and print certificates for the members. The module also allows the secretary to edit, view, and search members' records, manage officials, and print certificates for members. Meanwhile, the members are allowed to view their records.

**Contribution Management Module** is responsible for managing records of the members' monthly contribution fees. Both the secretary and the system administrator are allowed to manage and view added and updated member contribution fee records. Members are allowed to access and view personal contribution fee records.

**Report Management Module** generates reports, allowing the system administrator and secretary to download and print the members' overall contribution fee monthly report.

However, the system has limitations; access to the system will be limited to the system administrator, secretary, and members of MMTTODA. The Secretary and members do not have the capability to register their accounts. Instead, they will need to approach the system administrator for registration. The system focuses on managing members' units and information, association officials, TODA-issued certificates, and the members' monthly contribution fee records. It also does not include a list of driver(s) under a member's line in their individual records. In addition, the members must visit the secretary or the system administrator to settle their monthly contribution fee payments and request certificates since the system does not process online payments. Lastly, the system is specifically designed for the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association and will require an internet connection for proper functionality.

## **Significance of the Study**

The study titled "Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association" is designed to improve the information management of MMTTODA with the help of an online information management system.

**Metro Maharlika Tagaytay Tricycle Operators and Drivers Association** is the main beneficiary of the system. The system can help the association optimize the management of members' information, officials, certificates, and the monthly contribution fee payments of members.

**System Administrator** will benefit from this study since the online information management system can improve information management within the association.

**Secretary** will benefit from this study since the system can optimize the procedure for managing officials and generating reports, certificates, member information, and monthly contribution payments.

**Members** will also benefit from this system as it allows the members to view the accuracy of their unit, their personal information, and their monthly contribution fee payments.

**Researchers** gained benefits from this study because they were able to enhance their skills and knowledge in terms of documentation, presentation, programming, and developing a system using PHP and MySQL. Additionally, the study likely provided them with opportunities to develop their self-confidence.

**Future researchers** can also benefit from this system, as they can use it as a future reference or basis for developing research related to online information management systems with data analytics.

## **Operational Definition of Terms**

To better understand the study, the following terms are defined operationally.

**Color Coding Scheme**– the color-coding scheme regulate the operation and passenger transport of units within the TODA area on specific days to avoid overcrowding in the terminal and ensure that all members earn. A sticker is attached to each member's unit indicating their assigned color coding.

**Contribution Fees** – the contribution fee (also known as “*butaw*”) refer to the fixed amount of money that all members are obligated to pay on a monthly basis. The payments collected are also used at the end of the year for internal expenses.

**Database Management** - refers to the actions a business takes to manipulate and control data to meet necessary conditions throughout the entire lifecycle.

**Member** – refers to an operator who owns one or more units/tricycles under the Tricycle Operators and Drivers Association.

**Secretary** - a person who is also in charge of managing the officials, members' information, certificates, reports, and monthly contribution fee of members.

**System Administrator** - a system administrator is an information technology professional who supports a multi-user computing environment and ensures continuous optimal performance of IT services and support systems.

**Tricycle Operators and Drivers Association** - organization of tricycle operators and drivers in a given local government unit.

**Unit** – in the context of the association, a “unit” refers to a tricycle.

**Web-based System** - a web-based system provides access to a software system using a computer or mobile device and an internet connection.

## Theoretical Framework

The Theoretical Framework is a collection of interrelated concepts that will guide the researchers in developing the study.

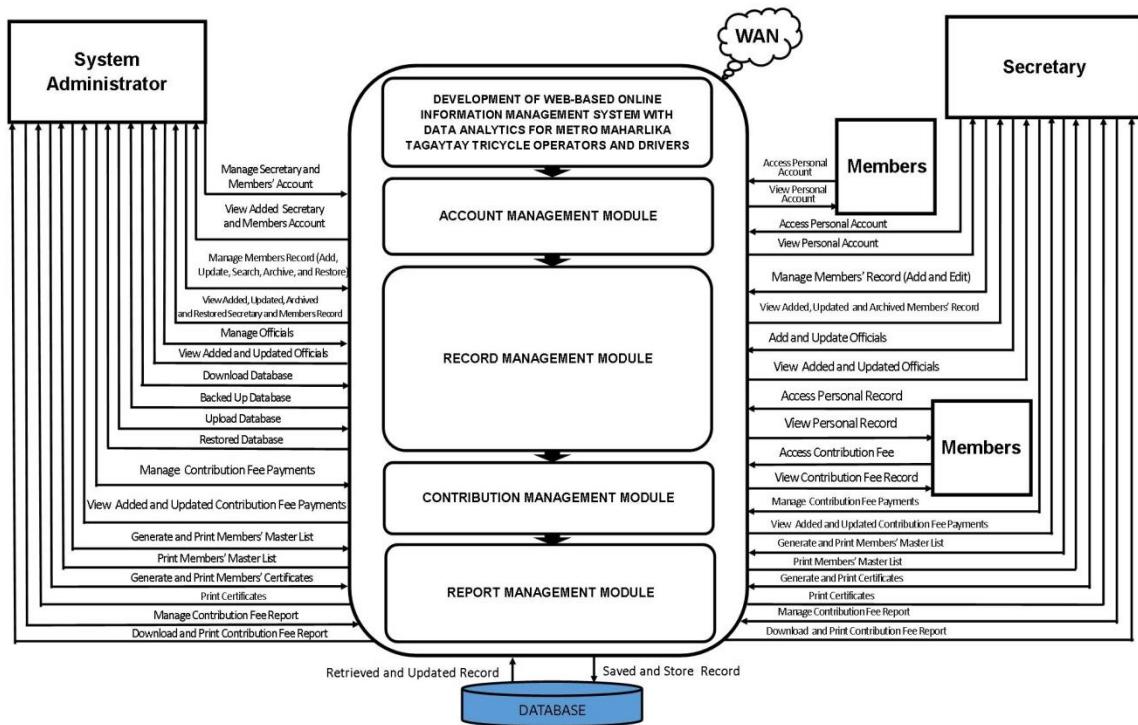


Figure 1. Theoretical Framework of Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association

*Figure 1 shows the Theoretical Framework of the Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association. The system consists of four (4) modules, namely Account Management Module, Record Management Module, Contribution Management Module, and Report Management Module.*

**The Account Management Module** enables the system administrator to manage the accounts of the secretary and members, as well as allowing the

secretary and members access to their accounts. The system administrator, secretary, and members can change a forgotten password.

**Record Management Module** allows the system administrator to manage members' records, archive and retrieve member records, manage and display officials, and restore and back up the database. The module allows the secretary to edit members' records and add and edit officials. The members are able to access their own units and personal information.

**Report Management Module** allows the system administrator and secretary to generate and print the members' master lists, certificates, and the members' contribution fee monthly payments report.

## Conceptual Model of the Study

Based on the previous concepts, theories, and findings of related literature, a conceptual model was developed as shown below.

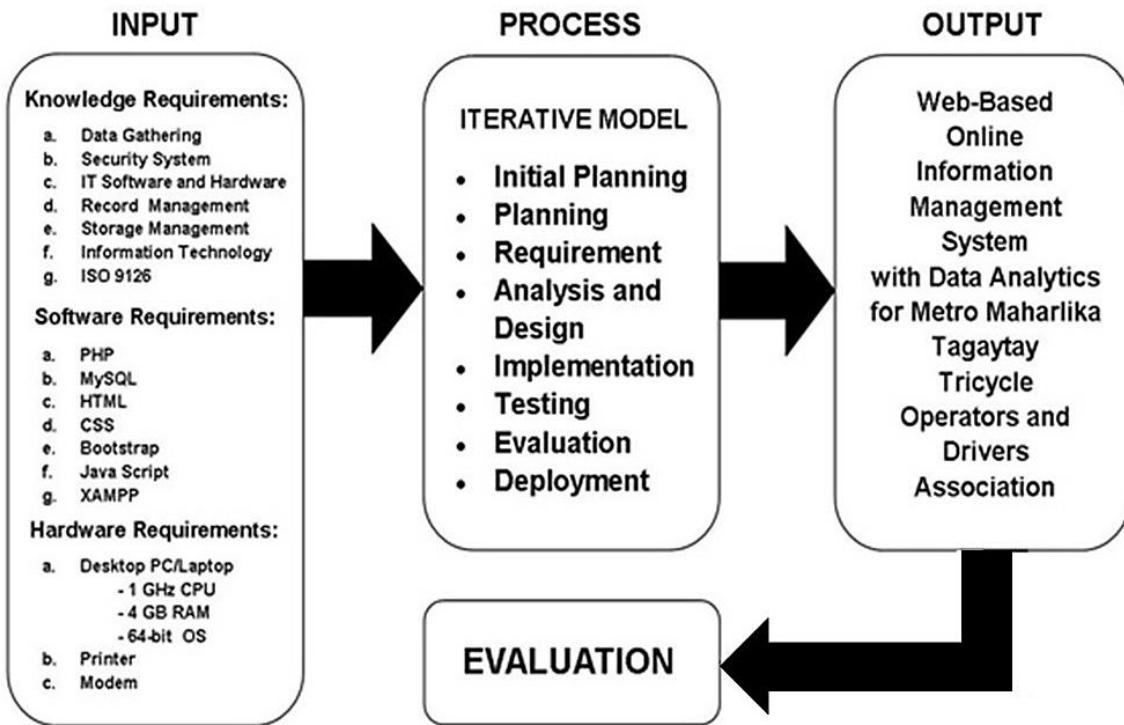


Figure 2. Conceptual Model of Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association

*Figure 2 shows the conceptual process of the system's development which has four (4) stages, namely input, process, output, and evaluation. These stages must be integrated with a common purpose to achieve the main objective of the study.*

**Input Stage.** The researchers mapped out the requirements for the system, which includes (3) three requirements: Knowledge Requirements, Software Requirements, and Hardware Requirements. Knowledge requirements include having an understanding of data collection, IT software and hardware,

record and storage management, the role of information technology in web development, and ISO 9126 standards to align the system to the standard qualifications for software development. The Software Requirements support the following platforms: (1) Notepad+, which is a text editor for editing a web-based system; (2) The PHP (hypertext Pre-processor), which is used to interact with the database, OTP sending, and provide the content of HTML pages to display on the screen; (3) MySQL, which creates a database for storing and manipulating data from the web-based; (4) HTML and CSS which is used for system design; (6) Bootstrap v4 framework for the front-end development of the web-based system which facilitates the development of responsive design; (7) JavaScript, which is used to interact directly to the web-based system without reloading the page constantly and to dynamically modify HTML and CSS to update the user interface and the back end of the web-based online system; (8) XAMPP, which is used to test the system on a local web server throughout the development process; and (9) Web Browser which is used as a gateway for testing, displaying, and interacting with the system via the internet. Finally, the system requires a desktop PC/laptop that has a 1 GHz CPU, 4GB RAM, and a 64-bit Operating System. The system needs a printer, and modem for internet connection.

**Process Stage.** The researchers followed the iterative methodology, including initial planning, requirements, analysis and design, implementation, testing, and evaluation, to develop a web-based management system. In the initial planning, the researchers mapped out the needed software and hardware for the system. For the initial planning phase, the researchers conducted a

survey and analyzed the system's scope, limitations, agenda, and purpose. The researchers also anticipated potential problems and solutions that might arise while developing the system and planned for corresponding solutions. The researchers analyzed the access levels and system modules, and gathered relevant studies and literature. The researchers also outlined the design interface of the system using PHP, HTML, CSS, Bootstrap, JavaScript, and MySQL for the database. Then, they proceeded with the system's implementation and performed quality tests and system performance evaluations considering feedback from respondents. Finally, the researchers facilitated the deployment of the developed system to the client.

**Output Stage.** It shows the developed system's interface and functionalities, including a visual representation of the system's capabilities.

**Evaluation Stage.** The researchers prepared evaluation forms based on the ISO9126 evaluation instrument for the 295 respondents, consisting of students and IT professionals/clients. This process also includes the final assessment of the system's overall performance in terms of functionality, reliability, usability, efficiency, maintainability, and portability.

## **CHAPTER II**

### **REVIEW OF RELATED LITERATURES AND STUDIES**

This chapter presents a review of related literature and studies underlying the complete deep research done by the researchers. This also presents the combination of the idea, theoretical, and conceptual framework of the study. The local and foreign literature of this study came from books, journals, articles, electronic materials such as PDFs or E-Book, and other existing thesis and dissertations.

#### **Related Literature**

##### **Coding**

The blog of Hubspot (2022) describes coding as writing computer code for servers and programs that make use of programming languages. They are referred to as "languages" as they contain vocabulary and grammatical rules for communicating with computers. They also contain unique commands, abbreviations, and punctuation that can only be decoded by tools and software.

##### **CSS**

As stated by MDN Plus (2022), a stylesheet language called Cascading Style Sheets (CSS) is used to describe how a document written in HTML or XML is presented (including XML dialects such as SVG, MathML, or XHTML). CSS describes how elements should be shown in various media, including speech, paper, screens, and other media. CSS (Cascading Style Sheets) is used to style and lay out web pages. For instance, you can use CSS to change the font, color,

size, and spacing of your text, divide it into numerous columns or add animations and other decorative elements.

## **Database**

In the article Search Data Management (2021), a database is a collection of data organized for quick access, management, and update. Data records or files containing information, including sales transactions, customer information, financial data, and product information, are often collected and stored in computer databases. Databases can be used to store, manage, and access any kind of data. They collect information on people, places, or things. It is gathered in one place so that it can be seen and examined. Databases can be thought of as an organized collection of information.

## **Data Analytics**

According to the blog of UNext Jigsaw (2022), data analytics assists businesses in utilizing the potential of past data and, as a result, identifying new opportunities that will help them plan future strategies. It helps in business growth by reducing risks, and costs, and making the right decisions.

## **Data Archiving**

As mentioned in the blog of Druva, data archiving is the practice of identifying data that is no longer active and moving it from production systems into long-term storage systems. Data from archives is stored so that it can always be retrieved.

## **Data vs. Information**

Based on The ECM Consultant (2021) blog, data is a collection of unprocessed, disorganized, unrelated, and uninterrupted facts that are utilized to create information following analysis. On the other hand, data only becomes information when it has been processed, analyzed, and given context to make it valuable. Data is gathered using a variety of techniques, such as surveys, research, and observations. On the other hand, information is acquired after the data has been examined and processed.

## **HTML**

In the blog of Hubspot (2022), HTML, or Hypertext Markup Language, is the core language of the World Wide Web. It was originally designed as a language for semantically describing scientific documents, but has since been modified to describe the basic structure of web pages and online applications. For instance, HTML can be used to specify which parts of a document are titles, lists, and images. Additionally, it can be used to italicize fonts, insert images, hyperlink words, and more.

## **Information Management System**

In the article Indeed (2021), it is stated that information plays a significant role in every business' everyday activity as it helps to inform decisions that could result in sustainability. As a result, firms invest a lot of resources in processing information through information management systems. Understanding these systems will help you to make effective use of them to improve various workplace operations.

## **ISO 9126**

According to GeeksforGeeks (2022) article, ISO/IEC 9126 is an international standard proposed to make sure ‘quality of all software-intensive products’ which includes a system like safety-critical where in case of failure of software lives will be in jeopardy.

## **JavaScript**

In the GeeksforGeeks (2022) article, JavaScript is the most widely used lightweight, interpreted, and compiled programming language in the world. It is often referred to as the web page scripting language. It is widely used in non-browser situations and is well known for web page building. Both client-side and server-side development can be done with JavaScript.

## **MySQL**

As stated on the website of Aiven (2022), MySQL is an open-source relational database management system (DBMS). It has a thriving community surrounding it and is developed, supported, and delivered by Oracle Corporation. The most widely used relational database management system is MySQL, which can be used for dynamic websites, mission-critical apps, and embedded databases in software, hardware, and appliances.

## **Notepad++**

As stated by SourceForge (2022), Notepad++ is a source code editor that is free to use and is available in various languages. The Scintilla editing component serves as the foundation for the source code editor, which is likewise written in C++. Several features, like autosaving, line bookmarking, simultaneous

editing, a tabbed document interface, and many more, are available in Notepad++.

## **PHP**

Based on the online course of FreeCodeCamp (2021), PHP is an open-source server-side scripting language that many developers use for web development. The abbreviation PHP initially stood for Personal Homepage. It now stands for Hypertext Preprocessor. PHP is mostly used to create web servers. It can run on the command line as well as in the browser. Therefore, you can display the code output in the terminal if you don't feel like doing so in the browser.

## **Programming Language**

The blog Study.com (2022) described programming language as a set of instructions that can be used to communicate with and control a computer. Websites, apps, operating systems, spacecraft control, and analysis of the data are all done using these languages. Programming languages are necessary because computers can't understand English. The use of programming languages fills in this gap by assisting programmers in converting their instructions into machine-readable commands that the computer can follow and carry out.

## **RDBMS**

As stated by Intellipaat (2022), RDBMS stands for Relational Database Management System. It is a data model-based information management system.

Systems like SQL Server, Oracle, MySQL, MariaDB, and SQLite are examples of RDBMS.

### **Web-Based System**

In the blog of Aezion, a web-based system is an application that can be accessed via HTTP. The term "web-based" refers to applications that run in a web browser. However, it can also be used to describe applications that have only a small portion of the solution loaded on the client's PC. A web-based system's host server could be a local server or one accessible via the internet.

### **Web Browser**

According to the Surfshark (2022) blog, a web browser is a piece of software that enables you to access the internet. It displays websites on your screen and allows you to interact with them by entering text and clicking on links. Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge are a few of the various internet browsers.

### **Web Hosting**

As stated in the article in Hostinger Tutorial (2022), web hosting is an online service that makes your website's content accessible on the internet. When you purchase a hosting plan, you are renting space on a physical server to store all the website's files and data. Web hosts provide the hosting technology and resources required for the effective and secure operation of your website. They are responsible for keeping the server up and running, implementing security measures, and ensuring that data such as texts, photos, and other files are transferred successfully to the visitors' browsers.

## XAMPP

According to the blog of Undsgn (2018), XAMPP is an abbreviation for cross-platform, Apache, MySQL, PHP, and Perl, and it allows you to build WordPress sites offline on a local web server on your computer. This easy and lightweight solution is "cross-platform" in that it runs on Windows, Linux, and Mac.

## Related Studies

### Foreign Studies

#### **Web Based Student Information Management System (2013)**

As stated by Bharamagoudar | Geeta | Totad (2013), SIMS (Student Information Management System) is a simple interface for maintaining student information. It can be used by educational institutes or colleges to easily maintain student records. Both the creation and management of accurate, up-to-date information about a student's academic career are important in both universities and colleges. Student information systems handle all types of student information: academic reports, college information, course information, curriculum, batch information, placement information, and other resource information. It tracks all of a student's details from day one to the end of the course, which can be used for all reporting purposes; tracking of attendance; progress in the course; completed semesters, years; coming semester year curriculum details; exam details; project or any other assignment details; final exam result; and all of this will be available through a secure, online interface embedded in the college's website. It will also include faculty information, batch execution information, student information in all

aspects, and the college administration's various academic notifications to staff and students. It also allows us to explore all of the activities that are taking place within the college. Various reports and queries can be generated based on a wide range of options related to students, batches, courses, faculty, exams, semesters, certifications, and even the entire college.

### **Development of a Web-Based Information System for Material Inventory Control: The Case of an Automotive Company (2016)**

In accord with Renjana Setyoandara Wibisono | Tanika D Sofianti | & Setijo A Wibowo (2016), inventory control entails preventing the flow of goods to meet demand. The materials may come from direct or indirect sources. The materials that cannot be computed using the material bill are known as indirect materials. Indirect materials require safety stocks to ensure that requirements are always met, which means that their amounts must be controlled and observed. Each department must manage its roles and share information to control the movement of the materials. PT XYZ is an automotive assembly company; the company needs a solution to manage the inbound and outward flow of indirect materials as well as inventory. This study aims to develop a web-based tool for sharing information across the departments of planning, production, and logistics. In developing and implementing the program itself, the RUP methodology is used to guide the research with four phases and activities that support the research. As a result, the program was successful in meeting the needs of the users. The program displays real-time information for material levels as well as inbound and outbound material flows for the user to monitor.

## **Web Based Student Information Management System in Universities: Experiences from Mzuzu University (2018)**

As stated by Symon Lubanga | Winner Chawinga | Felix Majawa | Sellina Kapondera (2018), as a result of the expansion of ICTs and their uses, such as web-based student information systems, universities all over the world have gone through new paradigms in how they handle and manage student information over the past few decades. With the implementation of systems like the Online Student Information System (OSIS) in educational institutions, it is now possible to quickly access and follow all student records through the use of the internet. While the advantages of OSIS appear to be acknowledged, it has been difficult for most African colleges to fully transition to digital operations because of poor ICT infrastructures that seem to be common in the region. A social survey was conducted in Malawi to evaluate the Mzuzu University Student Online Management System (SOMS) from the perspective of students. The study applied the concepts of both qualitative and quantitative research approaches. Questions and follow-up interviews were the major techniques used for data gathering. The Director of ICT Services at Mzuzu University and third-year students in the Faculty of Information Science and Communications made up the study population. The Microsoft Excel Package was used to evaluate and report the quantitative data that was collected. Data gathered through interviews was analyzed using the thematic approach. According to the study, Mzuzu University SOMS offers online registration and admissions as its primary service, with other offerings including student profiles, finances, and access to exam results online. The system is beneficial to students because it has reduced the amount of time

required to complete registration for each new semester. When using the system, students encountered the following significant difficulties: high internet data bundle and fee costs; lack of frequent system updates; and expensive password recovery costs as more than 656 students used the system at once. The survey claims that the university, through the ICT Directorate, takes into account resolving the many problems preventing the student population from using the system effectively.

#### **Development of Web-Based Information System for Universitas Negeri Jakarta (2019)**

Based on Prasetyo Wibowo Yunanto | Diat Nurhidayat | Rimulyo Wicaksono (2019), this study aims to develop a web-based Universitas Negeri Jakarta alumni data information system that can be accessed from anywhere. UNJ's alumni information system website was created using Object-oriented Programming (OOP) and the Unified Modeling Language (UML) as a model. The study was conducted with the waterfall method, which involved several stages, including needs analysis, system planning, and system design. In this study, two phases of testing were carried out: feasibility testing and usability testing, with the latter, carried out after the website was completed and tested using a questionnaire as a research instrument. The research questionnaire that was distributed contained 18 questions arranged into 5 usability variables. Based on data processing, the results from the five usability characteristics utilized in the survey show that each of the percentage values for usability is above 80%. (Learnability, Efficiency, Memorability, Errors, and Satisfaction).

### **Implementation of a Web-Based Data Archival Management System (2020)**

Based on Emmanuel Mkpojiogu | Gerard Efe Akusu | Azham Hussain | & Wahidah Hashim (2020), this research evaluated the deployment of a web-based data archival management system. Important and well-informed decisions are made based on the information that is available to both individuals and organizations. Since information is important, it is necessary to gather and manage it effectively so that it may be easily retrieved when needed. But up until now, sorting, storing, searching for, retrieving, and shifting files have all been done manually and on paper, which is inefficient, tiresome, and time-consuming. To address the difficulties and complexities associated with the manual way of archiving and managing information in the institution, this research implements a data archival and management system at Veritas University, Abuja.

### **The Development of Website on Management Information System for E-Commerce and Services (2020)**

As stated by Ahmad Tri Hidayat | Andi Muhammad Dirham Dewantara | & Shoffan Saifullah (2020), the sales system is currently overloaded. Manual selling is replaced with electronic selling, which is still not ideal (e-commerce). A digital platform is required for system development. This platform must be capable of performing all tasks that were previously completed (manually), including document collection, transaction recording, and reporting. In addition, the e-commerce platform may help and perform better during the sales process by verifying inventory items, transaction data, and services. Additionally, this optimization enables the delivery of services to clients in a precise and timely manner. A management information system idea is necessary to operate e-

commerce and provide services with integrated data that may be saved in a development database. This website building process is necessary for this prototype concept. The method is waterfall-based. The Hypertext Preprocessor (PHP) computer language and the MySQL database are used in website design. Entity-relationship diagrams (ERD) and data flow diagrams are two ideas used in the design model (DFD). As a result of the tests that were done, a website and e-commerce services were created that consumers and e-commerce organizers could approve of. Blackbox and Whitebox testing are employed in system testing, and the outcomes of both can be utilized to create e-commerce websites and services. The website can help officers with service and online shopping as well as make it simpler for them to identify the target and service status.

### **Garage Management Information System for Addis Ababa Police Commission (2021)**

As stated by Moges | Bezu (2021), a web-based management information system allows for the integration and optimization of various business processes, which leads to the improvement of an organization's functional processes. The main goal of this project was to create a web-based information management system to address the existing challenges of the Addis Ababa Police Commission's manual garage management system. The necessary data was gathered for this purpose through interviews, questionnaires, direct observation, document reviews, and origination reports. A quantitative and qualitative analysis was performed on the collected data, followed by testing and interpretation. As a result, sufficient evidence is found to support the stated problem that hampered the proper and smooth functional processes of the garage information

management systems. The developed web-based information management system can relieve the existing manual and tedious work of the garage system, thereby improving the overall business process functions of the Addis Ababa Police Commission.

### **A Web-Based Alumni Database Management System (2021)**

As stated by Ezinwa Charity Nkemdirim (2021), the objective of this study is to develop a system that will provide a standardized format for data storage and alumni tracking. It also controls the time-consuming accounting and billing tasks associated with the management of the association's membership. This work outlines the Alumni Association's system requirements analysis and design methodology. This system benefits from the aforementioned alumni and database administration and service. This work's design and development are based on a relational database for data collection from alumni. The manual nature of the current system makes work extremely slow and time-consuming. The proposed system is a computerized system, but it is maintained in centralized databases, so it is a very fast process. The system was developed with Notepad++, PHP as the server-side client, and MySQL for database management. The system also used Hyper Text Markup Language (HTML) as a scripting language, integrated with JavaScript. The system was designed using Cascading Style Sheets (CSS). The first phase of this project included conducting a literature review. The second phase is code development and programming for the client and administrator sides. The third phase is installation and testing on a real system, and the final phase is reporting writing.

## **Development of a Web-Based Financial Information System for Independent Educational Accreditation Institutions (2021)**

As stated by Ari Kurniawan | Suryanti | Luthfiyah Nurlaela | Nanik Indahwati | Loggar Bhilawa | & Dodik Arwin Dermawan (2021), accreditation of study programs is a periodic assessment of the governance of education and teaching in a study program at a university. It was carried out by LAM (Independent Accreditation Institution) under the supervision of BAN-PT (National Accreditation Board for Higher Education) by the Minister of Education and Culture's Regulation No. 5 of 2020 concerning the accreditation of study programs and universities, article 1, point 4. The education science-based study program is organized by the Independent Educational Accreditation Institution (LAMDIK), and 500 study programs must be accredited with different implementation periods each year. With LAMDIK's increased responsibility comes the need for a financial information system to assist users in managing finances for both the organization's budget system and accreditation activities. SisKeu is LAMDIK's financial information system, which was built on the website and is integrated with LAMDIK information. SisKeu has two major features in connection with the development and implementation of the Waterfall method using the programming language PHP framework Laravel and MySQL database, namely budgeting for the operations of the LAMDIK organization and financial management in the accreditation process.

## **Web-Based Information Management System for Educational Institutions in Riverine Areas (2022)**

As stated by Roseline U Paul | Njideka N Mbeledogu | Belonwu T Sunday | Mbonu C Emmanuel | ChukwuNonso Nwokoye (2022), the educational achievement of students from similar socioeconomic backgrounds varies by region of the country. Institutions in riverine areas, such as Anambra West Local Government Areas in Anambra State, face low academic teaching and learning because their surroundings are vulnerable to disasters such as floods. Existing teaching and learning approaches, on the other hand, do not account for the negative effects of the floods, such as lost teaching and learning resources, school absenteeism, and so on. As a result, the study proposed a Web-based Information Management System to address these concerns while also improving teaching and learning. The Object-Oriented Analysis and Design Methodology were used for system analysis and implementation. The application was built in PHP 7, with MySQL serving as the database management system. Once accepted, the technology would provide an online platform for continuous learning and academic achievement enhancement for students.

## **Local Studies**

### **Mobile Web-Based Student Integrated Information System (2015)**

As stated by Maria Cecilia G. Cantos | Lorena W. Rabago | & Bartlome T. Tanguilig (2015), this study provides a conducive and structured information exchange environment for students of the College of Computer Studies at Manuel S. Enverga University Foundation in Lucena City, Philippines. The

system was developed to help students check their academic results at the end of each semester, self-enroll, and manage their academic status, which can be viewed on their mobile phones. This system would also assist the dean in predicting how many sections would be created for the following semester. The Hill Climbing Algorithm search technique was used by the researchers for the system, specifically in creating self-enrollment and finding the best set of courses to fit the class schedule, as well as in projecting the number of sections to be created for the next semester. For system development, Rapid Application Development (RAD) was used, with PHP as the programming language and MySQL as the database. Before deploying the system to the internet, it was thoroughly tested. The procedure was carried out on various processors, operating systems, and mobile device platforms. The system was evaluated by 67 students from the Manuel S. Enverga University Foundation's College of Computer Studies in Lucena City, Philippines. The researchers used a Likert-modified scale questionnaire based on ISO 9126 to assess the system's acceptability in terms of functionality, reliability, usability, efficiency, maintainability, and portability. A purposive-sampling scheme was used to select respondents using a non-probability sampling method. The prototype evaluation resulted in a general weighted mean of 4.44, indicating that respondents strongly agreed that the developed system was acceptable.

**The Development of Online Student Information System (OSIS) for City College of Tagaytay. Research Study (2016)**

As stated by Rick Jason L. Gonzales (2016), this study was conducted to develop an Online Student Information System for the City College of Tagaytay, an institution run and managed by the Tagaytay City government. It provides free higher education. Developing an Online Student Information System for CCT will assist the school in keeping up with other prestigious schools and universities that have already embraced this technology. It will also boost the school's reputation and students' confidence in having the same technology as other prestigious universities and colleges. The Online Student Information System will allow students to access their records at any time and from any location.

**Computerized Record Management System of one National High School in the Philippines (2017)**

As stated by Kurt Phillip P. Danlog | Elinita C. Rebujo | Punnybhel A. De Guzman | Krelyssa Irish S. Arrieta | Baden Darwin Carranza (2017), the Computerized Record Management System is intended to provide efficient and accurate record recording, maintain and secure student records, and allow for easy retrieval of student records to reduce staff workload. This study, titled "Computerized Record Management System," was created to handle the storage, maintenance, and retrieval of student information. The processes involved in Quetegan National High School's current student record management include the following: the registration process, sectioning, and grade generation. Unorganized and difficult searching and updating records, as well as unsecured files, are among the issues encountered in current record management. The

proposed Computerized Record Management System has the following features: registration, computerized record filling, and automated report generation. Password security for the server and client accessing the system would be appropriate security measures in the proposed Computerized Record Management System. QNHS's current record management processes are still manual and paper-based. Registration, computerized record filling, and automated report generation are all features that would be appropriate for the proposed Computerized Record Management System. Access restrictions and computer physical security would be appropriate security measures in the proposed Computerized Record Management System.

#### **Barangay Management Information System (BMIS) for Cities and Municipalities in the Philippines (2018)**

As stated by John Kevin P. Imus | Elmer D. Magleo | Mary Angelica A. Soriano | & Romulo L. Olalia, Jr (2018), the purpose of the study is to find a solution to a problem that has arisen in a barangay. The aim was to implement a management information system to aid in the resolution of the problem. This paper describes an efficient and effective method for recording and managing information required by each barangay. The Barangay Management Information System (BMIS) is a program that records and manages information while also sending documents from the barangay hall to the city hall.

#### **Web-Based Barangay Information System for Malita, Davao Occidental (2018)**

As stated by Iteit Spamast-Malita (2018), the study was conducted in thirty (30) barangays in Malita, Davao Occidental. Furthermore, it was developed to

automate the management of barangay households, commodities, and population; populate barangay data that can be viewed on the municipal webpage to monitor the increase and decrease of households, commodities, and population for immediate action; and implement commodity geotagging for barangays.

### **Development of Management Information System for the Senior Citizen's Office in Tagaytay City (2019)**

As stated by Dominic S. Baybay | Romelyn C. Dela Cruz, Mateo D. Derla | Von Aldreicht O. Mojica | & Pauline Mae M. Pangilinan (2019), the researcher developed the Management Information System for the Senior Citizen Office in Tagaytay City, which allows the staff of the Office of Senior Citizens Affairs to manage information about members and approve or deny incoming applications to become senior citizens. The system interface design provides all system functions by using Notepad++ as a cross-platform source code editor, PHP as a programming language, and XAMPP/MySQL as the backend database.

The developed system is made up of five modules: account management, record management, report module, search module, and activity logs module. Account management is a module in which the system administrator can add users and edit their accounts, including activation and deactivation. The records of the members are kept in the record management module. The system's search capability is contained in the Report module. The activity logs module stores the system's operations and actions.

The researchers collected and analyzed the system's performance using a survey questionnaire based on ISO 9126. This study included 207 participants,

including 17 professionals/CSIT instructors and 2 clients from the Office of Senior Citizen Affairs. The questionnaire is divided into six sections: functionality, reliability, usability, efficiency, maintainability, and portability. The developed system has an overall rating of 4.00 with a descriptive rating of "Very Good," indicating that the system fully meets and far exceeds several expectations.

**Development of Record Keeping System and Monitoring of Coffee Farmers for Amadeo Farmers Information and Technology Services Centre (2019)**

As stated by Henry James A. Macawile | Arnel U. Delos Angeles | Renz Ivan D. Gloriani | Christian C. Oareza | Renz D. Rozul (2019), the researcher developed the "Record Keeping System and Monitoring of Coffee Farmers for Amadeo Farmers Information and Technology Services Centre," which is capable of recording coffee farmers' and coffee plants' information, providing four (4) accounts for intended users, namely system administrator, administrator, unit head, and staff, and printing reports such as barangay reports, coffee plant disease reports, and annual reports. The system's interface design provides all of the system's functions by using Notepad++ as a code editor platform, PHP as a programming language, and XAMPP/MySQL as the backend database.

The developed system is composed of four modules: user accounts, content management, monitoring management, and report generation. The user account module stores the intended users who can access the system, which are the system administrator, administrator, unit head, and staff. The data of registered coffee farmers' profiles are stored in the content management module. The monitoring management module displays the disease of the monitored coffee plant that was recorded in the system. Finally, the Report Generation

module displays a statistical report that can be by barangay, by coffee plant disease, or by annual report, depending on the needs of the intended user.

The researchers collected and ranked the system's performance using a survey questionnaire based on ISO 9126 as the main tool. This study included 209 participants: 17 professionals/CSIT instructors, 189 SCS students, and 3 City College of Tagaytay clients. The questionnaire is divided into six sections: functionality, reliability, usability, efficiency, maintainability, and portability. The developed system has an overall rating of 4.23 with a descriptive rating of "Excellent," indicating that it fully meets all criteria and exceeds all expectations.

#### **Web-Based Tagaytay City Government Employee Multi-Purpose Cooperative Record Management with Information System (2022)**

As stated by Margielyn S. Cuadra | Justine R. Hemor | Renniel G. Gomez | & Angel Jade N. Banario (2022), this study, "Web-Based Tagaytay City Government Employee Multi-Purpose Cooperative Record Management with Information System," offers digital innovation of manual processes more accurately and conveniently. The managers approve each loan for qualified members and edit the loan amount. The staff can add new members and register membership fees, and users can view every detail of the transaction process. The proponents relied heavily on survey questionnaires to collect data and assess the system's performance. The overall rating for the system was 4.38, with a descriptive scale rating of "Excellent," indicating that the system fully meets all expectations.

#### **Development of Information System for Barangay Pajo, Alfonso Cavite (2016)**

As stated by Eroles, Lorraine Laye B. | Dela Cruz, Ariel C. | Ilag, Romnick B. | Opo, Michael B. (2016), an Information System (IS) is any organized system for collecting, organizing, storing, and communicating information. It is the study of the complementary networks used by people and organizations to collect, filter, process, and distribute data. The emphasis is on an information system with a clear boundary, users, processors, stores, inputs, outputs, and the previously mentioned communication networks. Due to the lack of a barangay information system in Pajo Alfonso, Cavite, researchers developed one for the barangay. After finding the instructor, the students are given an evaluation sheet, a pencil, and a comment and suggestion paper. This current method requires a significant amount of personal effort to complete the task at hand. The administrator department puts in a lot of effort just to collect and store resident information. The advancement of technology in the Barangay Information System can help researchers collect more accurate data in the shortest amount of time possible. The development system can provide administrative officials with much easier and more cutting-edge technology. The barangay information system's results met the researchers' goals, making them worthy of continued and further development. The development system is divided into two modules: the administrator, who will be in charge of managing all transactions; and the barangay officials, who will use the system for viewing purposes. The system development life cycle was used by the researchers throughout the research and development of the system, including planning, analysis, design, implementation, testing, and maintenance.

Following the development of the system, the researchers evaluated 10 clients, 10 IT professionals, and ten IT professors. The researchers then calculated the overall mean of the system evaluation. It implied that the developed study was very useful and could be very useful to the institution. A rating of 4.12, interpreted as "Very Good," indicates that the developed system was well accepted by users. The evaluation results from the professors' members improved their usage.

#### **Development of Financial Assistance in Information 7<sup>th</sup> District Office (2019)**

As stated by Bedua, Mae S.| Napoles, Christine P. | Umandap, Jervy U. (2019), the general objective of this study was to develop a Financial Assistance Information System for the 7th District Office that would meet the needs of the 7th District Office in terms of managing financial assistance client records.

The development of a Financial Assistance Information System for the 7th District Office, which is now the 8th District Office, is capable of collecting data and information from applicants such as applicant's name, birthdate, address, age, contact number, name of patient/beneficiary, findings/diagnosis, and date; is of application; date approved; the amount approved, and date released; providing accurate and reliable transaction information; and generating report summaries for specific municipality/city and barangay. Give financial assistance, secure data entry, monitor funds, and view and print reports.

The iterative methodology was used in this study. It is a seven-phase process that a project team goes through between the planning phase and the deployment phase.

The overall mean average result of the respondent's overall assessment of the system was 4,31, which was interpreted as "Excellent," which means that the information presented in the system is free of errors, is based on truth or facts, and performed the required functions.

## CHAPTER III

### METHODOLOGY

#### Project Design

The study titled “Development of a Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association” was developed using Notepad++ text editor, XAMPP, PHP, HTML, CSS, Bootstrap JavaScript, and MySQL for the database. This study is intended for three (3) levels of access namely, System Administrator, Secretary, and Members.

The researchers used a Context Diagram to illustrate the entire process of the system and a Data Flow Diagram for each user's particular operation within the system.

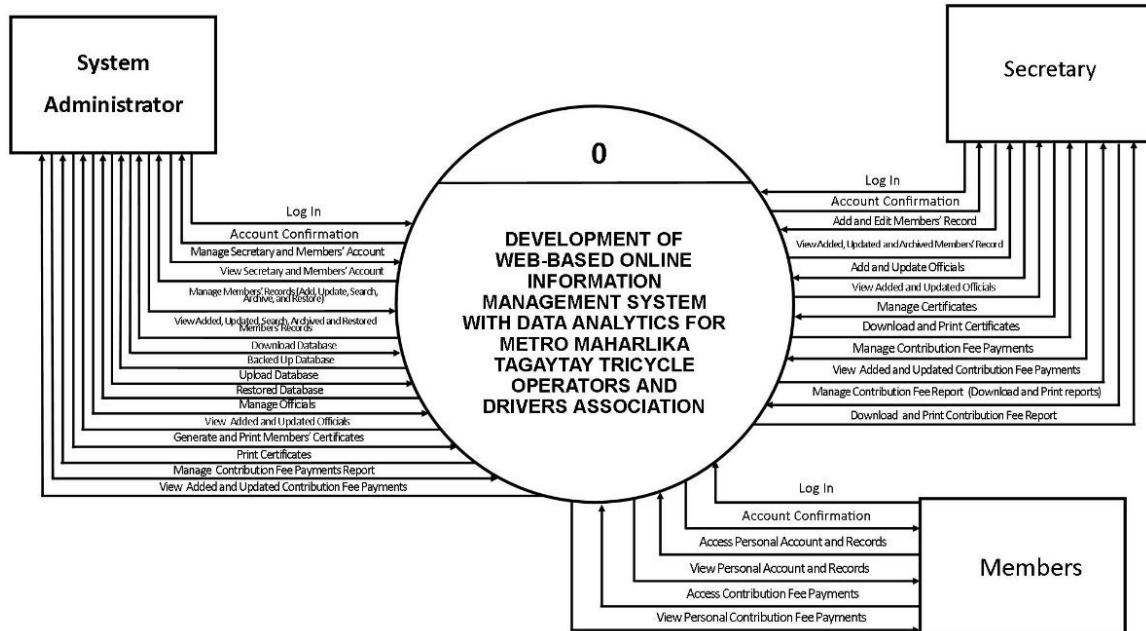


Figure 3. Context Diagram of Development of a Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association

*Figure 3* illustrates the conceptualization of the system. The diagram presents the process of the System Administrator, Secretary, and Members.

The System Administrator can log in to the system to manage secretary and member accounts, archive and restore member records, and backup and restore the database. System Administrator can manage officials, generate and print certificates, and manage and generate reports of monthly contribution fee payments.

The Secretary can access the system using the account created by the system administrator. The secretary can add and update members' records, view archived members' information, generate and print certificates, and manage and generate reports of monthly contribution fee payments.

Members can also access the system using the account created by the system administrator. Members can only see their unit and personal information, as well as their monthly contribution fee records.

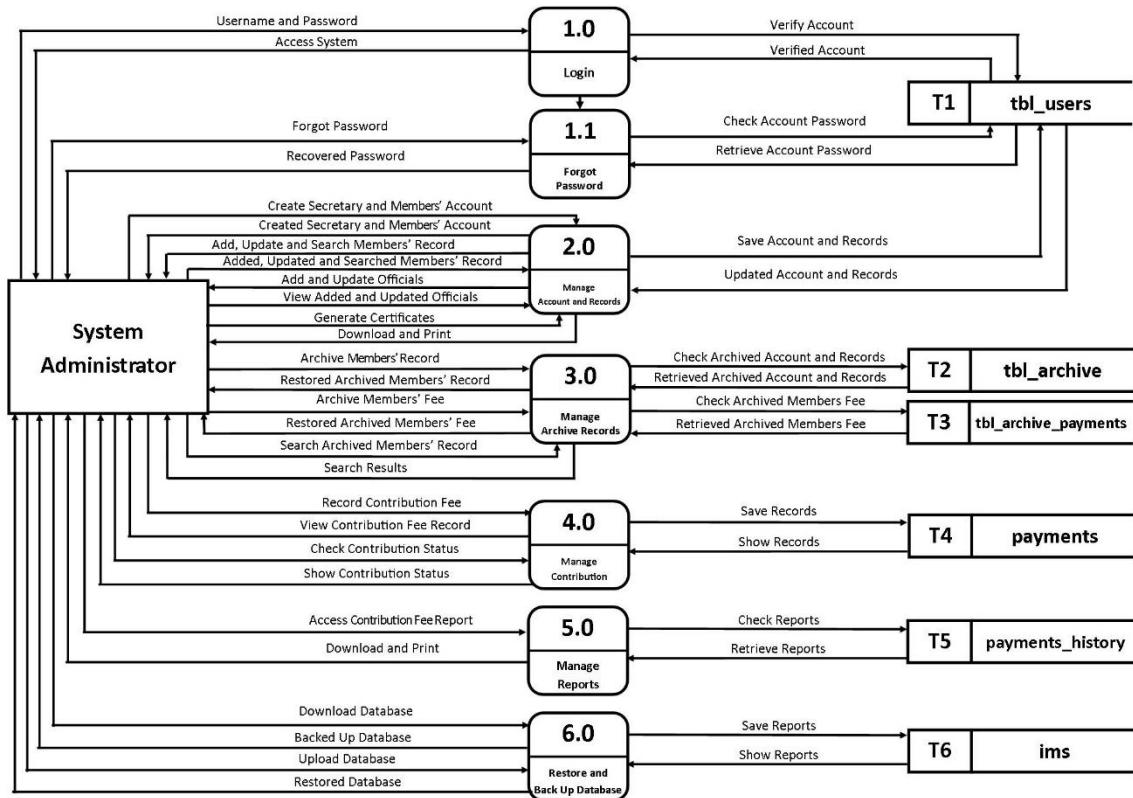


Figure 4. Data Flow Diagram of System Administrator Entity

Figure 4 illustrates the data flow diagram of the System Administrator. The System Administrator is required to log in to the system to create secretary and member accounts, add and update members' records, update officials, and generate and print certificates. System administrator account will be checked and verified, allowing it to change password in the database table **tbl\_users**, search and retrieve archive records of members in **tbl\_archive**, retrieve archived members fees in **tbl\_archive\_payments**, check and record contribution fees in **payments**, generate and print the members' monthly contribution fee report in **payments\_history**, and backup and restore the system's database.

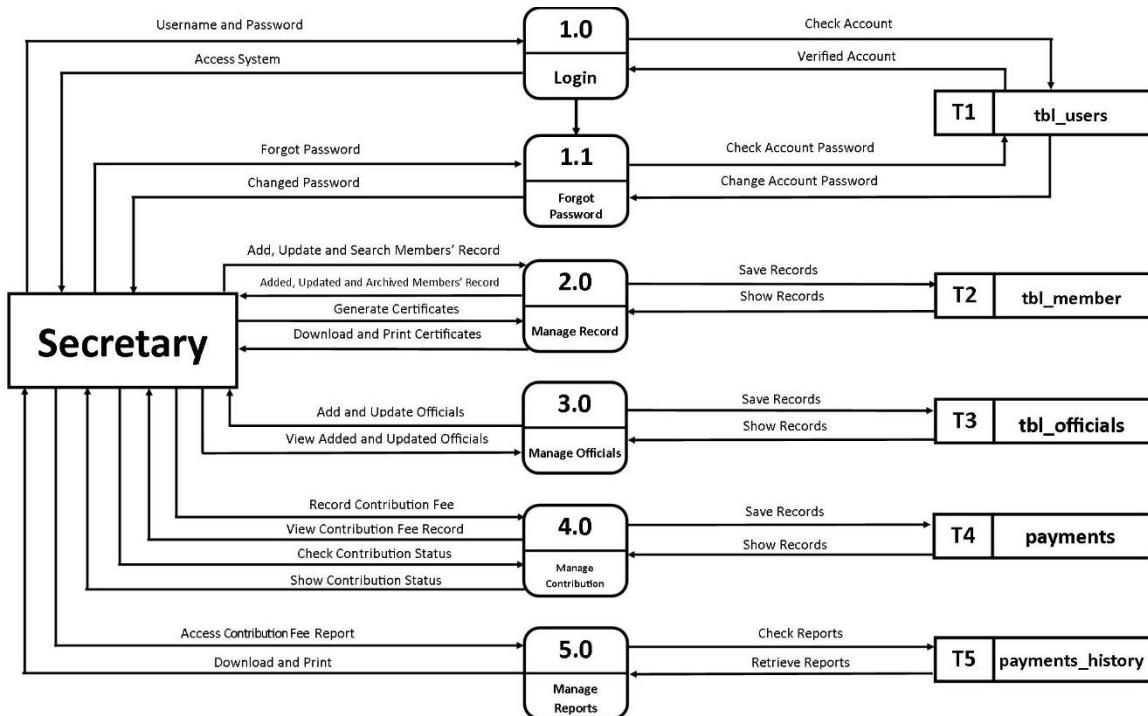


Figure 5. Data Flow Diagram of Secretary Entity

Figure 5 illustrates the data flow diagram for the secretary. The secretary can access the system using the account created by the system administrator and change his or her forgotten password in `tbl_users`, add and update members' records, view achieved members' information in `tbl_member`, add and update officials in `tblOfficials`, and generate and print certificates from `tbl_member`. In payments, the secretary can check and record the contribution fees of members, as well as generate and print members' monthly contribution fee reports in `payments_history`.

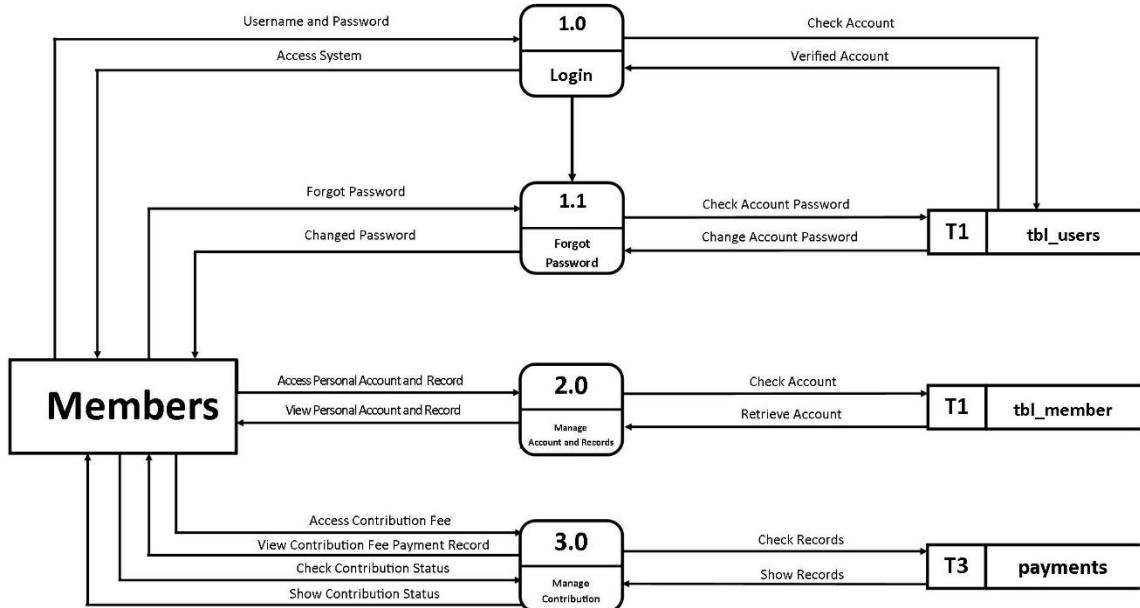


Figure 6. Data Flow Diagram of Members Entity

*Figure 6 illustrates the data flow diagram of the members. The members are required to log in to access the account provided by the system administrator and can change forgotten passwords in tbl\_users. The members can view personal information in the tbl\_member. The members can also view and check personal monthly contribution records in payments.*

## Project Methodology

The iterative development process model is the software methodology used in designing the software, the functions, and the interface. This model is the implementation of the software development life cycle in which the initial development is started based on the initial requirements and more features are added to the base software product with ongoing iterations until the final system is created.

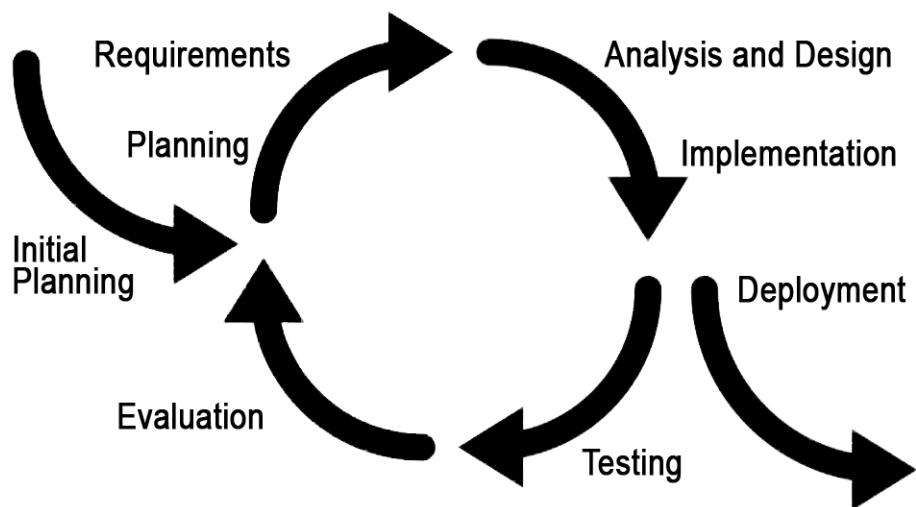


Figure 7. Features of Iterative Model, Interaction Design Foundation, January 1, 2021

*Figure 7 illustrates the iterative methodology for the Development of the Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association. The following are the phases: initial planning, planning, requirements, analysis and design, implementation, testing, evaluation, deployment, and the developed system.*

**Initial Planning.** The researchers discussed ideas from each member through brainstorming and determined the kind of system to develop and the organization to benefit from the system. The researchers agreed to develop the Web-based Online Information Management System with Data Analytics, and the main beneficiary is the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association located in Maharlika Tagaytay City Cavite. The researchers also prepared for other stages by conducting group meetings.

**Planning.** The researchers conducted an interview with the president of MMTTODA to ascertain their willingness to participate in the study as a beneficiary of the system. The client accepted the proposal after the researchers presented them with the expected flow of the system. The researchers also identified the necessary hardware and software for the system and proactively planned for potential problems and developed solutions that might arise during the development.

**Requirements.** The researchers gathered the necessary information for the system through an interview with the client. The researchers identified the current management of association information that the system could optimize and the internal flow of the association in terms of issuing certificates and paying contribution fees. The researchers obtained a list of data of the members covered by the association, the officials, the original membership certificate template and the line purchase certificate, and the issued color-coding scheme. The researchers also provided the logo for the main beneficiary, as the association does not yet have the logo needed in the system.

**Analysis and Design.** The researchers identified, analyzed, and visualized the scope and limitations of the study, the levels of access to the system, and the modules that are included in the system.

The researchers gathered related studies and literature for the development of the Web-Based Online Information Management System with Data Analytics for the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association. They outlined the design interface of the system using PHP, HTML, CSS, JavaScript, and the MySQL database. The researchers used the conceptual framework for the input, process, and output to produce the expected design to be user-friendly ensuring that the user will easily navigate and interact with the system.

**Implementation.** The plan and design were implemented into the program code of the proposed system. Moreover, this is also where the researchers planned the deployment of the developed system in the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association.

**Testing.** The researchers tested the systems' functions. The tests conducted by the researchers provided (4) four testing phases: unit, performance, acceptance, and integration testing.

**Evaluation.** The evaluation was accomplished through the use of ISO 9126 as an instrument for the corresponding respondents, which resulted in a score of 4.38 and an "Excellent" rating. The researchers met the expectations set by the developed system.

**Deployment.** The researchers deployed the online system to the client by sending the link to the online system and giving the client a CD containing a copy of the system.

## **System Operational and Testing Procedure**

The system operation shows the entire process, from the initial to its final stages. This section comprehensively discusses the system's flow of operations.

### **System Operational Procedure**

For the System Administrator:

1. Log in as a System administrator.
2. If the password is forgotten, there is an option to change it.
3. Use the correct username and password to access the website.
4. The system homepage will verify the login and password.
5. The system administrator will have various options, such as:
  - a. Changing of password;
  - b. adding, editing, or removing officials;
  - c. exporting a CSV file of members' master list;
  - d. adding, editing, updating, generating, or archiving members' information;
  - e. retrieving a member's information;
  - f. generating and printing certificates for members;

- g. managing and updating the monthly contribution fee payments of members;
- h. generating a report of monthly contribution fee payments by members;
- i. changing and updating system settings;
- j. backing up or restoring the database of the system;
- k. logging out of the system.

For the Secretary:

- 1. Log in as Secretary.
- 2. If the password is forgotten, there is an option to change it.
- 3. Use the correct username and password to access the website.
- 4. The system homepage will verify the login and password.
- 5. The secretary will have various options, such as:
  - a. Adding or editing officials;
  - b. exporting a CSV file of members' master list;
  - c. adding or editing members' information;
  - d. generating and printing certificates for members;
  - e. managing and updating the monthly contribution fee payments of members;
  - f. generating a report of monthly contribution fee payments by members;
  - g. logging out of the system.

For the Members:

1. Log in as a Member.
2. If the password is forgotten, there is an option to change it.
3. Use the correct username and password to access the website.
4. The system homepage will show if the login and password have been verified.
5. View their own unit and personal information.
6. View their monthly contribution fee payments.

## **Testing Procedure**

This section explains the system diagnostics to determine whether the system meets its expected outcomes. This section reveals any flaws or changes present in the system as well as user feedback.

**Unit Testing.** The researchers tested every module using processes and control data. The unit testing was conducted initially and continuously so that the source code change ensures that no bugs are introduced and to see if it produces the expected output based on the commanded input.

The users' accounts were also tested simultaneously using both a laptop and a mobile device to assess their performance. The result shows that the system is responsive and easy to access.

**Integration.** The researchers tested each combined part of the system to see if the modules/units work properly and if the system works as expected. The

integration testing resulted in an overall mean average of 4.38, with an “Excellent” rating.

**Acceptance Testing.** The system was tested by the beneficiary and confirmed that it successfully met the user's needs and the required criteria.

**Performance Testing.** The developed system was shown to the clients. The researchers conducted performance testing to determine the system's speed, responsiveness, and stability when connected to a network. The Clients were satisfied and provided no recommendations to the researchers.

**System Testing.** The system was tested in different environments, including operating systems, browsers, and devices. The Researchers subjected the entire system to verify its compliance with all of the specified requirements and adherence to standard qualifications.

## Evaluation Procedure

In the preliminary evaluation, the researchers reviewed all the necessary factors for the completion of the system.

The results were analyzed to determine whether the desired output was met with the given input. The final evaluation sheet was then distributed to the respondents. The comments, suggestions, and recommendations are used to improve and enhance the system. The study used the Evaluation Criteria for software as an evaluation framework.

*Table 1* shows the numerical rating and its equivalent interpretation to scale the result of the project evaluation.

Table 1. System Evaluation Sheet Numerical and Descriptive Scale

NUMERICAL RATING	INTERPRETATION	DEFINITION
4.21 - 5.00	Excellent	The system meets and far exceeds most expectations.
3.41 - 4.20	Very Good	The system fully meets all and exceeds several expectations.
2.61 - 3.40	Good	The system fully meets all expectations.
1.81 - 2.60	Fair	The system does not fully meet all expectations.
1.00 - 1.80	Poor	The system fails to meet expectations to a significant degree in several areas.

## **CHAPTER IV**

### **RESULTS AND DISCUSSION**

This chapter presents the Project Description, Project Structure, Screen Hierarchy of the System, and the Project Evaluation of the Study.

#### **Project Description**

The study titled “Development of Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association” aims to provide an online information management system to the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association to optimize the information process, enhance security, improve data storage, and ensure the availability of information. The system is intended for three (3) users: System Administrator, Secretary, and Members.

The president of MTTODA, as the System Administrator, is in charge of creating accounts for the members and secretary, managing member information, managing officials, managing the record of monthly contribution fee payments of members, generating and printing certificates and reports, and backing up and restoring the system database. The Secretary is responsible for managing the records of the members, except for removing, archiving, and restoring those records. The secretary can also manage officials, generate and print certificates and reports, and manage the record of monthly contribution fee payments. The

member is only responsible for viewing their unit information, personal records, and their monthly contribution fee.

The iterative model was the methodology used by the researchers in developing the system. The methodology contains the following phases: Initial planning, planning, requirements, analysis and design, implementation, testing, evaluation, and deployment.

The first phase was the initial planning phase, where the researchers determined the project goal - which is to develop a web-based online information management system for the Metro Maharlika Tagaytay Tricycle Operators and Drivers Association. The researchers considered various factors such as identifying the needed hardware and software for the system and the researchers' skills and abilities to execute the proposed project. The second phase is the planning phase, where the researchers conducted an interview with the president of MMTTODA to determine if they were willing to participate in the study as a beneficiary of the system and presented the expected flow of the system. The researchers also anticipated potential problems and planned solutions that might arise while developing the system. The third phase is the requirements phase, where the researchers gathered all the needed information and analyzed them accordingly, ensuring that all essential data for the system has been accounted for. The fourth phase is Analysis and Design, where the researchers identified, analyzed, and visualized the scope and limitations of the study, the level of access, and modules such as the Account Management Module, the Record Management Module, the Contribution Management Module, and the Report

Management Module that were included in the system, which provides solutions to the problems that were recognized in the requirements analysis phase. The researchers designed the user interface in HTML, CSS, Bootstrap, and JavaScript. The fifth phase is the implementation phase. After finalizing the system, the researchers implemented and prepared the system for testing and evaluation. The sixth phase is the testing phase, where the researchers performed a series of testing procedures, namely unit testing, integration testing, acceptance testing, performance testing, and system testing, to identify bugs and errors. The seventh phase is the evaluation phase. An evaluation basis was prepared to identify the ratings, findings, and recommendations of each respondent. The researchers used ISO 9126 as the evaluation instrument for the (295) two hundred ninety-five respondents who provided the system with an overall score of "4.45" with an "Excellent" rating. The last phase is the deployment phase. The system will be deployed at MMTTODA after testing and evaluation have been completed.

## **Project Structure**

The Development of Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association intends to optimize the information management system of MMTTODA. It was designed using PHP, HTML, CSS, and JavaScript. This system can be accessed both through computers and/or mobile phones. To access the system, users must navigate this link:

<http://www.mmttoda.com/login.php>. using browsers like Google Chrome. The developed system would require internet connection access.

## Screen Hierarchy

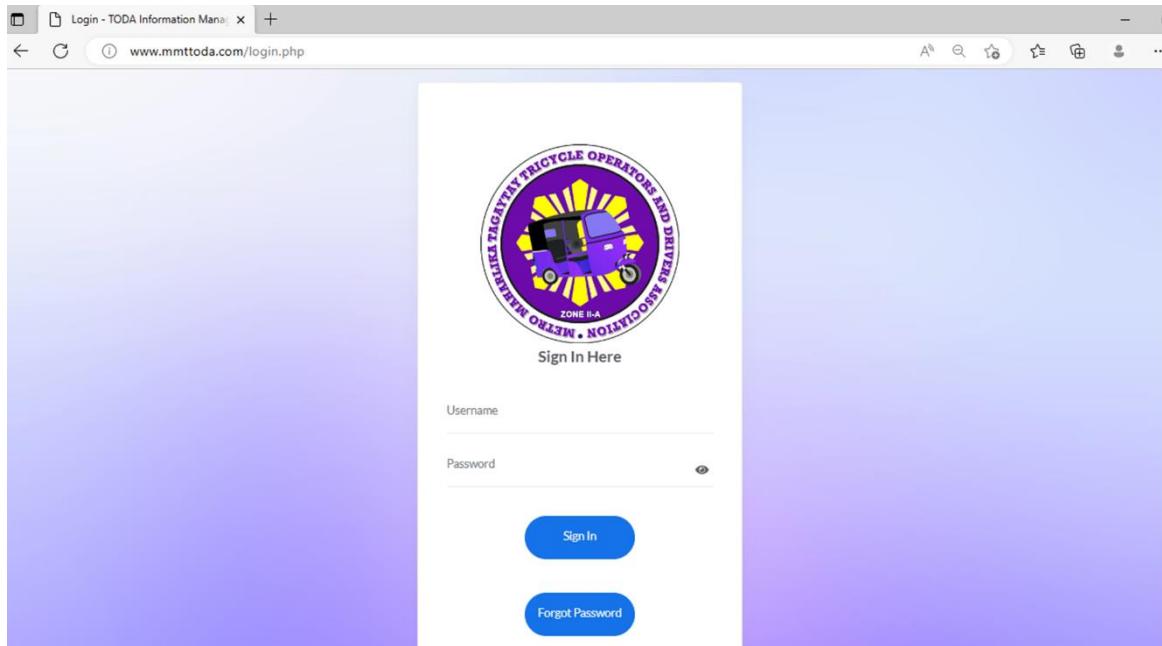
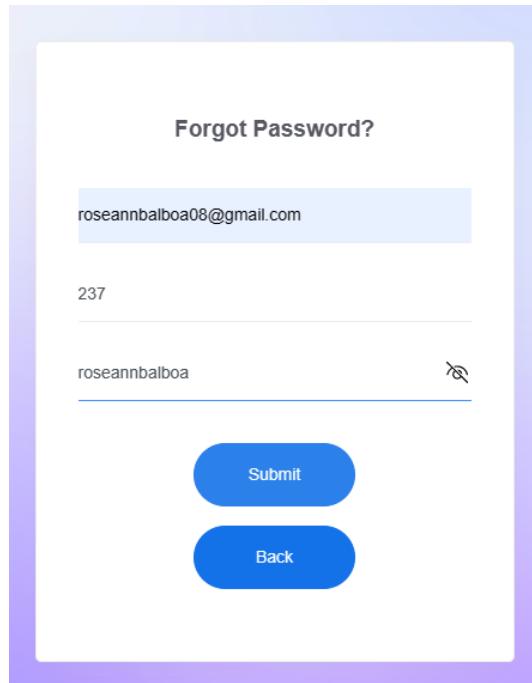


Figure 8. Log in Form

Figure 8 shows the log in form for the members, secretary, and system administrator that requires their username and password and has two buttons for sign-in and forgot password. The alert message dialog 'Username or password is incorrect!' will show if the user input did not match the username and password.



The image shows a mobile-style 'Forgot Password?' form. At the top, it asks for an email address, which is filled in as 'roseannbalboa08@gmail.com'. Below that is a text input field containing the number '237'. Underneath the number is another text input field with the placeholder 'roseannbalboa' and a small eye icon to its right, indicating it's a password field. At the bottom of the form are two blue rounded rectangular buttons: 'Submit' on top and 'Back' on the bottom.

Figure 9. Forgot Password Form

Figure 9 shows the 'Forgot Password' form that allows members, secretary, and system administrator to change their password with a 6-digit OTP code sent to their email. The form requires their email, which is recorded under their information, their user ID number, and a new password. Then, a 6-digit OTP code will be sent to their email. The user needs to input the correct 6-digit OTP to successfully change their password. The 'Password successfully updated' alert message will show if the user input matches the 6-digit OTP code and will return directly to the log-in page; otherwise, it will display the alert message that the OTP code is incorrect.

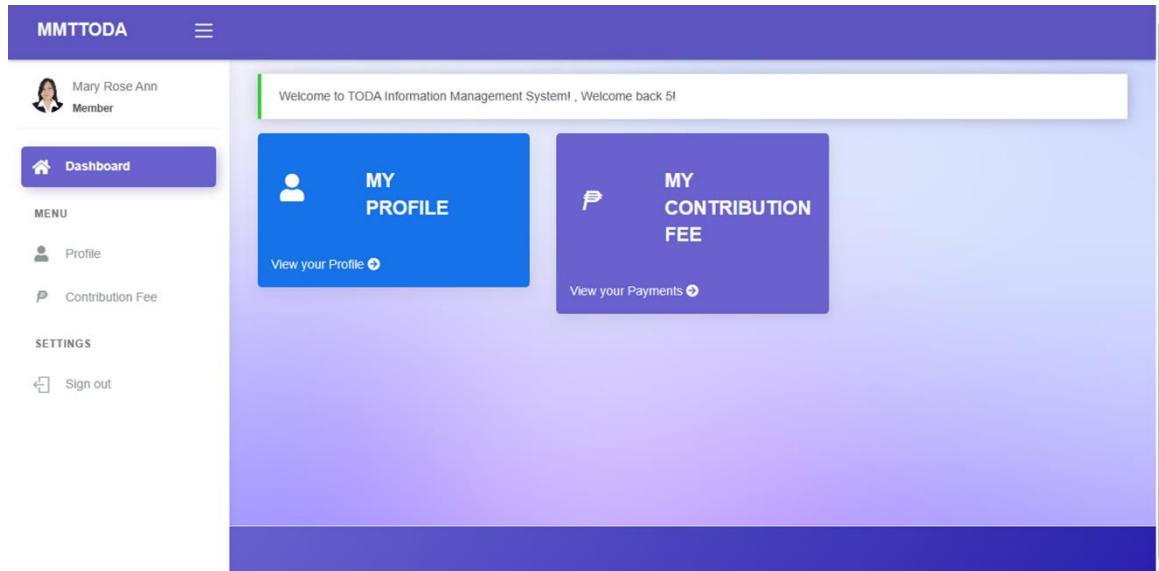


Figure 10. Member Dashboard Page

Figure 10 displays the member's dashboard. This includes the photo, first name, user type, welcome message on dashboard, member's profile, member's contribution fee, and sign out button. It also shows sidebar navigation, which users can minimize.

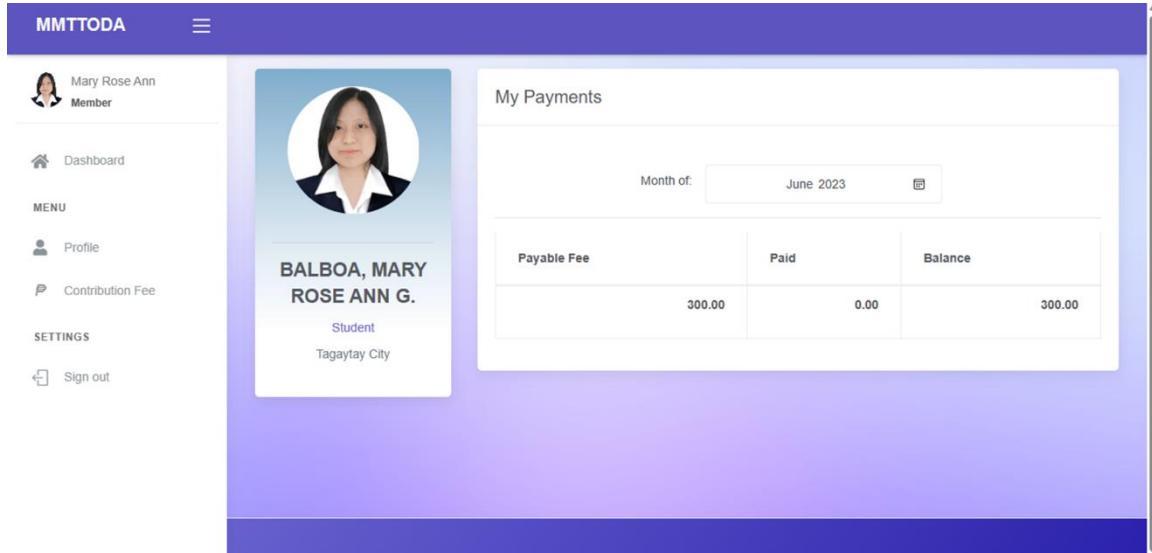
 A screenshot of the Member's Profile page. The top navigation bar is purple with the text 'MMTTODA' on the left and a menu icon on the right. On the far left, there's a sidebar with a user profile picture of 'Mary Rose Ann Member', followed by a 'Profile' button (which is highlighted in blue), 'Dashboard', 'Contribution Fee', 'SETTINGS', and 'Sign out'. The main content area shows a circular profile picture of a woman and her details: 'BALBOA, MARY ROSE ANN G.', 'Student', 'Tagaytay City'. Below this, there are two tables of information. The first table contains 'ID No.: 5', 'Body No.: 004', and 'Franchise No.: AAA-004'. The second table lists personal details: Full Name (BALBOA, MARY ROSE ANN G.), Email (roseannbalboa08@gmail.com), Phone (09998152756), Birthdate (2000-02-25), Birth Place (Silang, Cavite), Age (23 years old), Gender (Female), Civil Status (Single), and Vaccine Status (Yes (First)).
 

ID No.:	5
Body No.:	004
Franchise No.:	AAA-004

Full Name	BALBOA, MARY ROSE ANN G.
Email	roseannbalboa08@gmail.com
Phone	09998152756
Birthdate	2000-02-25
Birth Place	Silang, Cavite
Age	23 years old
Gender	Female
Civil Status	Single
Vaccine Status	Yes (First)

Figure 11. Member's Profile Page

Figure 11 shows the profile of a member that is recorded in the system. The member can view their own photo, name, ID number, body number, franchise number, plate number, color coding, gender, date of birth, age, civil status, address, phone number, and email address.



The screenshot displays a mobile application interface for a member named Mary Rose Ann. The top navigation bar includes the app name 'MMTTODA' and a three-dot menu icon. On the left, a vertical sidebar labeled 'MENU' contains links for 'Profile', 'Contribution Fee', and 'Sign out'. The main content area features a circular profile picture of Mary Rose Ann. Below the picture, her name 'BALBOA, MARY ROSE ANN G.' is displayed, along with her title 'Student' and location 'Tagaytay City'. To the right, a section titled 'My Payments' shows a table for June 2023. The table has columns for 'Payable Fee', 'Paid', and 'Balance'. A single row shows a payable fee of 300.00, paid amount of 0.00, and balance of 300.00.

Payable Fee	Paid	Balance
300.00	0.00	300.00

Figure 12. Member's Contribution Fee Page

Figure 12 shows the unit information and contribution fee payments of the member for the current month. Members can view the payable fee, the amount paid, and the remaining balance for the current month, and they can also revert their payments from previous months using the month filter.

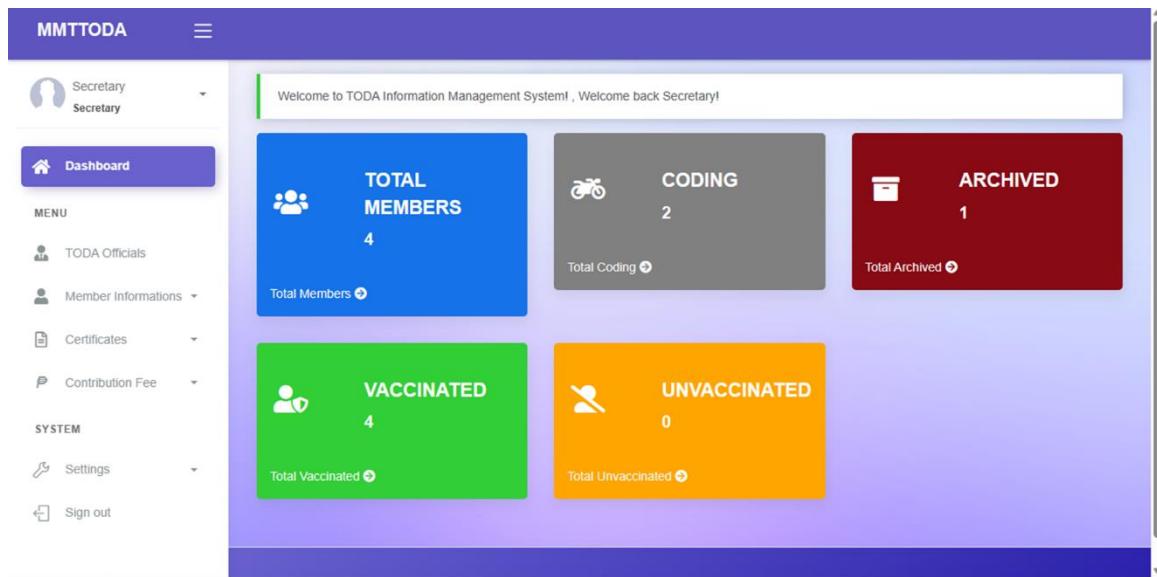


Figure 13. Secretary Dashboard Page

Figure 13 displays the secretary's dashboard. This includes the welcome message, the number of total members, coding, archived, vaccinated and unvaccinated. The sidebar of the secretary shows the photo, username, user type, dashboard, TODA officials, member information (member information and archived members), certificates (certificate of membership, certificate of line purchase, and blank template), contribution fee (member fees, payments report, and archived member fees report), settings (TODA info), and sign out button.

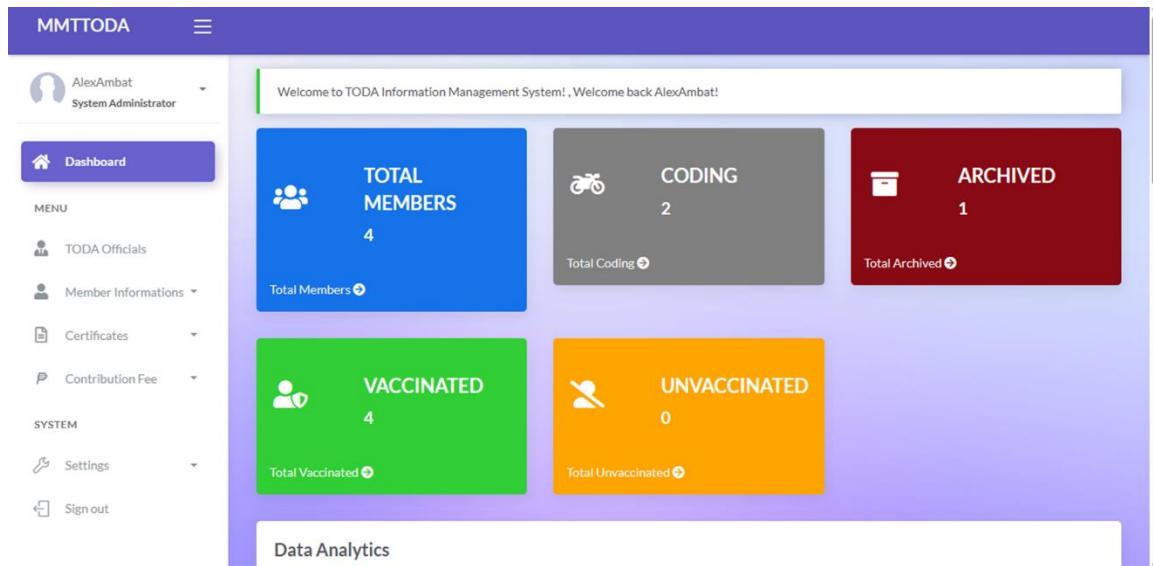


Figure 14. System Administrator Dashboard Page

Figure 14 displays the system administrator's dashboard. This includes the number of total members, coding, archived, and vaccinated and unvaccinated. The sidebar shows the photo, username, user type, dashboard, TODA officials, member information (member information and archived members), certificates (certificate of membership, certificate of line purchase, and blank template), contribution fee (member fees, payments report, and archived member fees report), and the system settings (TODA information, user account, and restore and backup).

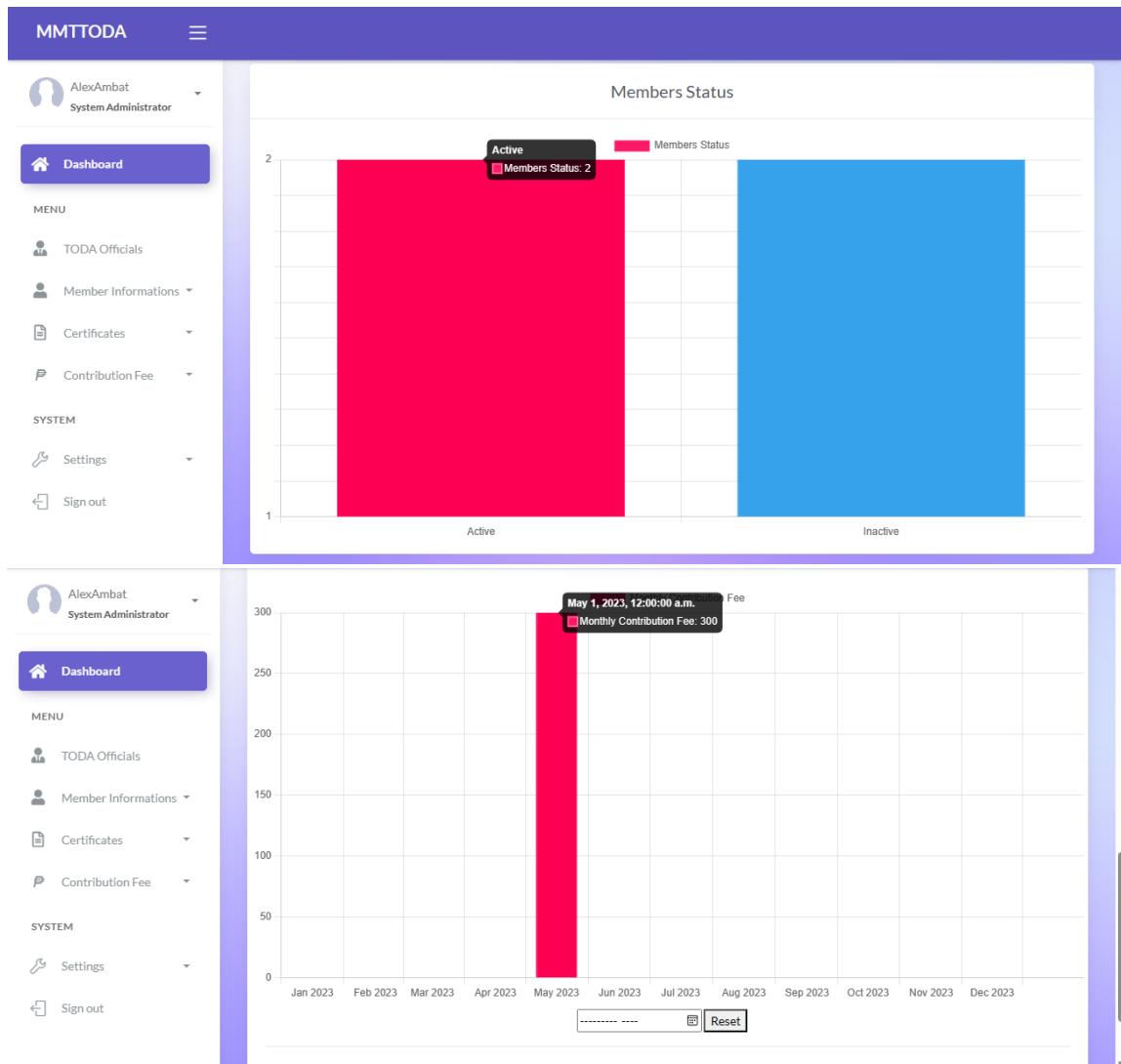


Figure 15. System Administrator Dashboard Data Analytics Page

Figure 15 displays different graphical representations of the system's data. The bar graph for the representation of active and inactive TODA members, and the line graph for members' monthly contribution fee. The system administrator can filter the month and year of the member's contribution fee line graph.

ID No.	Status	Photo	Fullname	Body No.	Coding
2	Inactive		Angcaya, Edson Mendoza	001	Blue
3	Inactive		Robis, Jezryl Mae Poblete	002	Blue
4	Active		Mahinay, Christian Abelong	003	Blue
5	Active		Balboa, Mary Rose Ann Gaza	004	Red

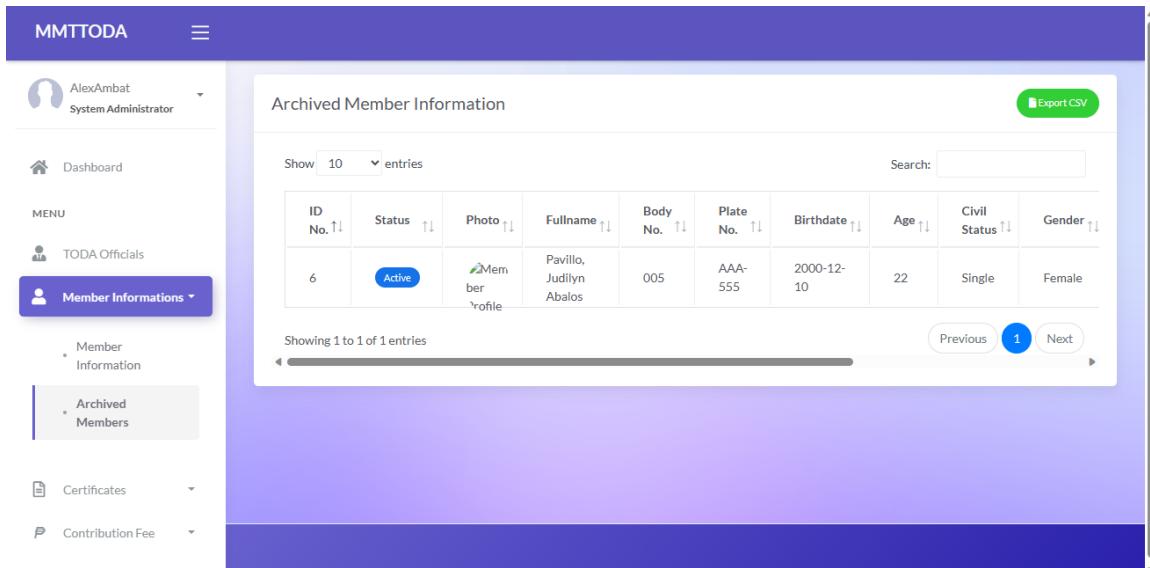
Figure 16. Total Members Page

Figure 16 shows the page of the table list and the total numbers of all members that are recorded in the system. The secretary and system administrator can filter the table and search for easy viewing of members' ID number, status, photo, full name, birthdate, age, civil status, gender, coding, vaccine status, and vaccine dose.

No.	Color Coding	Details
1	Blue	Weekend
2	Red	Monday

Figure 17. Total Coding Information Page

Figure 17 shows the table list and total number of color-coding that the secretary and system administrator can view. The table list displays the number of color coding, the color coding, and the details of coding



The screenshot shows a web application interface for managing member information. The top navigation bar includes the logo 'MMTTODA' and the user profile 'AlexAmbat System Administrator'. A sidebar on the left is titled 'MENU' and contains links for 'Dashboard', 'TODA Officials', 'Member Informations' (which is currently selected), 'Certificates', and 'Contribution Fee'. The 'Member Informations' section is expanded, showing 'Member Information' and 'Archived Members'. The main content area is titled 'Archived Member Information' and displays a table with one entry. The table columns are: ID No. (6), Status (Active), Photo (Thumbnail of a person), Fullname (Pavillo, Judilyn Abalos), Body No. (005), Plate No. (AAA-555), Birthdate (2000-12-10), Age (22), Civil Status (Single), and Gender (Female). There are buttons for 'Export CSV' and navigation controls ('Previous', '1', 'Next').

ID No. ↑↓	Status ↑↓	Photo ↑↓	Fullname ↑↓	Body No. ↑↓	Plate No. ↑↓	Birthdate ↑↓	Age ↑↓	Civil Status ↑↓	Gender ↑↓
6	Active		Pavillo, Judilyn Abalos	005	AAA-555	2000-12-10	22	Single	Female

Figure 18. Archived Members Page

Figure 18 shows the table list of all archived members. The secretary and system administrator can filter the table and search for easy viewing of archived members. The table displays the archived members' ID number, status, photo, full name, body number, plate number, birthdate, age, civil status, gender, color coding, vaccine status, and the action for viewing and restoring a member.

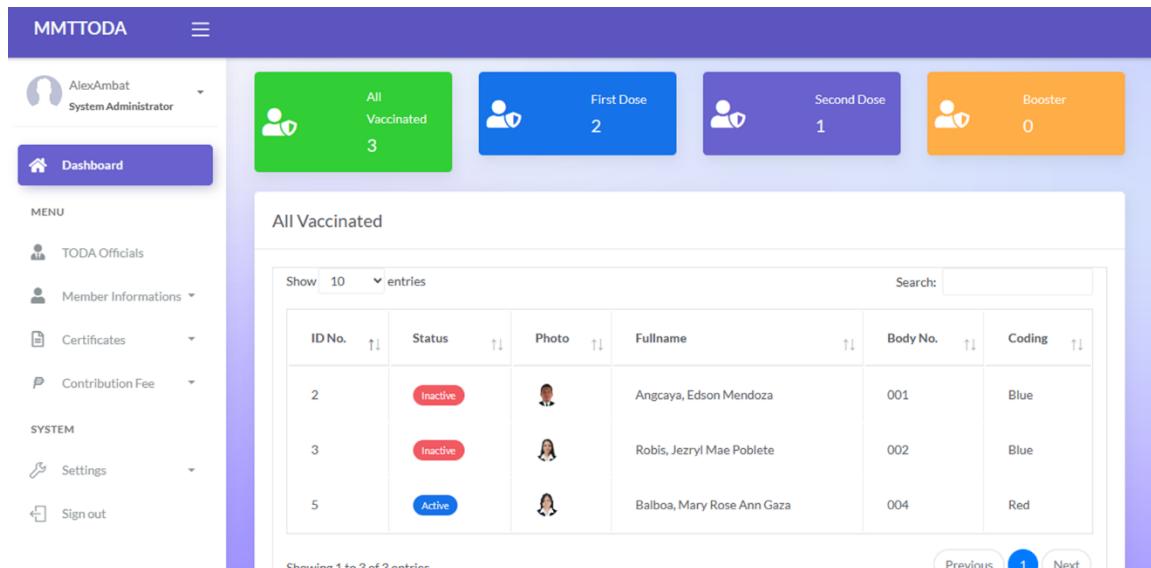


Figure 19 Total Vaccinated Members Page

Figure 19 shows the table list of all vaccinated members and number of members who already vaccinated, got first dose, got second dose, and got booster shot. The secretary and system administrator can filter the table and search for easy viewing of vaccinated members.

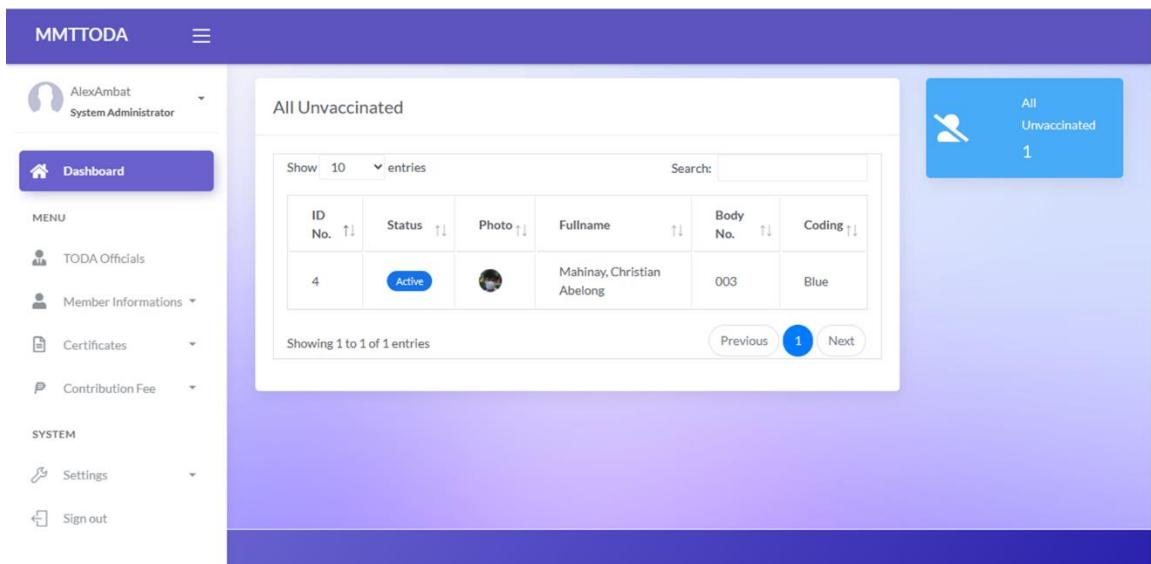


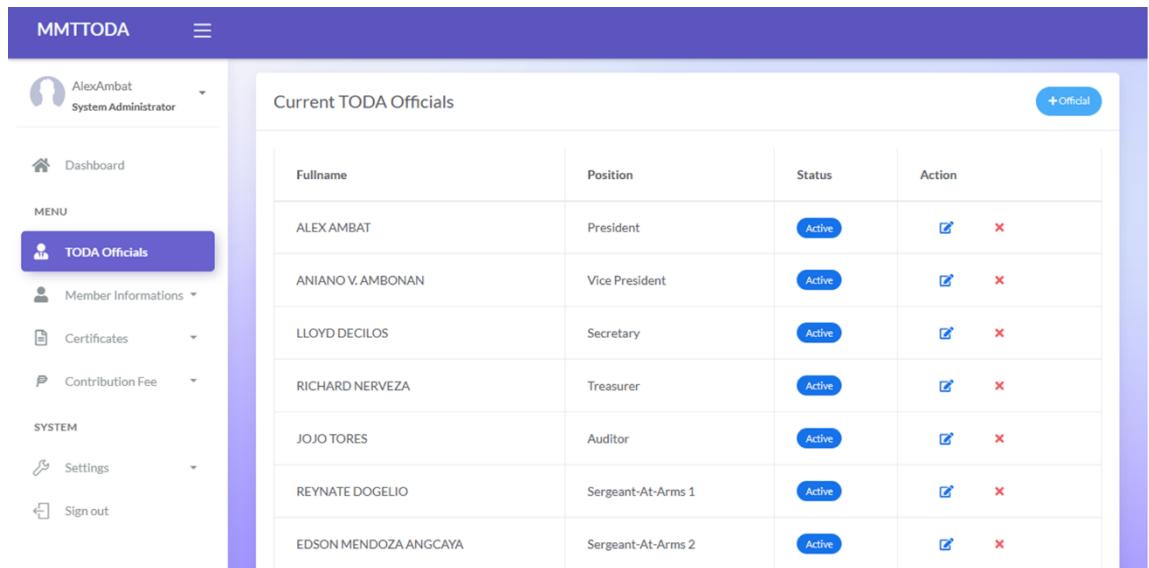
Figure 20. Total Unvaccinated Members Page

Figure 20 shows the table list and number of all unvaccinated members. The secretary and system administrator can filter the table and search for easy viewing of unvaccinated members.

The screenshot shows a modal dialog titled 'Change Password'. It contains four input fields: 'Username' (set to 'administrator'), 'Current Password' (placeholder 'Enter Current Password'), 'New Password' (placeholder 'Enter New Password'), and 'Confirm Password' (placeholder 'Confirm Password'). Each password field includes a small circular icon with an eye symbol for password visibility. At the bottom right of the form are two buttons: 'Cancel' (purple) and 'Change' (blue).

Figure 21. System Administrator's Change Password Form

Figure 21 shows the 'Change Password' form for the system administrator in any event that he wants to change his password. The form requires to enter the current password, new password, and confirm password.

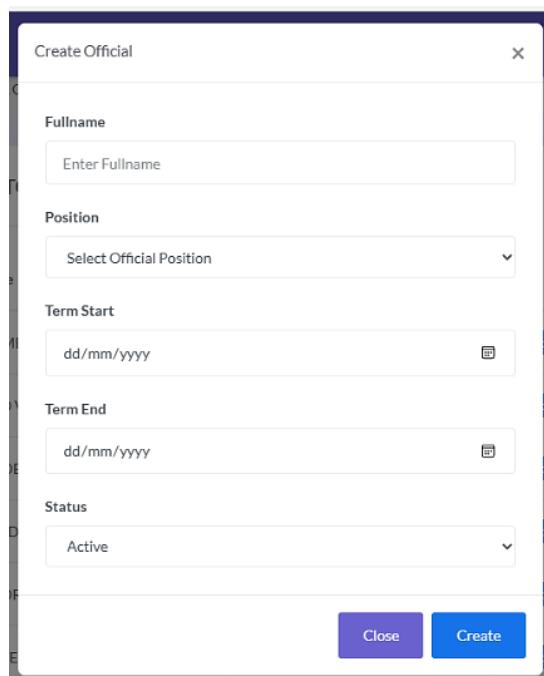


The screenshot shows a web application interface for managing TODA officials. On the left is a sidebar with a user profile for 'AlexAmbat' and a system administrator role. The main content area is titled 'Current TODA Officials' and displays a table with the following data:

Fullscreen	Position	Status	Action
ALEX AMBAT	President	Active	 
ANIANO V. AMBONAN	Vice President	Active	 
LLOYD DECILLOS	Secretary	Active	 
RICHARD NERVEZA	Treasurer	Active	 
JOJO TORES	Auditor	Active	 
REYNATE DOGELIO	Sergeant-At-Arms 1	Active	 
EDSON MENDOZA ANGCAYA	Sergeant-At-Arms 2	Active	 

Figure 22. TODA Officials Page

Figure 22 shows the current TODA officials. The table displays the officials' full name, position, and status. The system administrator can create, edit, and remove official.



The screenshot shows a modal dialog titled 'Create Official' with the following fields:

- Fullname: A text input field with placeholder 'Enter Fullname'.
- Position: A dropdown menu labeled 'Select Official Position'.
- Term Start: A date input field with placeholder 'dd/mm/yyyy'.
- Term End: A date input field with placeholder 'dd/mm/yyyy'.
- Status: A dropdown menu labeled 'Active'.

At the bottom right are two buttons: 'Close' and 'Create'.

Figure 23. Create Official Form

Figure 23 shows the form where the system administrator can create an official. The form requires full name, selected position, term start, term end, and status.

Fullname	Alex Ambat
Position	TODA President
Term Start	18/02/2023
Term End	18/09/2025
Status	Active

Figure 24. Edit Official Form

Figure 24 shows the form where the system administrator can edit and update an official with set position, term date, and status.

ID No. ↑	Status ↑	Photo ↑	Fullname ↑	Body No. ↑	Plate No. ↑	Birthdate ↑	Age ↑	Civil Status ↑	Gender ↑
2	Inactive		Angcaya, Edson Mendoza	001	AAA-111	2000-02-24	23	Single	Male
3	Inactive		Robis, Jezryl Mae Poblete	002	AAA-222	2001-06-10	23	Single	Female
4	Active		Mahinay, Christian Abelong Balboa, Mary	003	AAA-333	1999-08-26	23	Single	Male

Figure 25. Member Information Page

Figure 25 shows the table list of all members that are recorded in the system. The system administrator can filter the table and search for easy viewing of members' ID number, photo, full name, body number, plate number, birthdate, age, civil status, gender, coding, and vaccine status. Both the system administrator and secretary can create and edit/update member information, export member csvs, and generate masterlist, while only the system administrator can generate and print member identification and archive a member.

New Member Registration Form

	Firstname <input type="text" value="Enter Firstname"/>	Middlename <input type="text" value="Enter Middlename"/>	Lastname <input type="text" value="Enter Lastname"/>
Place of Birth <input type="text" value="Enter Birthplace"/>	Birthdate <input type="text" value="mm/dd/yyyy"/> <input type="button" value="Calendar"/>	Age <input type="text" value="Enter Age"/>	
Civil Status <input type="text" value="Select Civil Status"/>	Gender <input type="text" value="Select Gender"/>		
Vaccine Status <input type="text" value="Select Vaccine Status"/>	Vaccine Dose <input type="text" value="First"/>		
Unit Information:	Email Address <input type="text" value="Enter Email"/>	Contact Number <input type="text" value="Enter Contact Number"/>	Other Occupation <input type="text" value="Enter Occupation"/>
Body No. <input type="text" value="Enter Body No."/>	Address <input type="text" value="Enter Address"/>		
Franchise No. <input type="text" value="Enter franchise no."/>	Plate No. <input type="text" value="Enter Plate No."/>		
Color Coding <input type="text" value="Select Color Coding Name"/>	<input type="button" value="Close"/> <input type="button" value="Save"/>		

Figure 26. New Member Registration Form

Figure 26 shows the form for the new member registration. The secretary and system administrator can add a member. It consists the members photo

(optional), unit information (body number, franchise number, plate number, and selected coding), first name, middle name, last name, place of birth, birth date, age, civil status, gender, vaccine status (yes or no), vaccine dose if yes (first dose, second dose, or booster), email address (optional), contact number (optional), other occupation (optional), and address.

Edit/View Member Information		
	Firstname Jezryl Mae	Middlename Poblete
	Lastname Robis	
Place of Birth Silang Cavite	Birthdate 06/10/2001	Age 21
Civil Status Single	Gender Female	
Unit Information:	Vaccine Status Yes	Vaccine Dose Second
Body No. 214	Email Address jezrylmii@gmail.com	Contact Number 09102992447
Franchise No. 2021-1183	Address Tagaytay City	Other Occupation Student
Plate No. OYW-7391	Remarks Enter remarks	
Color Coding Red		
<input type="button" value="Close"/> <input type="button" value="Update"/>		

Figure 27. Edit/View Member Information Form

Figure 27 shows the form where the system administrator can edit or update unit and personal information of a member and add an optional remark.

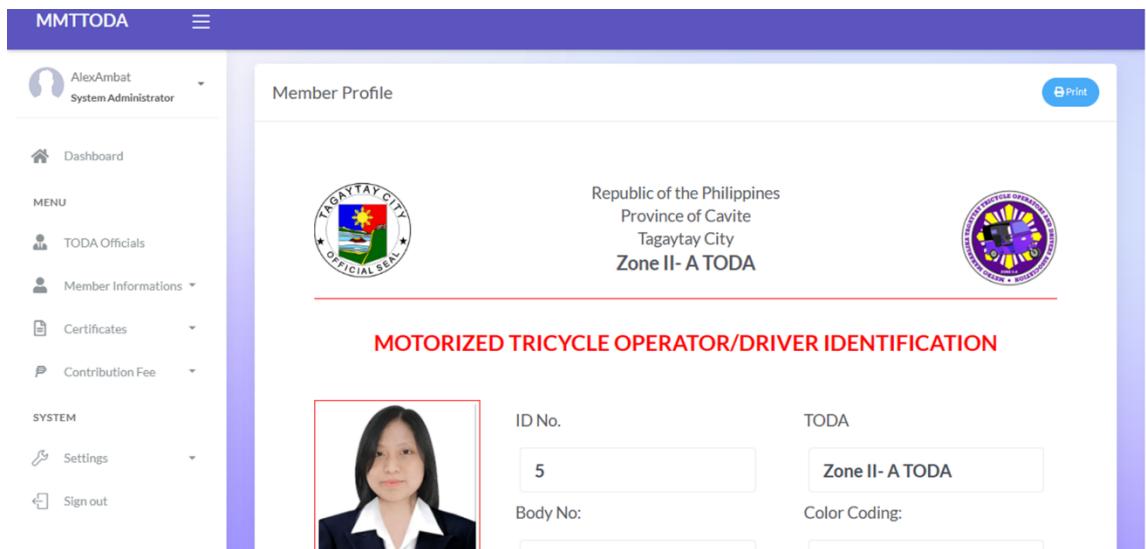


Figure 28. Generate Member Profile Page

Figure 28 shows the generated motorized tricycle operator/driver identification of a member. The member identification contains the logo and information of TODA, along with the member's photo, ID number, body number, color coding, TODA zone, name, contact number, and the name of the president. The system administrator can print the generated member identification.

The screenshot shows the 'TODA Masterlist' section of the MMTTODA system. The sidebar is identical to Figure 28. The main content area displays the 'TODA Masterlist' for 'Zone II- A TODA'. It features the official seal of Tagaytay City, the text 'Republic of the Philippines Province of Cavite Tagaytay City Zone II- A TODA', and a date stamp 'Date:06/07/2023'. Below this is a table titled 'MMTTODA MASTERLIST' with columns for ID, Fullname, Body no., Plate no., and Franchise no. The table contains four rows of data:

ID	Fullname.	Body no.	Plate no.	Franchise no.
2	Angcaya, Edson Mendoza	001	AAA-111	AAA-001
3	Robis, Jezryl Mae Poblete	002	AAA-222	AAA-002
4	Mahinay, Christian Abelong	003	AAA-333	AAA-003

Figure 29. Generate TODA Master List Page

Figure 29 shows the generated master lists of TODA members. The master list contains the logo and information of TODA, date created, members ID number, full name, body number, plate number, and franchise number. The secretary and system administrator can print the generated master list.

ID No. ↑↓	Photo ↑↓	Fullscreen ↑↓	Body No. ↑↓	Plate No. ↑↓	Gender ↑↓	Coding ↑↓	Vaccine Status ↑↓	Generate Certificate ↑↓
2			001	AAA-111	Male	Blue	Yes	
3			002	AAA-222	Female	Blue	Yes	
4			003	AAA-333	Male	Blue	No	
5			004	AAA-444	Female	Red	Yes	

Showing 1 to 4 of 4 entries

Previous 1 Next

Figure 30. Member Certificate Issuance Page

Figure 30 shows the table list of members. The secretary and system administrator can generate a certificate of membership for members.



Figure 31. Generated Certificate of Membership Page

Figure 31 shows the generated certificate of membership of member. The certificate of membership contains TODA information, the date when the certificate was made, member name, driver's fee and operator's fee, and the names of officials. The secretary and system administrator can print the generated certificate.

ID No. ↑↓	Photo ↑↓	Fullname ↑↓	Body No. ↑↓	Plate No. ↑↓	Gender ↑↓	Coding ↑↓	Vaccine Status ↑↓	Generate Certificate ↑↓
2		Angcaya, Edson Mendoza Robis,	001	AAA-111	Male	Blue	Yes	
3		Jezryl Mae Poblete Mahinay, Christian Abelong Balboa, Mary Rose Ann Gaza	002	AAA-222	Female	Blue	Yes	
4		Angcaya, Edson Mendoza Robis,	003	AAA-333	Male	Blue	No	
5		Angcaya, Edson Mendoza Robis,	004	AAA-444	Female	Red	Yes	

Figure 32. Member Certificate of Line Purchase Page

Figure 32 shows the table list of members where the secretary and system administrator can generate a certificate of line purchase for member.

The screenshot displays the MMTTODA application interface. On the left, a sidebar menu includes 'Dashboard', 'MENU', 'TODA Officials', 'Member Informations', 'Certificates' (which is selected), and 'Contribution Fee'. The 'Certificates' section has three options: 'Certificate of Membership', 'Certificate of Line Purchase', and 'Template'. The main content area is titled 'Certificate of Line Purchase' and features the 'Print Certificate' button. It contains the official seal of Tagaytay City, the text 'Republic of the Philippines', 'Province of Cavite', 'Tagaytay City', and 'Zone II- A TODA'. Below this is a red horizontal line. To the right of the line is the date 'Date: 06/07/2023'. The title 'SERTIPIKASYON NG BILIHAN NG LINYA' is centered in large red capital letters. Below the title, a statement in Tagalog reads: 'Ang kasulatang ito ay nagpapatunay sa bilihan ng linya ni G./Gng. Mary Rose Ann Gaza Balboa na may body #004 at franchise #AAA-004, kay'. At the bottom of the page, the text 'Figure 33. Generated Certificate of Line Purchase' is centered.

Figure 33 shows the generated certificate of line purchase. The certificate contains logo and TODA information, the date when the certificate was made, the name of the member and their body and franchise number, signature lines for the member and buyer, and the names of officials. The secretary and system administrator can print the generated certificate.

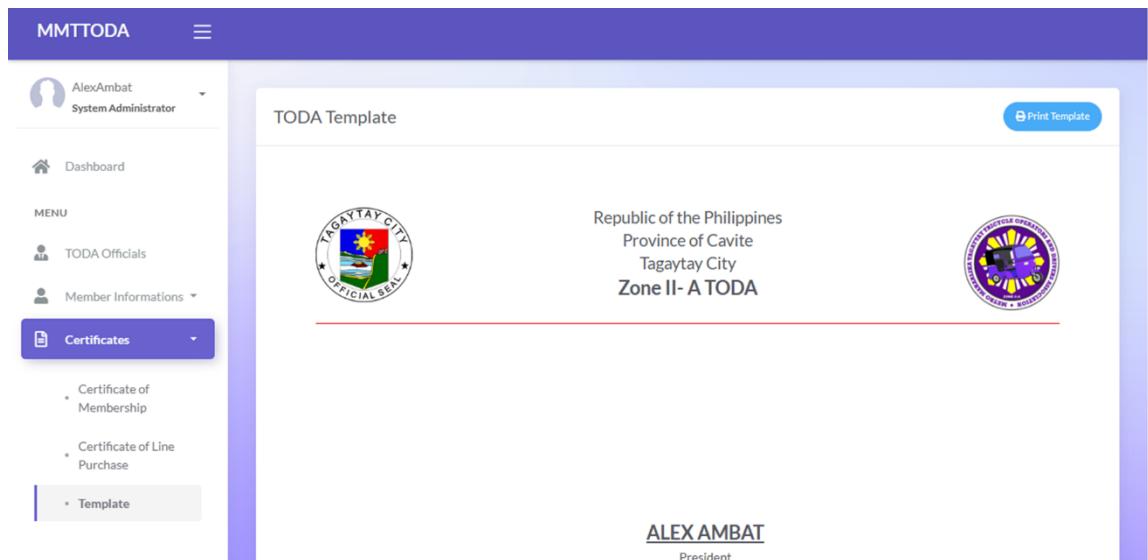


Figure 34. Generated TODA Template Page

Figure 34 shows the generated TODA template containing the logo and TODA information. The secretary and system administrator can add and edit the template body, and print the template.

ID no. ↑	Body no. ↑	Plate no. ↑	Full name ↑	Payable Fee ↑	Paid ↓	Balance ↓	Action ↑
4	003	AAA-333	Mahinay, Christian Abelong	300.00	0.00	300.00	
5	004	AAA-444	Balboa, Mary Rose Ann Gaza	300.00	0.00	300.00	

Figure 35. Member Contribution Fees Page

Figure 35 shows the table list of members with their payable fee, amount paid, and remaining balance based on the selected month of the year. The secretary and system administrator can view and edit payments for the current month but cannot edit past and upcoming months.

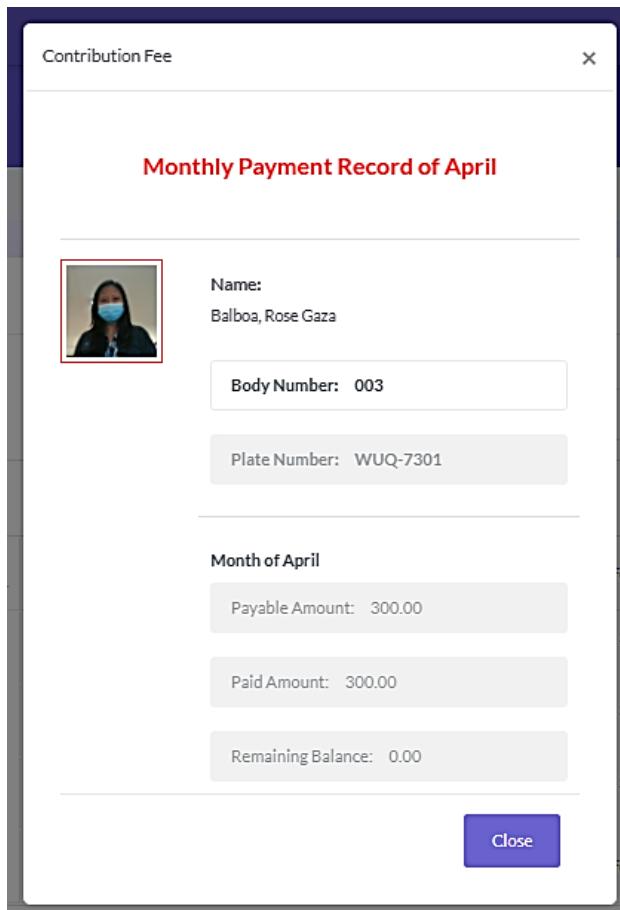


Figure 36. View Member's Payment Details Form

Figure 36 shows the members payment details that the secretary and system administrator can view based on selected month of the year.

The form is titled "Update Payment". It contains three main sections: "Full Name" with the value "Mahinay, Christian Abelong", "Months and Payable" with the value "June || 300.00", and "Payments" with the value "0.00". At the bottom right are two buttons: "Close" and "Update".

Figure 37. Edit/Update Payment Form

Figure 37 shows the modal form where the secretary and system administrator can edit or update payment of member based on selected month.

The page title is "List of Payments". It features a "Print Report" button. A search bar shows "Month: June 2023". The main content is a table with the following data:

Date	CF no.	Body no.	Plate no.	Fullname.	Paid Amount
May 29,2023 04:06 AM	4	003	AAA-333	Mahinay, Christian Abelong	300.00
Total					300.00

Figure 38. List of Payments Report Page

Figure 38 shows the table list of members' payments that are recorded in the system based on selected month and year. The secretary and system

administrator can print the report of members' payments based on selected month and year. The report contains the date of payments, contribution fee number of members, body numbers, plate numbers, names of members, and the paid amounts of members.

ID no.	Body no.	Plate no.	Full name	Payable Fee	Paid	Balance	Action
6	005	AAA-555	Pavillo, Judilyn Abalos	300.00	0.00	300.00	

Figure 39. Archived Member Fees Page

Figure 39 shows the table list of all fees of archived members that are recorded in the system. The system administrator can only view the record based on selected month.

The screenshot shows a modal window titled "Update TODA Info". It contains several input fields and logo sections. On the left, there's a sidebar with a user profile for "Administrator" and various menu items like "Dashboard", "TODA Officials", "Member Information", "Certificates", "Contribution Fee" (selected), and "Settings". The "Contribution Fee" section has sub-options "Member Fees" and "Payments Report". On the right, there's a "Print Report" button and a table showing "Paid Amount" and "Total" both at 300.00.

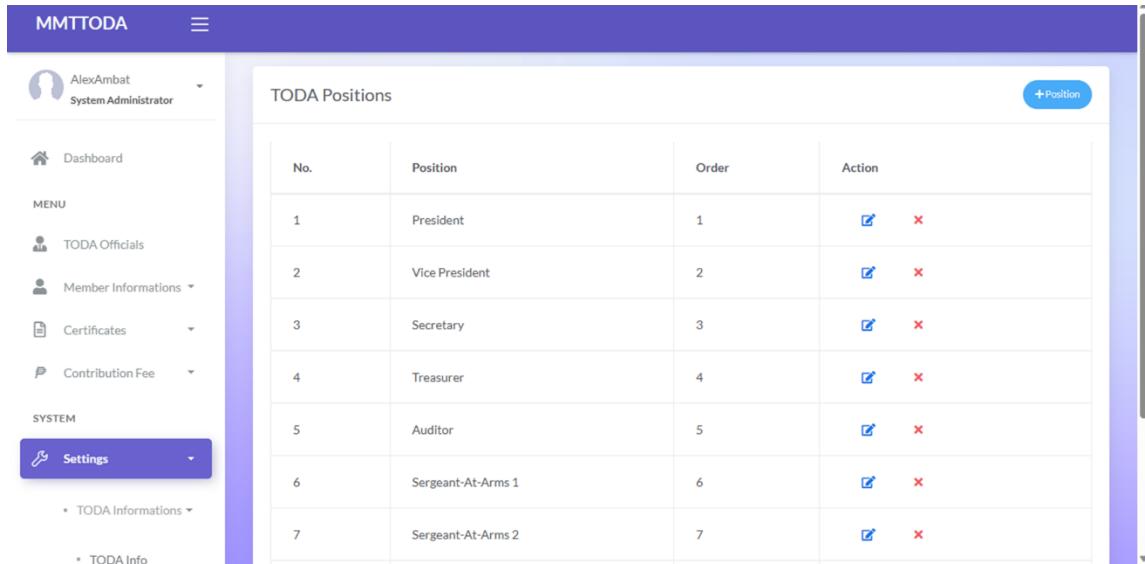
Figure 40. Update TODA Info Form

Figure 40 shows the modal form where the secretary and system administrator can edit or update TODA information. The form contains province name, city/town name, TODA name, TODA zone, dashboard text, municipality/city logo, TODA logo, the text boxes for the editing of TODA template, and the dashboard image.

The screenshot shows a table titled "TODA Color Coding" with four columns: No., Color Coding, Details, and Action. There are two entries: entry 1 has color coding "Blue" and details "Weekend"; entry 2 has color coding "Red" and details "Monday". A blue button labeled "+Color Coding" is located at the top right of the table. The sidebar on the left shows a user profile for "AlexAmbat System Administrator" and various menu items including "Dashboard", "TODA Officials", "Member Information", "Certificates", "Contribution Fee", "Settings" (selected), and "TODA Informations" and "TODA Info".

Figure 41. TODA Color Coding Page

Figure 41 shows the table list of color-coding schemes with their details. The system administrator can add, edit, and remove color coding.

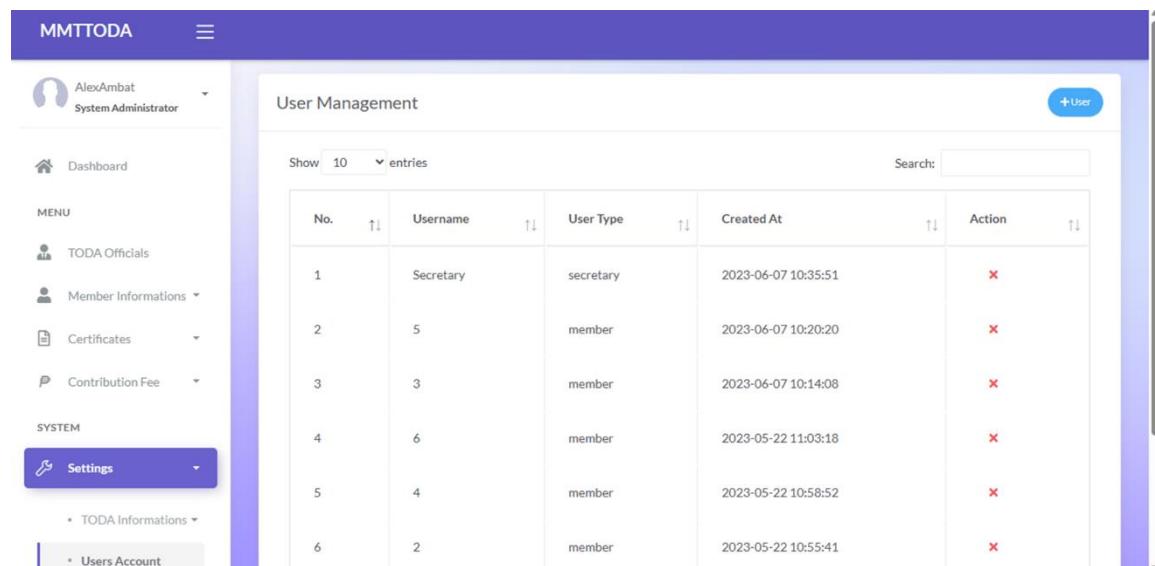


The screenshot shows a web-based administrative interface for 'TODA Positions'. The left sidebar, titled 'MMTTODA' and 'AlexAmbat System Administrator', includes a 'Settings' section with 'TODA Informations' and 'TODA Info' options. The main content area is titled 'TODA Positions' and displays a table with the following data:

No.	Position	Order	Action
1	President	1	<input checked="" type="checkbox"/> <input type="checkbox"/>
2	Vice President	2	<input checked="" type="checkbox"/> <input type="checkbox"/>
3	Secretary	3	<input checked="" type="checkbox"/> <input type="checkbox"/>
4	Treasurer	4	<input checked="" type="checkbox"/> <input type="checkbox"/>
5	Auditor	5	<input checked="" type="checkbox"/> <input type="checkbox"/>
6	Sergeant-At-Arms 1	6	<input checked="" type="checkbox"/> <input type="checkbox"/>
7	Sergeant-At-Arms 2	7	<input checked="" type="checkbox"/> <input type="checkbox"/>

Figure 42. TODA Positions Settings

Figure 42 shows the table list of TODA positions with their order. The system administrator can add, edit, and remove positions.



The screenshot shows a web-based administrative interface for 'User Management'. The left sidebar, titled 'MMTTODA' and 'AlexAmbat System Administrator', includes a 'Settings' section with 'TODA Informations' and 'Users Account' options. The main content area is titled 'User Management' and displays a table with the following data:

No.	Username	User Type	Created At	Action
1	Secretary	secretary	2023-06-07 10:35:51	<input type="checkbox"/>
2	5	member	2023-06-07 10:20:20	<input type="checkbox"/>
3	3	member	2023-06-07 10:14:08	<input type="checkbox"/>
4	6	member	2023-05-22 11:03:18	<input type="checkbox"/>
5	4	member	2023-05-22 10:58:52	<input type="checkbox"/>
6	2	member	2023-05-22 10:55:41	<input type="checkbox"/>

Figure 43. User Management Page

Figure 43 shows the table list of system users with their username, user type, and creation date. The system administrator can add and remove user and filter the table and search for user.

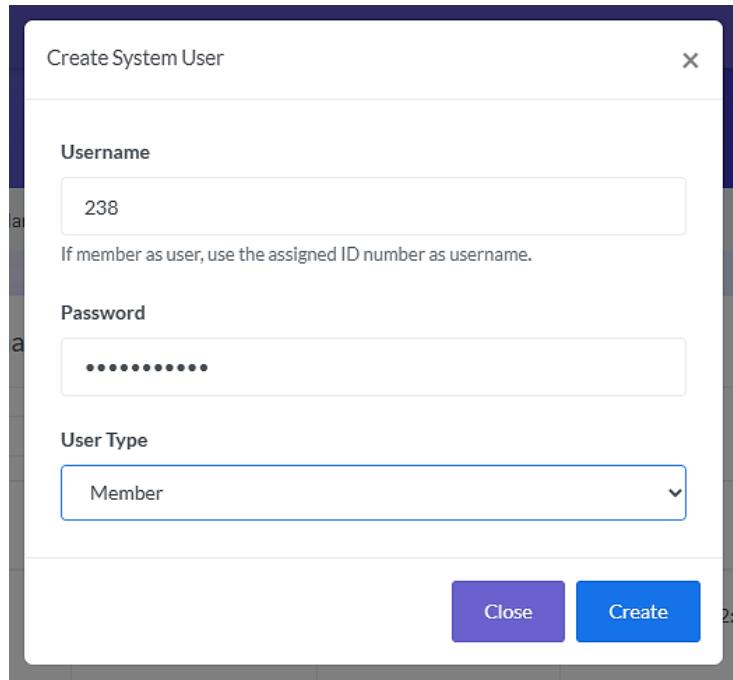


Figure 44. Create System User Form

Figure 44 shows the modal form where the system administrator can create system user that requires username, password, and type of user.

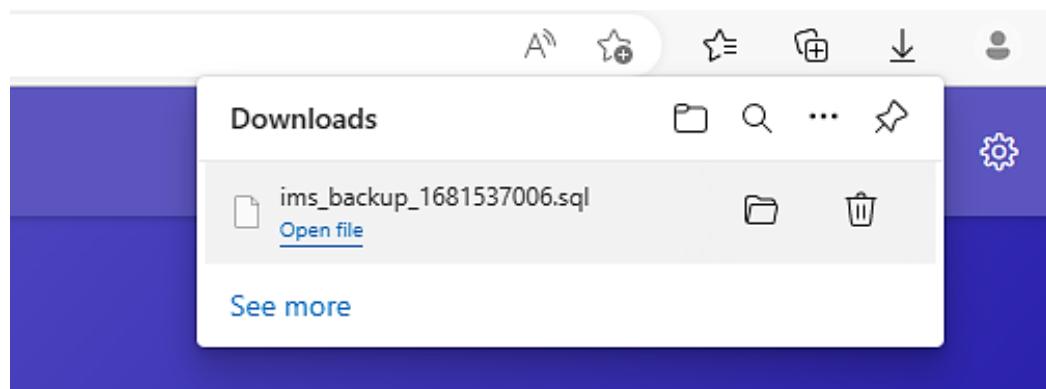


Figure 45. Backup Database

Figure 45 shows the SQL file that has been downloaded. The system administrator can download SQL file containing the tables of stored information in the system.

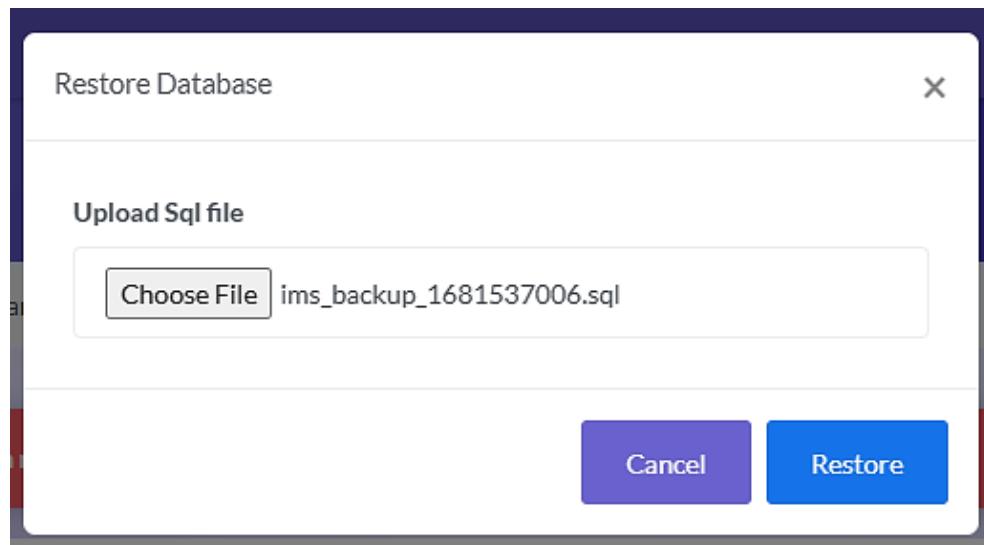


Figure 46. Restore Database Form

Figure 46 shows the modal form where the system administrator can upload SQL file to restore a database.

## **Project Evaluation**

The researchers conducted an evaluation of the developed system. The project evaluation consisted of six (6) categories namely: functionality, reliability, usability, efficiency, maintainability, and portability.

Functionality is the capability of the software product to provide functions that meet the stated and implied needs.

Reliability is the capability of the software to maintain a specified level of performance.

Usability refers to which a developed system can be utilized by specified clients to achieve quantified objectives with effectiveness, efficiency, and satisfaction.

Efficiency refers to the capability of the software to provide an appropriate performance relevant to the amount of resources.

Maintainability is the capability of the software to be modified. Modifications may include corrections, improvements, or adaptations of the system.

Portability refers to the software's level of adaptability.

The target respondents for the developed system are two hundred ninety-five (295) users composed of twenty-three (23) IT Professionals/Faculty, two (2) Clients, and two hundred seventy (270) students from City College of Tagaytay.

## Breakdown of the Respondents

The researchers used the sample size calculator by Raosoft, Inc. to identify the sample size using a 5% margin of error, a 95% confidence level, and a 50% response distribution. The population size for the students is 270 and 26 for the faculty members/IT professionals.

Sample size calculator		
What margin of error can you accept? 5% is a common choice	<input type="text" value="5"/> %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? Typical choices are 90%, 95%, or 99%	<input type="text" value="95"/> %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? If you don't know, use 20000	<input type="text" value="906"/>	How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.
What is the response distribution? Leave this as 50%	<input type="text" value="50"/> %	For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under <a href="#">More information</a> if this is confusing.
Your recommended sample size is	<b>270</b>	This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Figure 47. Raosoft Sample Size Calculator for Students from City College of Tagaytay

*Figure 47* shows the computation of the sample size of the students that resulted in a total of two hundred seventy (270) respondents. The researchers would need to obtain responses from two hundred seventy (270) out of a total of nine hundred six (906) students to confidently survey with a 5% margin of error.

The Raosoft Sample Size Calculator interface. At the top, it says "Sample size calculator". Below are five input fields with their corresponding descriptions:

- "What margin of error can you accept?" (5%) - Description: "The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size."
- "What confidence level do you need?" (95%) - Description: "The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size."
- "What is the population size?" (26) - Description: "How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000."
- "What is the response distribution?" (50%) - Description: "For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under [More Information](#) if this is confusing."
- "Your recommended sample size is" (25) - Description: "This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey."

**Figure 48. Raosoft Sample Size Calculator for Faculty/IT Professionals from City College of Tagaytay**

*Figure 48 shows the computation of the sample size for the faculty/IT professionals/clients, resulting in a total of 25 respondents. The researchers would need to obtain responses from twenty-five (25) out of a total of twenty-six (26) Faculty/IT Professionals to confidently survey with a 5% margin of error.*

*Table 2 provides the breakdown of the respondents who evaluated the system using an evaluation instrument questionnaire based on the ISO 9126 standard. The respondents were categorized into twenty-three (23) IT Professionals/Faculty, two (2) Clients, and two hundred seventy (270) Students.*

**Table 2. Breakdown of Respondents**

Respondents	Number	Percentage
Students	270	91.53%
Clients	2	0.68%
IT Professionals/Faculty	23	7.80%
<b>Total</b>	<b>295</b>	<b>100.00%</b>

### **Respondents' Assessment for Software Functionality**

*Table 3* shows the Assessment Result for the Functionality Criteria that resulted in a mean average of 4.35 which has a descriptive rating of “Excellent”. This indicates that the system is capable and meets the implied needs for the system’s functionality in terms of suitability, accuracy, interoperability, compliance, and security.

Table 3. Assessment Result for Functionality Criteria

<b>Indicators</b>	<b>Mean</b>	<b>Interpretation</b>
Suitability	4.40	Excellent
Accuracy	4.37	Excellent
Interoperability	4.39	Excellent
Compliance	4.29	Excellent
Security	4.28	Excellent
<b>Mean Average</b>	<b>4.35</b>	<b>Excellent</b>

#### **Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good
1.81 - 2.60	Fair
1.00 - 1.80	Poor

### **Respondents' Assessment for Software Reliability**

*Table 4* shows the Assessment Result for the Reliability Criteria that resulted in a mean average of 4.25 which has a descriptive rating of “Excellent”. This indicates that the system was capable and met the needs for the system’s reliability in terms of maturity, fault tolerance, and recoverability.

Table 4. Assessment Result for Reliability Criteria

Indicators	Mean	Interpretation
Maturity	4.24	Excellent
Fault Tolerance	4.24	Excellent
Recoverability	4.28	Excellent
<b>Mean Average</b>	<b>4.25</b>	<b>Excellent</b>

**Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good
1.81 - 2.60	Fair
1.00 - 1.80	Poor

**Respondents' Assessment for Software Usability**

*Table 5* shows the Assessment Result for the Usability Criteria that resulted in a mean average of 4.45 which has a descriptive rating of “Excellent”. This result indicates that the system is user-friendly.

Table 5. Assessment Result for Usability Criteria

Indicators	Mean	Interpretation
Understandability	4.51	Excellent
Learnability	4.46	Excellent
Operability	4.46	Excellent
Attractiveness	4.37	Excellent
<b>Mean Average</b>	<b>4.45</b>	<b>Excellent</b>

**Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good

1.81 - 2.60 Fair

1.00 - 1.80 Poor

### **Respondents' Assessment for Software Efficiency**

*Table 6* shows the Assessment Result for the Efficiency Criteria that resulted in a mean average of 4.41 which has a descriptive rating of “Excellent”. This indicates that the system is efficient and responsive.

Table 6. Assessment Result for Efficiency Criteria

Indicators	Mean	Interpretation
Time Behavior	4.45	Excellent
Resource Behavior	4.38	Excellent
<b>Mean Average</b>	<b>4.41</b>	<b>Excellent</b>

#### **Scale:**

4.21 - 5.00 Excellent  
 3.41 - 4.2 Very Good  
 2.61 - 3.4 Good  
 1.81 - 2.60 Fair  
 1.00 - 1.80 Poor

### **Respondents' Assessment for Software Maintainability**

*Table 7* shows the Assessment Result for the Maintainability Criteria that resulted in a mean average of 4.36 which has a descriptive rating of “Excellent”. This indicates that the system met the criteria for maintenance.

Table 7. Assessment Result for Maintainability Criteria

Indicators	Mean	Interpretation
Analyzability	4.36	Excellent
Changeability	4.32	Excellent
Stability	4.35	Excellent
Testability	4.42	Excellent
<b>Mean Average</b>	<b>4.36</b>	<b>Excellent</b>

**Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good
1.81 - 2.60	Fair
1.00 - 1.80	Poor

**Respondents' Assessment for Software Portability**

*Table 8 shows the Assessment Result for Portability Criteria that resulted in a mean average of 4.42 which has a descriptive rating of “Excellent”. This indicates that the system is portable, adaptable, and can be used in some software for different environments.*

Table 8. Assessment Result for Portability Criteria

Indicators	Mean	Interpretation
Adaptability	4.41	Excellent
Instability	4.46	Excellent
Conformity	4.42	Excellent
Replicability	4.40	Excellent
<b>Mean Average</b>	<b>4.42</b>	<b>Excellent</b>

**Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good
1.81 - 2.60	Fair
1.00 - 1.80	Poor

**Respondents' Overall Assessment of the System**

*Table 9* shows the Summary of Evaluation that resulted in a mean average of 4.38 which has a descriptive rating of “Excellent”. The Usability Criteria obtained the highest mean average of 4.45 which indicates that the system is user-friendly and suits usable requirements. The second to the highest criteria is portability followed by efficiency, maintainability, functionality, and lastly reliability.

Table 9. Summary of Evaluation

Indicators	Mean	Interpretation
Functionality	4.35	Excellent
Reliability	4.25	Excellent
Usability	4.45	Excellent
Efficiency	4.41	Excellent
Maintainability	4.36	Excellent
Portability	4.42	Excellent
<b>Mean Average</b>	<b>4.38</b>	<b>Excellent</b>

**Scale:**

4.21 - 5.00	Excellent
3.41 - 4.2	Very Good
2.61 - 3.4	Good
1.81 - 2.60	Fair
1.00 - 1.80	Poor

## **CHAPTER V**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

This chapter presents the summary of findings, conclusions, and recommendations based on the result of the test and evaluation.

#### **Summary**

The system, "Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association", was developed for MMTTODA to improve their information management with the use of an online system.

The system, "Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association", was developed for MMTTODA to improve their information management with the use of an online system.

The Metro Maharlika Tagaytay Tricycle Operators and Drivers Association located in Tagaytay City, currently stores their association's information solely in a spreadsheet without any database backup. Based on the conducted interview, the president is responsible for maintaining an Excel spreadsheet to manage information about members, officials, and monthly contribution payments. Additionally, a Word document is used to store and write certificates. Meanwhile, the secretary is required to manually search for members' data, such as tricycle information, while also managing officials and handling monthly contribution fee

payments. Unfortunately, members are unable to verify the accuracy of their monthly fee payment listings.

The main objective of the study is to develop a system called "Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association" to optimize the process, security, storage, and availability of members' information and monthly contribution fee payments, as well as manage officials and generating and printing reports.

The researchers analyzed the gathered information and decided to utilize a context diagram and data flow diagram to determine the potential flow of the study. The researchers used Notepad++, PHP, MySQL, HTML, CSS, Bootstrap, JavaScript, XAMPP, and Web Browser to ensure the efficiency of the system.

The system is composed of four (4) modules, namely the Account Management Module, the Record Management Module, the Contribution Management Module, and the Report Management Module. The Account Management Module is used for creating user accounts and logging in to the system. The Record Management Module is used for managing members' information. Contribution Management Module is used for managing and viewing the monthly contribution fee payments of the members. Report Management Module is used for generating reports such as certificates and master lists, as well as generating and printing the members' monthly contribution fee report.

The system is intended for three (3) users, namely: (1) the System Administrator, (2) Secretary, and (3) Members. The System Administrator is

responsible for creating accounts for the members and secretary, managing member information, and managing the monthly contribution fee records of the members. The Secretary is responsible for managing members' information as well as managing the monthly contribution fee, except for archiving the member's information. The member is only responsible for viewing their unit, personal records, and their personal contribution fee payments.

The iterative process model was the software methodology selected to guide the system's development. This is an approach to software development that centers on the idea of moving development cyclically rather than trying to do everything all at once. The following phases are initial planning, planning, requirements, analysis and design, implementation, testing, evaluation, and deployment.

A survey questionnaire based on ISO 9126 standard is used as the main tool for collecting and ranking system performance. The study was composed of two hundred ninety-five (295) respondents: twenty-three (23) IT Professionals/Faculty, two (2) Clients, and two hundred seventy (270) Students from the City College of Tagaytay. The questionnaire was divided into six (6) categories, namely: (1) functionality; (2) reliability; (3) usability; (4) efficiency; (5) maintainability; and (6) portability. The developed system has an overall rating of 4.38 with a descriptive rating of "Excellent", which highly suggests that it met all the criteria and exceeded several expectations.

## Conclusions

Considerations of study objectives and the testing and evaluation results draw the following conclusions:

1. The researchers gathered the necessary information for the system through an interview with the client, such as a printed copy of the data of the members, a list of officials and positions, a template of a certificate of membership, and a certificate of line purchase, and the logo of the association;
2. The system was developed using Notepad++, PHP, HTML, CSS, Bootstrap, JavaScript, XAMPP, and MySQL for the database;
3. The developed system, titled "Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association", has the following capabilities:
  - a. providing a system that manages the MMTTODA's information;
  - b. providing an account for the system administrator;
  - c. allowing the system administrator to manage and create accounts for members and the secretary;
  - d. providing a forgot password option for forgotten or compromised passwords for members, secretary, and system administrator;
  - e. providing the system administrator with different graphical representations of data stored in the system;
  - f. allowing the secretary and a system administrator to manage officials, members, and monthly contribution fees;

- g. generating and printing certificates and reports; and
  - h. enabling members to view their unit and personal information, as well as their monthly contribution fee records.
- 
- 4. The system was subjected to unit, integration, acceptance, performance, and system testing, and this resulted in the system working as expected;
  - 5. The system was evaluated for conformity with ISO 9126 standards, which resulted in a mean average of 4.38, which has a descriptive rating of "Excellent"; and
  - 6. The researchers deployed the online system to the client by sending a website link to the online system and providing the client with a CD containing a copy of the system.

## **Recommendations**

Based on the foregoing findings of the study, the following are recommended for the future enhancement of the developed Web-based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association. Further modifications of the system are still recommended for enhancements based on the study's findings.

Therefore, it is recommended that the following functions be added:

1. Allow members to register their information.
2. Add a feature that allows members to settle their monthly contribution fee payments online.
3. Add a printing receipt feature for the contribution fee of the member.
4. Add a feature that allows members to request a generated certificate online.
5. Add an agreement for both parties within the system to comply with the Data Privacy Act of 2012.
6. Include a section to display the list of driver(s) under a member's line record.

## REFERENCES

- Aezion (n.d.). What is a Web Based System? Retrieved July 29, 2022, from <https://www.aezion.com/blogs/the-benefits-of-web-based-systems-for-business/>
- Baybay, D., Dela Cruz, R., Derla, M., Mojica, V. A., & Pangilinan, P. M. (2019, March). Development of Management Information System for The Senior Citizen's Office in Tagaytay City. City College of Tagaytay.
- Bedua, M., Napoles, C., & Umandap, J. (2019, March). Development of Financial Assistance in Information 7th District Office. City College of Tagaytay.
- Bharamagoudar, S.R., Geeta, R.B, & Totad, S.G. (2013, June 6). Web Based Student Information Management System. International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Retrieved July 29, 2022, from <https://www.ijarcce.com/upload/2013/june/4-shobha%20bharamaoudar-WEB%20BASED%20STUDENT%20INFORMATION.pdf>
- Cantos, M. C., Rabago, L., & Tanguilig, B. (2015, October 5). Mobile Web-Based Student Integrated Information System. International Journal of Machine Learning and Computing. <http://www.ijmlc.org/vol5/534-C0010.pdf>
- Chris, K. (2021, August 30). What is PHP? The PHP Programming Language Meaning Explained. FreeCodeCamp. Retrieved July 29, 2022, from [https://www.freecodecamp.org/news/what-is-php-the-php-programming-language-meaning-explained/#:~:text=PHP%20is%20an%20open%2Dsource,Graphical%20User%20Interfaces%20\(GUIs\)](https://www.freecodecamp.org/news/what-is-php-the-php-programming-language-meaning-explained/#:~:text=PHP%20is%20an%20open%2Dsource,Graphical%20User%20Interfaces%20(GUIs))
- Cuadra, M., Hemor, J., Gomez, R., & Banario, A. J. (2022, April). Web-Based Tagaytay City Government Employee Multi-Purpose Cooperative Record Management with Information System. City College of Tagaytay.
- Danlog, K. P., Rebujo, E. C., De Guzman, P., Arrieta, K. I., & Carranza, B.D. (2017). Computerized Record Management System of one National High School in the Philippines. Southeast Asian Journal of Science and Technology. Retrieved July 27, 2022, from <https://sajst.org/online/index.php/sajst/article/download/130/80>
- Decker, A. (2022, May 5). The Beginner's Guide to Website Development. Hubspot. Retrieved July 27, 2022, from <https://blog.hubspot.com/website/website-development>

- Domantas G. (2022, September 14). What Is Web Hosting – Web Hosting Explained for Beginners. Hostinger Tutorials. Retrieved September 22, 2022, from [https://www.hostinger.in/tutorials/what-is-web-hosting/?fbclid=IwAR2eqNn-CTNs1c2UJPTafgSO57sl7weTUVjyFnhp0dMe8KKP\\_FLJmagc90](https://www.hostinger.in/tutorials/what-is-web-hosting/?fbclid=IwAR2eqNn-CTNs1c2UJPTafgSO57sl7weTUVjyFnhp0dMe8KKP_FLJmagc90)
- Druva (n.d.). Data archiving definition. Retrieved July 29, 2022, from <https://www.druva.com/glossary/what-is-data-archiving-definition-and-related-faqs/#:~:text=Data%20archiving%20is%20the%20practice,be%20brought%20back%20into%20service>.
- Eroles, L. L., Dela Cruz, A., Ilag, R., & Opo, M. (2016, August). Development of Information System for Barangay Pajo, Alfonso Cavite. City College of Tagaytay.
- Ezinwa, N. (2021, November 2). A Web - Based Alumni Database Management System. Repository.mouau.edu.ng: Retrieved July 27, 2022, from <https://repository.mouau.edu.ng/work/view/a-web-based-alumni-database-management-system-7-2>
- Fitzgerald, A. (2022, April 12). The Ultimate Guide to HTML for Beginners: How to Write, Learn & Use It. Hubspot. Retrieved July 29, 2022, from <https://blog.hubspot.com/website/html>
- GeeksforGeeks. (2022, May 23). JavaScript. Retrieved July 29, 2022, from <https://www.geeksforgeeks.org/javascript/>
- Giaquinto, R. (n.d.). What is Apache and What Does it Do for Website Development? GreenGeeks. Retrieved July 29, 2022, from <https://www greengeeks.com/blog/what-is-apache/>
- Gonzales, R. J. (2016). The Development of Online Student Information System (Osis) For City College of Tagaytay. Research Study. City College of Tagaytay
- GreenGeeks. (2022, June 14). ISO/IEC 9126 in Software Engineering. Retrieved July 29, 2022, from <https://www.geeksforgeeks.org/iso-iec-9126-in-software-engineering/>
- Imus, J. K, Magleo, E., Soriano, M. A., & Olalia, R., Jr. (2018, February 19). Barangay Management Information System (BMIS) For Cities and Municipalities in The Philippines. International Journal of Computer Applications. <https://www.ijcaonline.org/archives/volume180/number19/imus-2018-ijca-916441.pdf>

- Indeed Editorial Team. (2021, November 24) What Is an Information Management System? (With Features). Retrieved July 27, 2022, from <https://ca.indeed.com>
- Jattheon Blog. (2021, August 16). What Is Data Archiving: Definition, Benefits and Best Practices. Retrieved July 27, 2022, from <https://jattheon.com/blog/data-archiving-benefits/>
- Jauniškis, P. (2022, March 30). Types of browsers: Your roadmap to finding Mr. Right. Surfshark. Retrieved July 29, 2022, from <https://surfshark.com/blog/types-of-browsers#:~:text=A%20web%20browser%20is%20a,Apple%20Safari%2C%20and%20Microsoft%20Edge>.
- Johnson, R. (2022, July 2). What is a Programming Language? Study.com. Retrieved July 29, 2022, from <https://study.com/learn/lesson/programming-language-types-examples.html>
- Kurniawan, A., Suryanti, Nurlaela, L., Indahwati., N., Bhilawa, L., & Dermawan, D. A. (2021, December 16). Development of A Web-Based Financial Information System for Independent Educational Accreditation Institutions. Atlantis Press. <https://www.atlantis-press.com/proceedings/ijcse-21/125966517>
- Lubanga, S., Chawinga, W., Majawa, F., & Kapondera, S. (2018). Web Based Student Information Management System in Universities: Experiences from Mzuzu University. ResearchGate. [https://www.researchgate.net/publication/325106323\\_WEB\\_BASED\\_STUDENT\\_INFORMATION\\_MANAGEMENT\\_SYSTEM\\_IN\\_UNIVERSITIES\\_EXPERIENCES\\_FROM\\_MZUZU\\_UNIVERSITY](https://www.researchgate.net/publication/325106323_WEB_BASED_STUDENT_INFORMATION_MANAGEMENT_SYSTEM_IN_UNIVERSITIES_EXPERIENCES_FROM_MZUZU_UNIVERSITY)
- Lutkevich, B. (2021, September). What is a database? Search Data Management. Retrieved July 29, 2022, from <https://www.techtarget.com/searchdatamanagement/definition/database#:~:text=A%20database%20is%20information%20that,data%2C%20financials%20and%20product%20information>.
- Macawile, H. J., Delos Angeles, A., Gloriani, R. I., Oareza, C., & Rozul, R. (2019, March). Development of Record Keeping System and Monitoring of Coffee Farmers for Amadeo Farmers Information and Technology Services Centre. City College of Tagaytay.
- Malak, H. (2021, November 18). Data vs Information: What's the Difference? The ECM Consultant. Retrieved July 27, 2022, from <https://theecmconsultant.com/data-vs-information/>

- MDN Plus. (2022, May 2). CSS: Cascading Style Sheets. Retrieved July 29, 2022, from [https://developer.mozilla.org/en-US/docs/Web/CSS#key\\_resources](https://developer.mozilla.org/en-US/docs/Web/CSS#key_resources)
- Mkpojiogu, E., Akusu, G., Hussain, A., & Hashim, W. (2020). Implementation of a Web-based Data Archival Management System. 29. 307-319. ResearchGate.  
[https://www.researchgate.net/publication/341680207\\_Implementation\\_of\\_a\\_Web-based\\_Data\\_Archival\\_Management\\_System](https://www.researchgate.net/publication/341680207_Implementation_of_a_Web-based_Data_Archival_Management_System)
- Moges & Bezu (2021). Garage Management Information System for Addis Ababa Police Commission. St. Mary's University Institutional Repository.  
<http://www.repository.smuc.edu.et/handle/123456789/6421>
- Naveen. (2022, April 29). What is RDBMS? Intellipaat. Retrieved July 29, 2022, from <https://intellipaat.com/blog/tutorial/sql-tutorial/rdbms/#:~:text=RDBMS%20stands%20for%20Relational%20Data%20base,MySQL%2C%20MariaDB%2C%20and%20SQLite>
- Paul, R., Mbeledogu, N., Sunday, B., Emmanuel, M., & Nwokoye, C. (2022, April 4). Web-Based Information Management System for Educational Institutions in Riverine Areas. Acta Scientific Computer Sciences.  
<https://actascientific.com/ASCS/pdf/ASCS-04-0249.pdf>
- Sarangam, A. (2022, August 25). Difference Between Analysis and Analytics | Which Is Better? UNext Jigsaw. Retrieved September 17, 2022, from <https://www.jigsawacademy.com/blogs/business-analytics/analysis-vs-analytics/#:~:text=2.-,Key%20Difference%20between%20Data%20Analysis%20and%20Data%20Analytics,make%20well%2Dversed%20business%20decisions.>
- SourceForge. (2022, July 20). Notepad++. Retrieved July 29, 2022, from <https://sourceforge.net/projects/notepadplusplus.mirror/>
- Spamast-Malita, I. (2018, May). Web-Based Barangay Information System for Malita, Davao Occidental. 10.13140/RG.2.2.24939.64801. ResearchGate.  
[https://www.researchgate.net/publication/325465116\\_Web-Based\\_Brangay\\_Information\\_System\\_for\\_Malita\\_Davao\\_Occidental](https://www.researchgate.net/publication/325465116_Web-Based_Brangay_Information_System_for_Malita_Davao_Occidental)
- Tri Hidayat, A., Dewantara, A., & Saifullah, S. (2020). The Development of Website on Management Information System for E-commerce and Services. Jurnal Sisfokom (Sistem Informasi dan Komputer). 9. 380-386. 10.32736/sisfokom.v9i3.992.  
[https://www.researchgate.net/publication/345349990\\_The\\_Development\\_of\\_Website\\_on\\_Management\\_Information\\_System\\_for\\_E-commerce\\_and\\_Services](https://www.researchgate.net/publication/345349990_The_Development_of_Website_on_Management_Information_System_for_E-commerce_and_Services)

- Undsgn. (2018, March 23). XAMPP Tutorial: How to Use XAMPP To Set Up mWordpress On Localhost. Retrieved July 29, 2022, from <https://undsgn.com/xampp-tutorial/>
- Vasiliuk, A. (2022, February 23). What is MySQL? Aiven. Retrieved July 29, 2022 from, <https://aiven.io/blog/what-is-mysql>
- Vidgen, R., Avison, D., Wood, B., & Wood-Harper, T. (2002). Developing Web Information Systems. ResearchGate. [https://www.researchgate.net/publication/267222367\\_Developing\\_Web\\_Information\\_Systems](https://www.researchgate.net/publication/267222367_Developing_Web_Information_Systems)
- Wibisono, R. S., Sofianti, T., & Wibowo, S. (2016). Development of A Web-Based Information System for Material Inventory Control: The Case of An Automotive Company. Commit (Communication and Information Technology) Journal. 10. 71-83.10.21512/commit.v10i2.1579. [https://www.researchgate.net/publication/308647958\\_Development\\_of\\_A\\_Web-Based\\_Information\\_System\\_for\\_Material\\_Inventory\\_Control\\_The\\_Case\\_o\\_f\\_An\\_Automotive\\_Company](https://www.researchgate.net/publication/308647958_Development_of_A_Web-Based_Information_System_for_Material_Inventory_Control_The_Case_o_f_An_Automotive_Company)
- Wibowo Yunanto, P., Nurhidayat, D., & Wicaksono, R. (2019). Development of Web-based Information System for Universitas Negeri Jakarta. KnE Social Sciences, 3(12), 453–461. <https://doi.org/10.18502/kss.v3i12.4113>

## **APPENDICES**

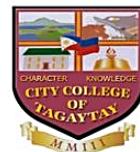
## Appendix A. Summary of Evaluation Results

Indicators	IT Professionals	Student	Mean Average	Descriptive Rating
<b>FUNCTIONALITY</b>				
Suitability	4.28	4.53	4.40	<b>Excellent</b>
Accuracy	4.24	4.51	4.37	<b>Excellent</b>
Interoperability	4.28	4.50	4.39	<b>Excellent</b>
Compliance	4.08	4.51	4.29	<b>Excellent</b>
Security	4.08	4.47	4.28	<b>Excellent</b>
<b>Average:</b>			<b>4.35</b>	
<b>RELIABILITY</b>				
Maturity	4.00	4.48	4.24	<b>Excellent</b>
Fault Tolerance	4.00	4.48	4.24	<b>Very Good</b>
Recoverability	4.04	4.53	4.28	<b>Very Good</b>
<b>Average:</b>			<b>4.25</b>	
<b>USABILITY</b>				
Understandability	4.44	4.58	4.51	<b>Excellent</b>
Learnability	4.40	4.52	4.46	<b>Excellent</b>
Operability	4.40	4.53	4.46	<b>Excellent</b>
Attractiveness	4.24	4.50	4.37	<b>Excellent</b>
<b>Average:</b>			<b>4.45</b>	
<b>EFFICIENCY</b>				
Time Behavior	4.36	4.54	4.45	<b>Excellent</b>
Resource Behavior	4.24	4.51	4.38	<b>Excellent</b>
<b>Average:</b>			<b>4.41</b>	
<b>MAINTAINABILITY</b>				
Analyzability	4.24	4.49	4.36	<b>Excellent</b>
Changeability	4.12	4.51	4.32	<b>Excellent</b>
Stability	4.16	4.54	4.35	<b>Excellent</b>
Testability	4.32	4.51	4.42	<b>Excellent</b>
<b>Average:</b>			<b>4.36</b>	
<b>PORTABILITY</b>				
Adaptability	4.28	4.53	4.41	<b>Excellent</b>
Instability	4.44	4.48	4.46	<b>Excellent</b>
Conformity	4.28	4.56	4.42	<b>Excellent</b>
Replaceability	4.28	4.52	4.40	<b>Excellent</b>
<b>Average:</b>			<b>4.42</b>	
<b>OVERALL MEAN AVERAGE</b>	<b>4.24</b>	<b>4.51</b>	<b>4.38</b>	<b>Excellent</b>

## Appendix B. Sample Evaluation Sheet Instrument



Republic of the Philippines  
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 Tel. Nos. (046) 483-0470 / (046) 483-0672



### SCHOOL OF COMPUTER STUDIES

**Title: DEVELOPMENT OF WEB-BASED ONLINE INFORMATION MANAGEMENT SYSTEM WITH DATA ANALYTICS FOR METRO MAHARILKA TAGAYTAY TRICYCLE OPERATORS AND DRIVERS ASSOCIATION**

**Proponents:** Mary Rose Ann G. Balboa, Christian A. Mahinay, Jezryl Mae P. Robis, Edson M. Angcaya, Judilyn A. Pavillo

Evaluator Name: \_\_\_\_\_

Type of Evaluator:  IT Professional  Client/Instructor  Student

**Instruction:** Please kindly evaluate the software material by using the given scale and placing a checkmark (✓) under the corresponding numerical rating.

NUMERICAL RATING	INTERPRETATION	DEFINITION
5	Excellent	The system fully meets and far exceeds the most expectations.
4	Very Good	The system fully meets all and exceeds several expectations.
3	Good	The system fully meets all expectations.
2	Fair	The system does not fully meet all expectations.
1	Poor	The system fails to meet expectation to a significant degree in several areas.

INDICATORS	5	4	3	2	1
<b>A. FUNCTIONALITY</b> (capability of the software product to provide functions which meet stated and implied needs).					
Suitability (appropriateness to specifications of the function of the software).					
Accuracy (correctness of the functions).					
Interoperability (ability of the software to interact with other components or system).					
Compliance (compliant capability of software in terms of laws and guidelines).					
Security (this relates to unauthorized access to the software).					
<b>B. RELIABILITY</b> (capability of the software product to maintain a specified level of performance).					

Maturity (this concern with the frequency of failure of the system).				
Fault-tolerance (ability of the software to withstand and recover from component or environmental failure).				
Recoverability (ability to bring back the failed system to full operation including data needed).				
<b>C. USABILITY</b> (capability of the software product to be understood, learned, used and attractive to the user).				
Understandability (determines the ease of which the system functions can be understood).				
Learnability (learning effort for different users).				
Operability (ability of the software to be easily operated by a given user in a given environment).				
Attractiveness (attribute of software that has the capability of the software product to be attractive to the user).				
<b>D. EFFICIENCY</b> (capability of the software product to provide appropriate performance, relative to the amount of resources used).				
Time behavior (characterized response times for a given throughput).				
Resource behavior (characterizes resources used).				
<b>E. MAINTABILITY</b> (capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to changes in environment).				
Analyzability (ability to identify the root cause of a failure within the software).				
Changeability (amount of effort to change a system).				
Stability (sensitivity to change of a given system).				
Testability (effort needed to verify/test a system change).				
<b>F. PORTABILITY</b>				
Adaptability (ability of the system to change new specification or operating environments).				
Instability (the effort required to install the software).				
Conformity (relates to portability of database used).				
Replaceability (plug and play aspects of software components).				

Based on ISO 9126

**Findings:**

---



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**Recommendations:**

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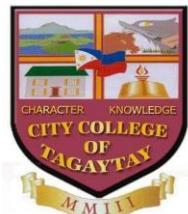
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\_\_\_\_\_  
Signature

## Appendix C. Letters/Approval Sheet



Republic of the Philippines  
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 Tel. Nos. (046) 483-0470 / (046) 483-0672



### SCHOOL OF COMPUTER STUDIES

**Capstone Project of:** **Balboa, Mary Rose Ann G.**  
**Mahinay, Christian A.**  
**Robis, Jezryl Mae P.**  
**Angcaya, Edson M.**  
**Pavillo, Judilyn A.**

**Title: DEVELOPMENT OF WEB-BASED ONLINE INFORMATION MANAGEMENT SYSTEM WITH DATA ANALYTICS FOR METRO MAHARLIKA TAGAYTAY TRICYCLE OPERATORS AND DRIVERS ASSOCIATION**

### APPROVED:

**ALDWIN KARLO M. ANGCAYA**  
 Adviser

Date

**REGGIE MAR B. DE CASTRO**  
 Unit Research Coordinator

Date

**JEFERLYN A. AÑONUEVO**  
 School Dean

Date

#### Note:

Original copy to be filed in the College Library and one copy to the following: College Research and Extension Service Office, School of Computer Studies and capstone project students.



**Republic of the Philippines  
 City of Tagaytay  
 CITY COLLEGE OF TAGAYTAY  
 SCHOOL OF COMPUTER STUDIES**



Department of Information Technology

**APPROVAL SHEET  
 Capstone Project**

This capstone project proposal entitled **Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association**, prepared and submitted by **Balboa, Mary Rose Ann G., Mahinay, Christian A., Robis, Jezryl Mae P., Angcaya, Edson M., Pavillo, Judilyn A.** in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology, is recommended for **ORAL DEFENSE**.

**Date of Final Defense :** October 17, 2023

**ALDWIN KARLO M. ANGCAYA**  
 Adviser

**PANEL OF EVALUATORS**

**MICHAEL JEFFREY A. AÑONUEVO**  
 Member

**ANGELITO M. CARAAN**  
 Member

**REGGIE MAR B. DE CASTRO**  
 Unit Research Coordinator

**Recommending Approval:**

**REGGIE MAR B. DE CASTRO**  
 Chair

**Approved:**

**JEFERLYN A. AÑONUEVO**  
 School Dean

City of Tagaytay  
**CITY COLLEGE OF TAGAYTAY**  
**SCHOOL OF COMPUTER STUDIES**  
Department of Information Technology

**APPROVAL SHEET**  
**Capstone Project**

This capstone project proposal entitled **Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association**, prepared and submitted by **Balboa, Mary Rose Ann G., Mahinay, Christian A., Robis, Jezryl Mae P., Angcaya, Edson M., Pavillo, Judilyn A.** in partial fulfillment of the requirements for the degree Bachelor of Science in Information Technology, has been examined, accepted and recommended for **APPROVAL**.

**ALDWIN KARLO M. ANGCAYA**  
Adviser

Approved by the PANEL OF EXAMINERS for ORAL DEFENSE with a grade of  
**PASSED with MINOR / MAJOR REVISION**

**REGGIE MAR B. DE CASTRO**  
Unit Research Coordinator

**MICHAEL JEFFREY A. AÑONUEVO**  
Member

**ANGELITO M. CARAAN**  
Member

Accepted as partial fulfillment of the requirements for the degree Bachelor of Science in Information Technology

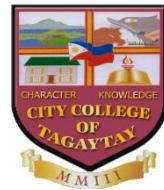
**REGGIE MAR B. DE CASTRO**  
Department Chair

**JEFERLYN A. AÑONUEVO**  
School Dean



**CITY COLLEGE OF TAGAYTAY  
SCHOOL OF COMPUTER STUDIES**

Department of Information Technology



**APPROVAL SHEET  
Capstone Project**

This capstone project proposal entitled **Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association**, prepared and submitted by **Balboa, Mary Rose Ann G., Mahinay, Christian A., Robis, Jezryl Mae P., Angcaya, Edson M., Pavillo, Judilyn A.** in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology, is recommended for **FINAL DEFENSE**.

**Date of Final Defense : May 3, 2023**

**ALDWIN KARLO M. ANGCAYA**  
Adviser

**PANEL OF EVALUATORS**

**MICHAEL JEFFREY A. AÑONUEVO**  
Member

**ANGELITO M. CARAAN**  
Member

**REGGIE MAR B. DE CASTRO**  
Unit Research Coordinator

**Recommending Approval:**

**REGGIE MAR B. DE CASTRO**  
Chair

**Approved:**

**JEFERLYN A. AÑONUEVO**  
School Dean



Republic of the Philippines  
 City of Tagaytay  
**CITY COLLEGE OF TAGAYTAY**  
**SCHOOL OF COMPUTER STUDIES**  
 Department of Information Technology



**APPROVAL SHEET**  
**Capstone Project**

This capstone project proposal entitled **Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association**, prepared and submitted by **Balboa, Mary Rose Ann G., Mahinay, Christian A., Robis, Jezryl Mae P., Angcaya, Edson M., Pavillo, Judilyn A.** in partial fulfillment of the requirements for the degree Bachelor of Science in Information Technology, has been examined, accepted and recommended for **APPROVAL**.

**ALDWIN KARLO M. ANGCAYA**  
 Adviser

Approved by the PANEL OF EXAMINERS for ORAL DEFENSE with a grade of  
 PASSED with MINOR / MAJOR REVISION

**REGGIE MAR B. DE CASTRO**  
 Unit Research Coordinator

**MICHAEL JEFFREY A. AÑONUEVO**  
 Member

**ANGELITO M. CARAAN**  
 Member

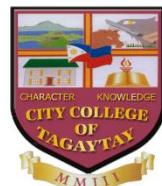
Accepted as partial fulfillment of the requirements for the degree Bachelor of Science in Information Technology

**REGGIE MAR B. DE CASTRO**  
 Department Chair

**JEFERLYN A. AÑONUEVO**  
 School Dean

*SCS Form No.2*

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### SCHOOL OF COMPUTER STUDIES

May 3, 2023

**JEFERLYN A. AÑONUEVO**

Dean, School  
This College

Madam,

We wish to apply for an oral review of the outline/final result of our thesis entitled **Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association** on May 3, 2023 at 1:00 pm at the City College of Tagaytay.

Thank you.

Respectfully yours,

**Balboa, Mary Rose Ann G.**

**Mahinay, Christian A.**

**Robis, Jezryl Mae P.**

**Angcaya, Edson M.**

**Pavillo, Judilyn A.**

### Recommending Approval:

**ALDWIN KARLO M. ANGCAYA**  
Adviser

Date

**REGGIE MAR B. DE CASTRO**  
Unit Research Coordinator

Date

## Appendix D. Certification for English Critique



Republic of the Philippines  
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 Akle St., Kaybagal South, Tagaytay City 4120



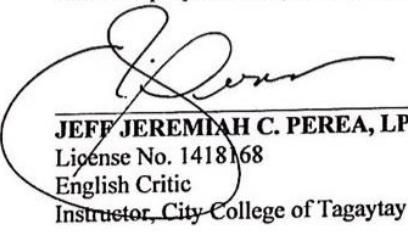
### CERTIFICATION OF ENGLISH CRITIQUE

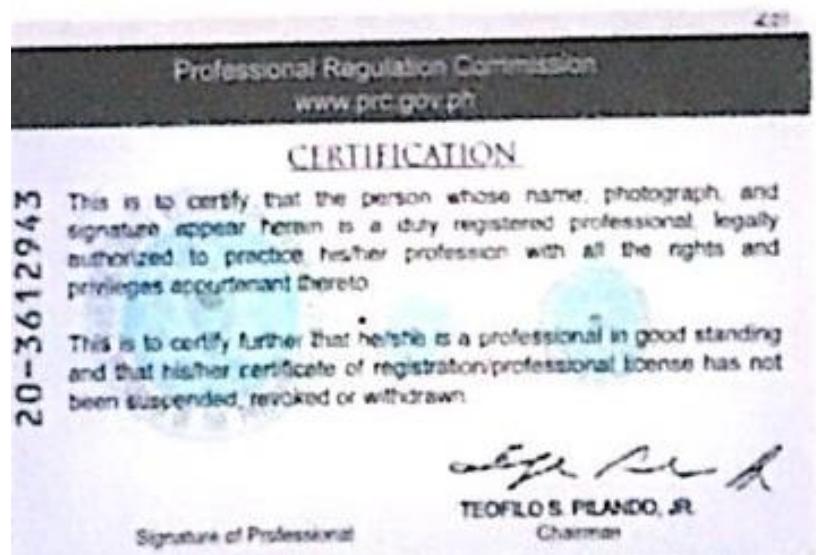
To whom it may concern:

This is to certify that the undersigned has read, reviewed, and edited the Capstone Project, WEB-BASED ONLINE INFORMATION MANAGEMENT SYSTEM WITH DATA ANALYTICS FOR METRO MAHARLIKA TAGAYTAY TRICYCLE OPERATORS AND DRIVERS ASSOCIATION by *Edson M. Angcaya, Mary Rose Ann G. Balboa, Christian A. Mahinay, Judilyn A. Pavillo, and Jezryl Mae P. Robis* as a requirement for the degree, Bachelor of Science in Information Technology.

This further certifies that the scope of editing is within only the technical preparation and grammatical evaluation of the manuscript.

This certification is issued to the abovementioned student on this 26<sup>th</sup> day of June 2023 for whatever purpose it may serve them best.

  
**JEFF JEREMIAH C. PEREA, LPT**  
 License No. 1418168  
 English Critic  
 Instructor, City College of Tagaytay

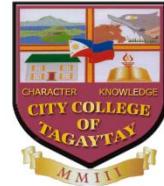


## Appendix E. Routing Slip for Capstone Project

*SCS Form No.1*



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### SCHOOL OF COMPUTER STUDIES ROUTING SLIP FOR CAPSTONE PROJECT

Names: Balboa, Mary Rose Ann G., Mahinay, Christian A., Robis, Jezryl Mae P.,  
Angcaya, Edson M., Pavillo, Judilyn A.

Title of Study: Development of Web-Based Online Information Management System with Data Analytics for Metro Maharlika Tagaytay Tricycle Operators and Drivers Association

Please Check:

Outline

Final Manuscript

Designation: Name of Faculty Concerned		Date		Remarks
		Received	Released	
Adviser: ALDWIN KARLO M. ANGCAYA				
	1			
	2			
	3			
Unit Research Coordinator: REGGIE MAR DE CASTRO				
	1			
	2			
	3			
Program Coordinator: NOEL JR GARCIA				
	1			
	2			
	3			
IT Department Head: REGGIE MAR DE CASTRO				
	1			
	2			
	3			
English Critic:				
	1			
	2			
	3			
Dean: JEFERLYN AÑONUEVO				
	1			
	2			
	3			

## Appendix F. Test Results

### UNIT TESTING

System Administrator				
Module	Findings	Solution	Status	Date
<b>Account Management</b>	None	None	Working	05/01/2023
Login				
Forgot Password				
Change Password				
Manage User Account	None	None	Working	05/01/2023
<b>Record Management Module</b>	None	None	Working	05/01/2023
Manage Members Record				
Manage TODA Officials				
Manage Certificates	None	None	Working	05/01/2023
<b>Contribution Management Module</b>	None	None	Working	05/01/2023
Manage Contribution Fee Record				
<b>Record Management Module</b>	None	None	Working	05/01/2023
Generate Report				

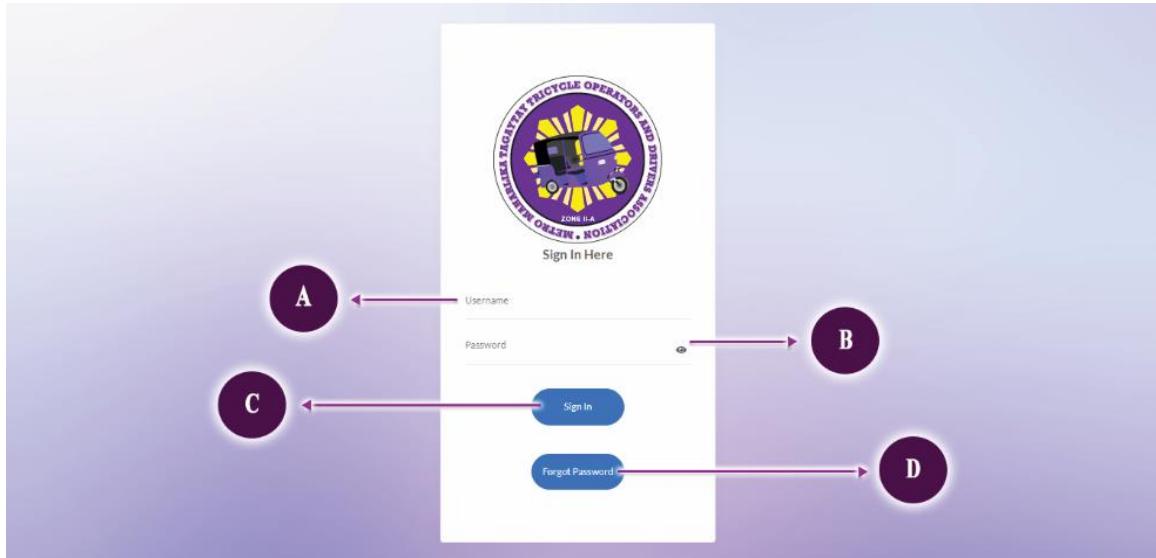
Secretary				
Module	Findings	Solution	Status	Date
<b>Account Management Module</b>	None	None	Working	05/01/2023
Login				
Forgot Password	None	None	Working	05/01/2023
<b>Record Management Module</b>	None	None	Working	05/01/2023
Manage Members Record				
Manage TODA Officials				
Manage Certificates	None	None	Working	05/01/2023
<b>Contribution Management Module</b>	None	None	Working	05/01/2023
Manage Contribution Fee Record				
<b>Record Management Module</b>	None	None	Working	05/01/2023
Generate Report				

Member				
Module	Findings	Solution	Status	Date
<b>Account Management Module</b>	None	None	Working	05/01/2023
Login	None	None	Working	05/01/2023
<b>Record Management Module</b>	None	None	Working	05/01/2023
Forgot Password	None	None	Working	05/01/2023
<b>Contribution Management Module</b>	None	None	Working	05/01/2023
View Personal Record	None	None	Working	05/01/2023
View Personal Contribution	None	None	Working	05/01/2023
Fee Record	None	None	Working	05/01/2023

## PERFORMANCE TESTING

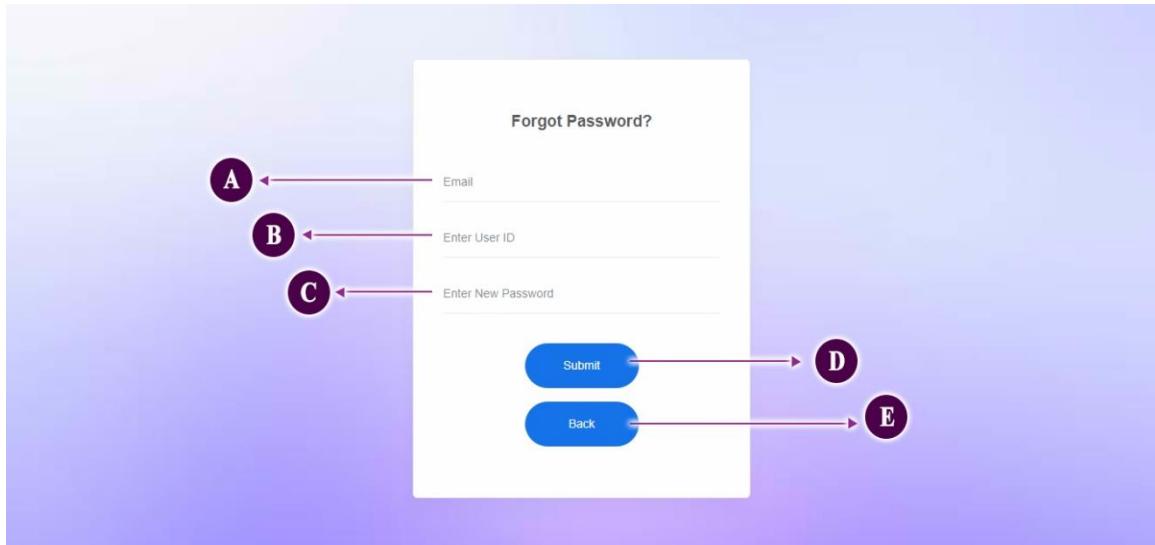
<b>PERFORMANCE TESTING</b>		
Browser	Findings	Date
Google Chrome	The Web-based works smoothly and all the contents and functions are well.	5/1/2023
Microsoft Edge	The contents and functions of the web-based works properly.	5/1/2023
Firefox	The web-based features and content are functional.	5/1/2023
Mobile Device	Findings	Date
Vivo Android Phone	The Web-based is responsive and works properly	5/1/2023
Oppo Android Phone	The Web-based is responsive and works properly	5/1/2023
iPhone	The Web-based is responsive and works properly	5/1/2023

## Appendix G. Operations Manual / User's Guide



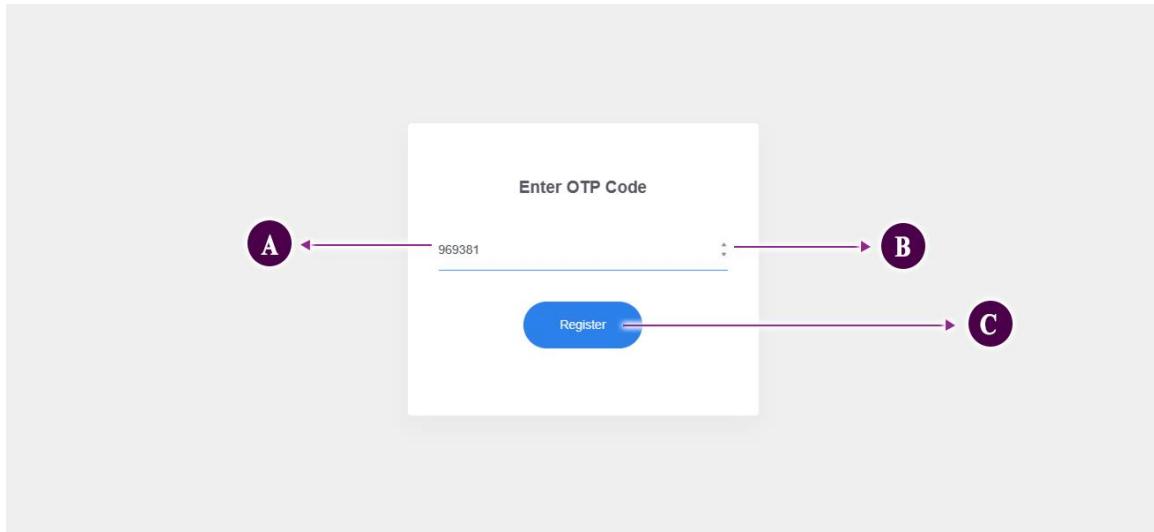
Appendix Figure 1. User Login Form

- A. This textbox allows the user to type the username or the ID number.
- B. This textbox allows the user to type the corresponding password.
- C. This button allows the user to login and access the system when the correct username and password are entered.
- D. This button allows the user to recover a forgotten password using email verification.



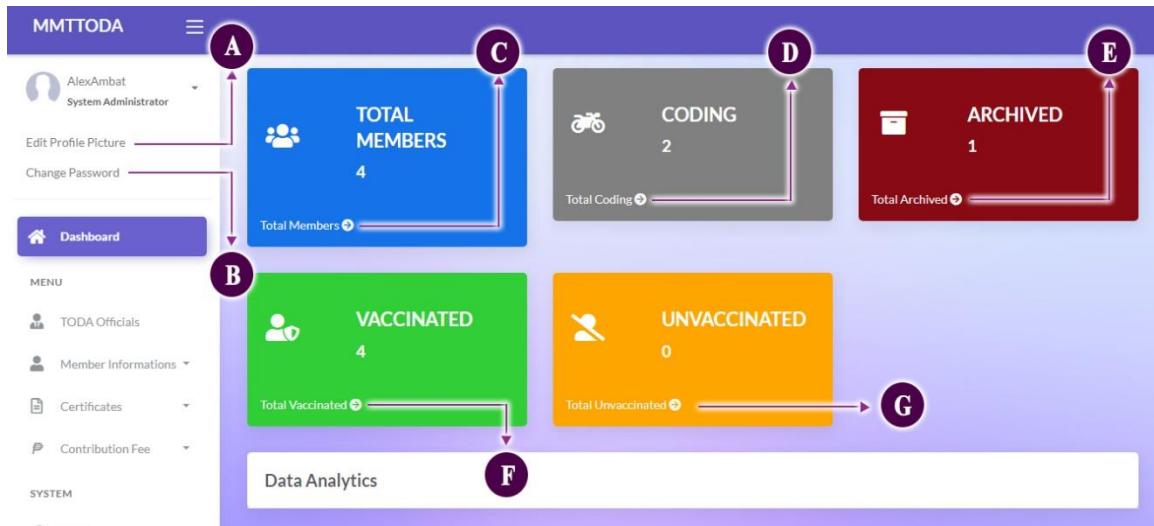
Appendix Figure 2. Forgot Password Page

- A. This textbox allows the user to enter email address to which the OTP will be sent.
- B. This textbox allows the user to enter user ID.
- C. This textbox allows the user to enter a new password.
- D. This button will submit the data entered.
- E. This button allows the user to go back to the user login form.



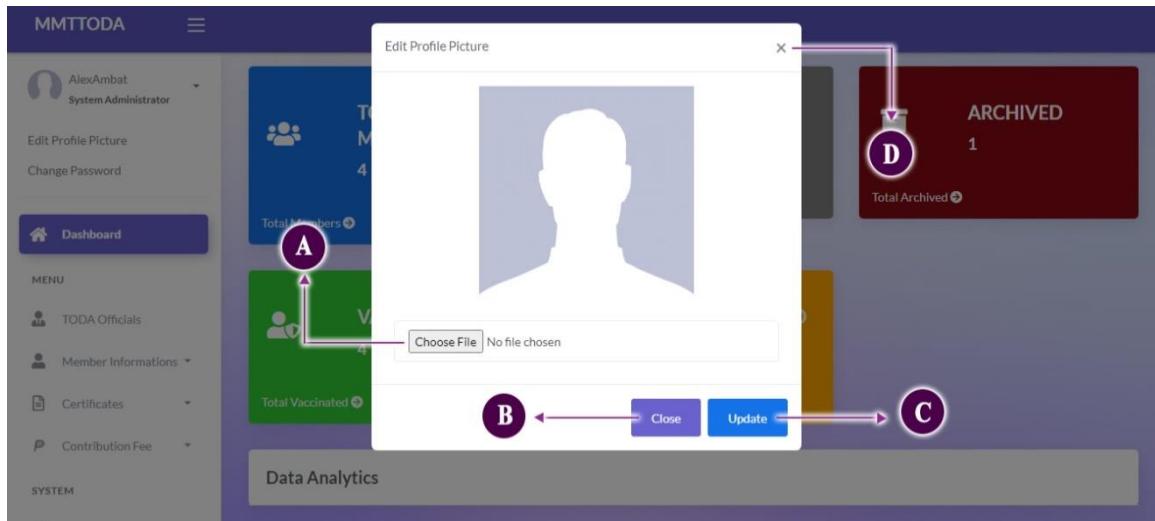
Appendix Figure 3. OTP Code

- This textbox allows the user to enter the OTP code.
- This numeric up down control will increase or decrease the numbers.
- This button will register the OTP code.



Appendix Figure 4. System Administrator Dashboard

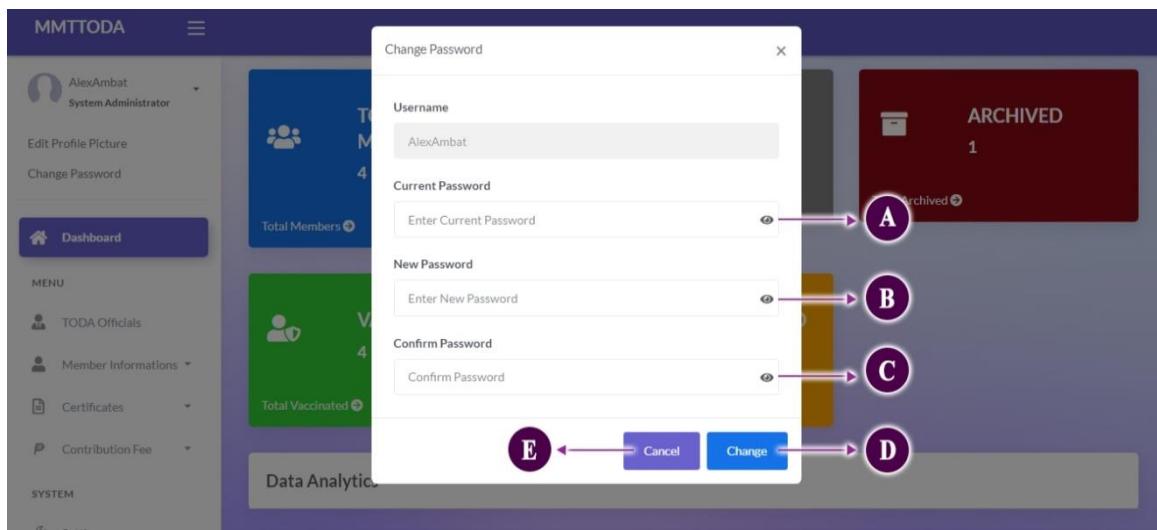
- A. This tab allows the System Administrator to edit profile picture.
- B. This tab allows the System Administrator to change password.
- C. This card link shows the total number of members and members' information.
- D. This card link shows the color-coding details.
- E. This card link allows the System Administrator to view the information of archived members.
- F. This card link allows the System Administrator to view the list of the members that are vaccinated.
- G. This card link allows the System Administrator to view the list of the members that are unvaccinated.



Appendix Figure 5. System Administrator Edit Profile Picture

- A. This “choose file” button allows the System Administrator to edit or update profile picture.
- B. This button will cancel the updating of the profile picture.

- C. This button allows the System Administrator to update the profile picture of the System Administrator.
- D. This icon will close the form.



Appendix Figure 6. System Administrator Change Password Page

- A. This textbox allows the System Administrator to input a current password.
- B. This textbox allows the System Administrator to input a new password.
- C. This textbox allows the System Administrator to input the new password for confirmation.
- D. This button will update the changes of the password.
- E. This button will cancel the changes.

The screenshot shows a web-based dashboard for managing members. On the left is a sidebar with a user profile for 'AlexAmbat' and a 'Dashboard' button. Below that is a 'MENU' section with links for 'TODA Officials', 'Member Informations', 'Certificates', 'Contribution Fee', and 'Settings'. At the bottom of the sidebar is a 'Sign out' button. The main content area has a purple header 'MMTTODA' and a search bar. It displays a table titled 'All Members' with the following data:

ID No.	Status	Photo	Fullname	Body No.	Coding
2	Inactive		Angcaya, Edson Mendoza	001	Blue
3	Inactive		Robis, Jezryl Mae Poblete	002	Blue
4	Active		Mahinay, Christian Abelong	003	Blue
5	Active		Balboa, Mary Rose Ann Gaza	004	Red

Below the table, it says 'Showing 1 to 4 of 4 entries'. To the right of the table is a blue box labeled 'All Members 4'. At the bottom right are navigation buttons for 'Previous' (with arrow), '1', and 'Next' (with arrow). Arrows labeled A through E point to specific UI elements: A points to the 'Show' dropdown; B points to the search bar; C points to the sorting icons in the table header; D points to the 'Next' navigation button; E points to the 'Previous' navigation button.

Appendix Figure 7. System Administrator Total Members Dashboard

- This drop-down list allows the System Administrator to choose the number of entries to view.
- This search box allows the System Administrator to search a member.
- This icon allows the System Administrator to sort the members; information
- This button to proceed to the next page of entries.
- This button to proceed to the previous page of entries.

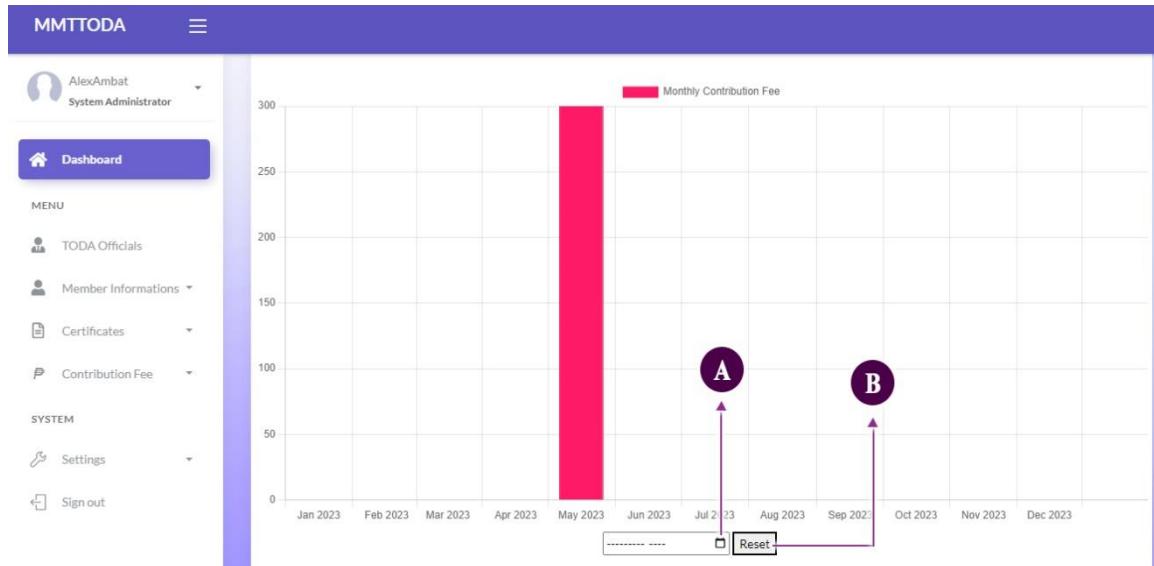
lName ↑	Body No. ↑	Plate No. ↑	Birthdate ↑	Age ↑	Civil Status ↑	Gender ↑	Color Coding ↑	Vaccine Status ↑	Action ↑
villo, jillyn alos	005	AAA- 555	2000-12- 10	22	Single	Female	Red	Yes	

← Previous      1      Next →

A  
 B  
 C  
 D  
 E  
 F

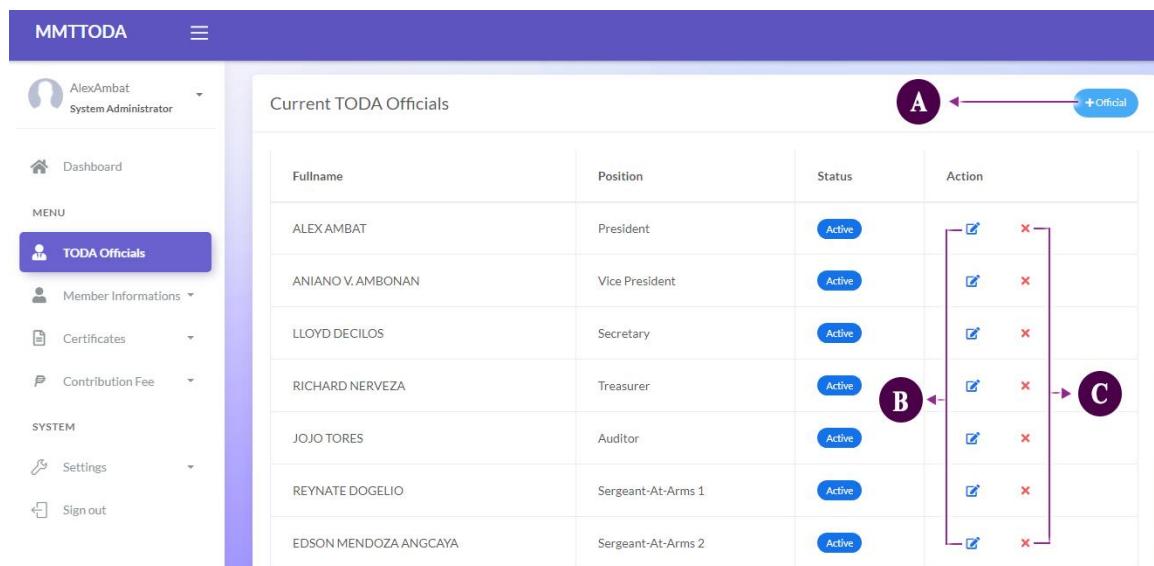
Appendix Figure 8. System Administrator Archived Members Dashboard

- A. This button allows the System Administrator to download the members information in csv file.
- B. This eye icon will show the archived member's information.
- C. This icon will restore the archived member.
- D. This button to proceed to the previous page of entries.
- E. This button to proceed to the next page of entries.



Appendix Figure 9. System Administrator Graph Dashboard

- A. This button is used to select the desired month of contribution fee record to show.
- B. This button is used to reset the entered date.



Appendix Figure 10. Manage TODA Officials

- A. This button allows the System Administrator to add official.

- B. This button allows the System Administrator to edit the information of the officials.
- C. This button allows the System Administrator to remove an official.

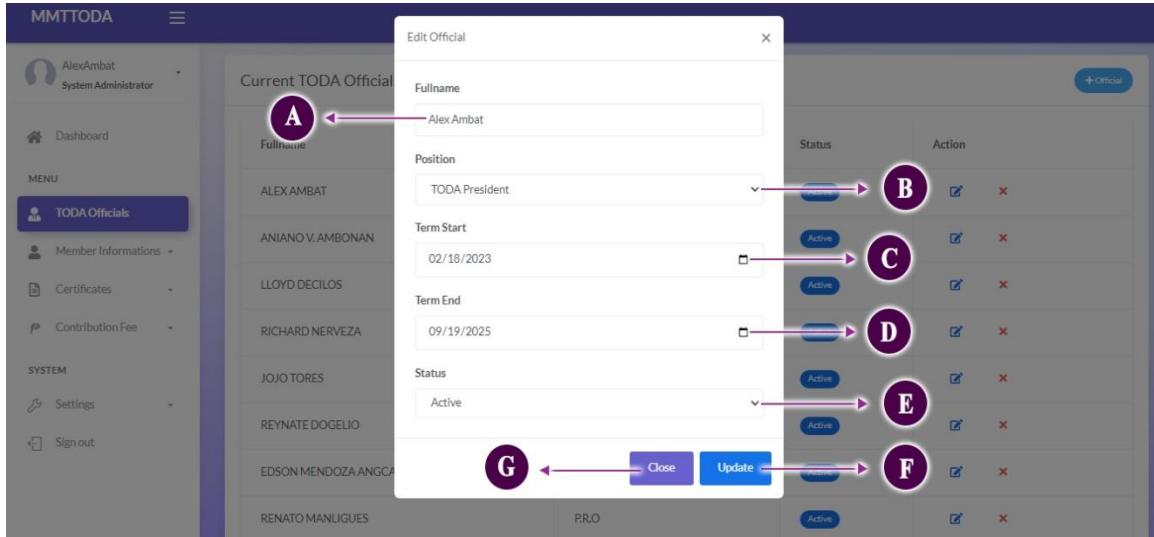
The screenshot shows the 'Create Official' dialog box over a list of existing officials. The dialog has fields for 'Enter Fullname', 'Select Official Position', 'Term Start' (with a date picker icon), 'Term End' (with a date picker icon), and 'Status'. Below the dialog is a table of officials with columns for 'Status' and 'Action'. A legend on the right maps numbered circles to UI elements:

- A**: Points to the 'Enter Fullname' input field.
- B**: Points to the 'Select Official Position' dropdown.
- C**: Points to the 'Term Start' date picker icon.
- D**: Points to the 'Term End' date picker icon.
- E**: Points to the 'Status' dropdown.
- F**: Points to the 'Create' button.
- G**: Points to the 'Close' button.

Appendix Figure 11. Create Official Page

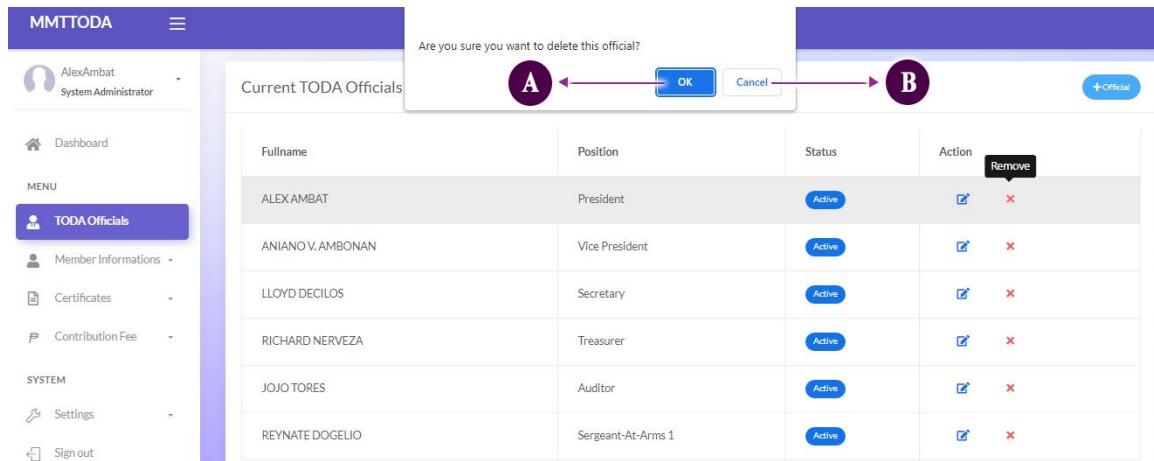
- A. This textbox allows the System Administrator to input the full name of the official that will be added.
- B. This drop-down list is used to select the position of the official.
- C. This icon is used to select the date when the term of the official to be added will start.
- D. This icon is used to select the date when the term of the official to be added will end.
- E. This drop-down list allows the System Administrator to select the status of the official.
- F. This button will save the entered data.

G. This button will close the page.



Appendix Figure 12. Edit TODA Official Page

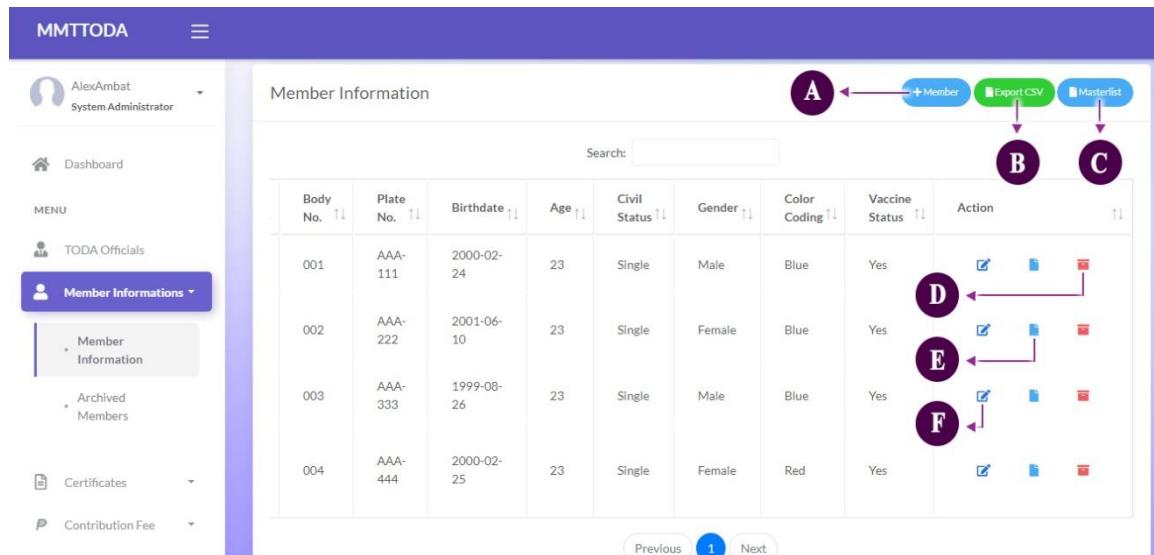
- A. This textbox allows the System Administrator to edit the name of an official.
- B. This drop-down list is used to select the position of the official.
- C. This icon is used to select the date of the start term of the official.
- D. This icon is used to select the date of the end term of the official.
- E. This drop-down list allows the System Administrator to select the status of the official.
- F. This button will update the entered data.
- G. This button will close the page.



Appendix Figure 13. Confirmation Message

A. This button will confirm the action.

B. This button will cancel the action.



Appendix Figure 14. Manage Members Information Page

A. This button allows the System Administrator to add and record member information.

B. This button will download members' information in csv file.

- C. This button allows the System Administrator to generate and print the master list.
- D. This button allows the System Administrator to archive member's information.
- E. This button will generate members' profile.
- F. This button allows the System Administrator to edit the information of the members.

The screenshot shows the 'New Member Registration Form' in a web application. The form is titled 'New Member Registration Form' and contains various input fields and dropdown menus. On the left, there is a sidebar with navigation links like 'Dashboard', 'TOOA Officials', 'Member Information', 'Archived Members', 'Certificates', 'Contribution Fee', 'Settings', and 'Sign out'. The main form area has several fields labeled with letters A through T:

- A:** A 'Choose File' button with a placeholder 'No file chosen'.
- B:** A text input field for 'Body No.' with a placeholder 'Enter Body No.'
- C:** A text input field for 'Franchise No.' with a placeholder 'Enter franchise no.'
- D:** A text input field for 'Plate No.' with a placeholder 'Enter Plate No.'
- E:** A placeholder image for a member's photo.
- F:** A text input field for 'Firstname' with a placeholder 'Enter Firstname'.
- G:** A button labeled 'Export CSV'.
- H:** A text input field for 'Place of Birth' with a placeholder 'Enter Birthplace'.
- I:** A text input field for 'Lastname' with a placeholder 'Enter Lastname'.
- J:** A button labeled 'Masterlist'.
- K:** A dropdown menu for 'Civil Status' with a placeholder 'Select Civil Status'.
- L:** A dropdown menu for 'Gender' with a placeholder 'Select Gender'.
- M:** A dropdown menu for 'Vaccine Status' with a placeholder 'Select Vaccine Status'.
- N:** A dropdown menu for 'Vaccine Dose' with a placeholder 'First'.
- O:** A text input field for 'Email Address' with a placeholder 'Enter Email'.
- P:** A text input field for 'Address' with a placeholder 'Enter Address'.
- Q:** A text input field for 'Contact Number' with a placeholder 'Enter Contact Number'.
- R:** A text input field for 'Other Occupation' with a placeholder 'Enter Occupation'.
- S:** A dropdown menu for 'Color Coding' with a placeholder 'Select Color Coding Name'.
- T:** A button labeled 'Save'.
- U:** A button labeled 'Close'.

Appendix Figure 15. New Member Registration Form

- A. This “choose file” button allows the System Administrator to attach a picture of the member that will be added.
- B. This text box allows the System Administrator to input the body number of the member.
- C. This text box allows the System Administrator to input the franchise number of the member.

- D. This text box allows the System Administrator to input the plate number of the member.
- E. This text box allows the System Administrator to enter the first name of the member that will be added.
- F. This text box allows the System Administrator to enter the middle name of the member that will be added.
- G. This text box allows the System Administrator to enter the last name of the member that will be added.
- H. This text box allows the System Administrator to input the place of birth of the member.
- I. This icon helps the System Administrator to select the birth date of the member.
- J. This text box allows the System Administrator to input the member's age.
- K. This drop-down list allows the System Administrator to select the civil status of the member.
- L. This drop-down list allows the System Administrator to select the gender of the member.
- M. This drop-down list allows the System Administrator to select the vaccine status of the member.
- N. This drop-down list allows the System Administrator to select the vaccine dose of the member.
- O. This text box allows the System Administrator to input the email address of the member.

- P. This text box allows the System Administrator to input the contact number of the member.
- Q. This text box allows the System Administrator to input the other occupation of the member if any.
- R. This text box allows the System Administrator to input the home address of the member.
- S. This drop-down list is used to select that assigned coding to the member.
- T. This button will save the data entered.
- U. This button will close and cancel that data entered.

**MMTTODA**

AlexAmbat  
System Administrator

**TODA Masterlist**

Republic of the Philippines  
Province of Cavite  
Tagaytay City  
Zone II- A TODA

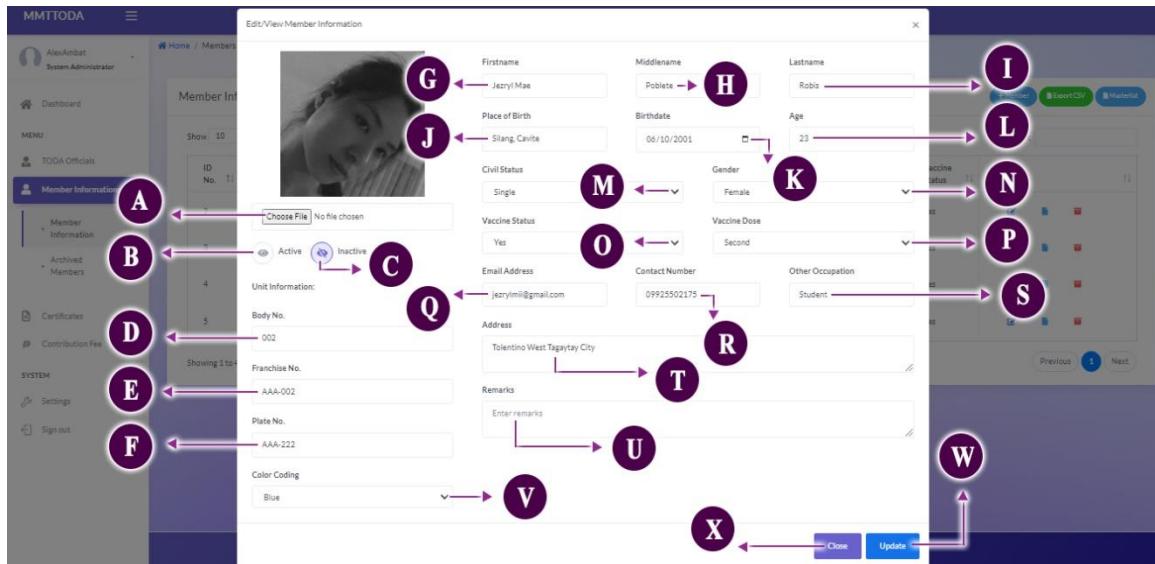
Date: 06/04/2023

**MMTTODA MASTERLIST**

ID	Fullname.	Body no.	Plate no.	Franchise no.
2	Angcaya, Edson Mendoza	001	AAA-111	AAA-001
3	Robis, Jezryl Mae Poblete	002	AAA-222	AAA-002
4	Mahinay, Christian Abelong	003	AAA-333	AAA-003

Appendix Figure 16. Generate Masterlist Page

- A. This button allows the System Administrator to print masterlist.



Appendix Figure 17. Edit Member Information Page

- This “choose file” button allows the System Administrator to attach a member’s picture.
- This icon is selected if the member is active.
- This icon is selected if the member is inactive.
- This text box allows the System Administrator to edit the body number of the member.
- This text box allows the System Administrator to edit the franchise number of the member.
- This text box allows the System Administrator to edit the plate number of the member.
- This text box allows the System Administrator to edit the first name of the member that will be added.
- This text box allows the System Administrator to edit the middle name of the member that will be added.

- I. This text box allows the System Administrator to edit the last name of the member that will be added.
- J. This text box allows the System Administrator to edit the place of birth of the member.
- K. This icon helps the System Administrator to select the birth date of the member.
- L. This text box allows the System Administrator to edit the member's age.
- M. This drop-down list allows the System Administrator to select the civil status of the member.
- N. This drop-down list allows the System Administrator to select the gender of the member.
- O. This drop-down list allows the System Administrator to select the vaccine status of the member.
- P. This drop-down list allows the System Administrator to select the vaccine dose of the member.
- Q. This text box allows the System Administrator to edit the email address of the member.
- R. This text box allows the System Administrator to edit the contact number of the member.
- S. This text box allows the System Administrator to edit put the other occupation of the member if any.
- T. This text box allows the System Administrator to edit the home address of the member.

- U. This textbox allows the System Administrator to enter a remark.
- V. This drop-down list is used to select that assigned coding to the member.
- W. This button will save the data entered.
- X. This button will close and cancel that data entered.

MMTTODA

AlexAmbat  
System Administrator

Member Profile

**A**

Print

Tagaytay City Official Seal

Republic of the Philippines  
Province of Cavite  
Tagaytay City  
Zone II- A TODA

MOTORIZED TRICYCLE OPERATOR/DRIVER IDENTIFICATION

	ID No.	TODA
3	Zone II- A TODA	
Body No:	Color Coding:	
002	Blue	

Appendix Figure 18. Generate Member Profile Page

- A. This button allows the System Administrator to print the member's profile.

MMTTODA

AlexAmbat  
System Administrator

Member Certificate Issuance

Show 10 entries

**A**

Search:

**B**

**C**

ID No. ↑	Photo ↑	Fullname ↑	Body No. ↑	Plate No. ↑	Gender ↑	Coding ↑	Vaccine Status ↑	Generate Certificate ↑
2		Angcaya, Edson Mendoza	001	AAA-111	Male	Blue	Yes	
3		Robis, Jezryl Mae Poblete	002	AAA-222	Female	Blue	Yes	
4		Mahinay, Christian Abelong	003	AAA-333	Male	Blue	Yes	
5		Balboa, Mary Rose Ann Gaza	004	AAA-444	Female	Red	Yes	

Showing 1 to 4 of 4 entries

Previous 1 Next

Appendix Figure 19. Generate Certificate Page

- A. This drop down list allows the System Administrator to choose the number of entries to view.
- B. This search box allows the System Administrator to search a member.
- C. This button allows the System Administrator to generate certificates.

The screenshot shows the MMTTODA application interface. On the left, there's a sidebar with a user profile for 'AlexAmbat' and a 'Certificates' section containing three options: 'Certificate of Membership', 'Certificate of Line Purchase', and 'Template'. The main content area is titled 'TODA Certificate' and displays the official seal of Tagaytay City. It includes text: 'Republic of the Philippines', 'Province of Cavite', 'Tagaytay City', 'Zone II- A TODA', and a date '06/04/2023'. Below this, the title 'SERTIPIKASYON NG PAGIGING MIYEMBRO' is displayed in red. At the bottom, a statement in Tagalog discusses the legal status of the certificate holder as a member of MMTTODA. A callout bubble labeled 'A' points to the 'Print Certificate' button located at the top right of the main content area.

**Appendix Figure 20. Print Certificates Page**

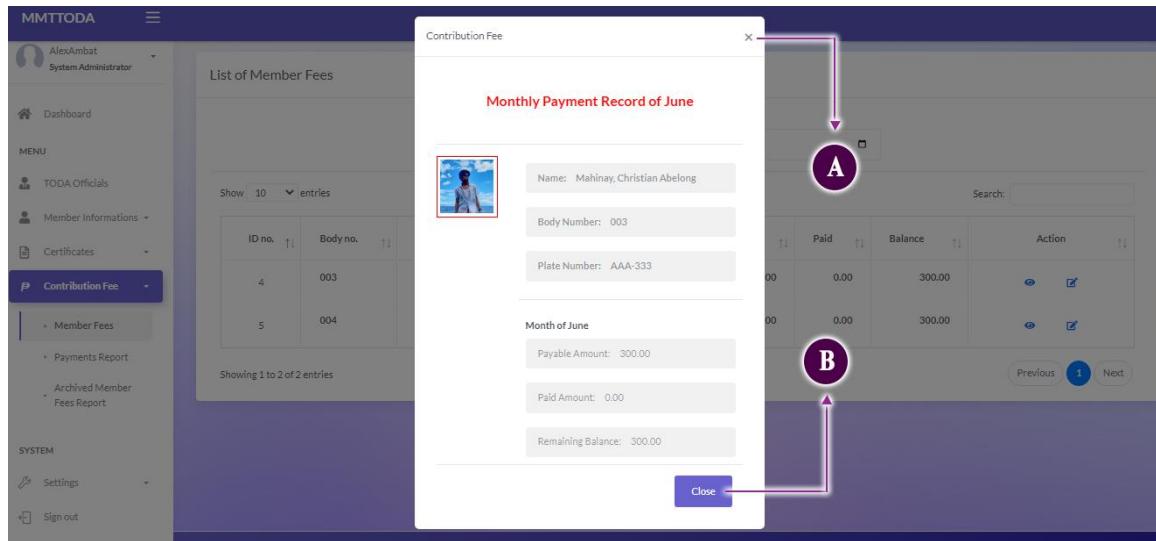
- A. This button allows the System Administrator to print the certificates such as certificate of membership, line purchase and a blank template.

The screenshot shows the 'List of Member Fees' page. The sidebar on the left has a 'Contribution Fee' section with 'Member Fees' selected. The main area shows a table with two entries. Column headers include ID no., Body no., Plate no., Full name, Payable Fee, Paid, Balance, and Action. The first entry is for Mahinay, Christian Abelong (ID 4, Body 003, Plate AAA-333) with a balance of 300.00. The second entry is for Balboa, Mary Rose Ann Gaza (ID 5, Body 004, Plate AAA-444) with a balance of 300.00. Row 5 of the table has icons for eye (view), edit (pencil), and delete (trash).

ID no.	Body no.	Plate no.	Full name	Payable Fee	Paid	Balance	Action
4	003	AAA-333	Mahinay, Christian Abelong	300.00	0.00	300.00	
5	004	AAA-444	Balboa, Mary Rose Ann Gaza	300.00	0.00	300.00	

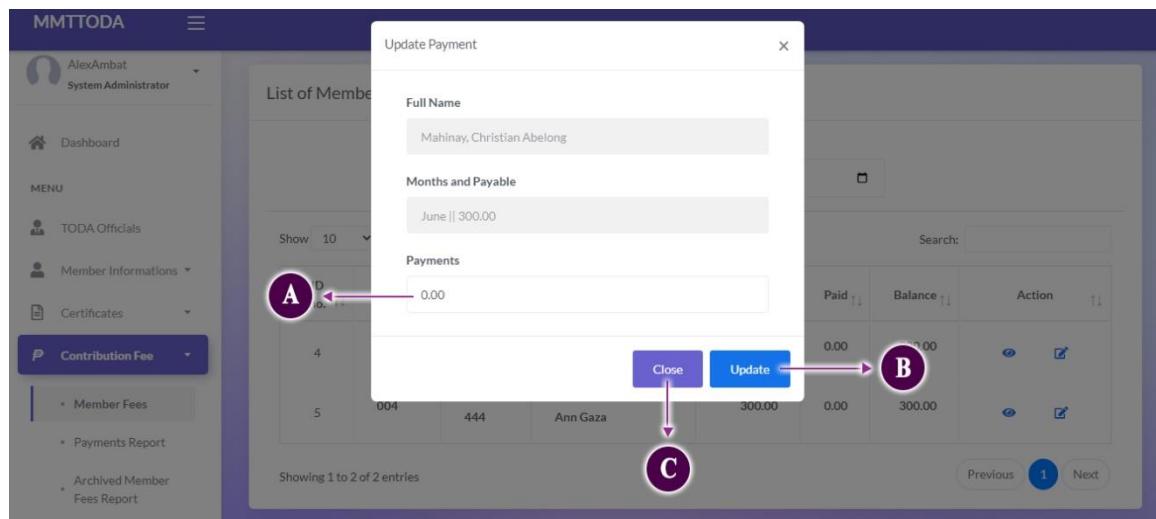
Appendix Figure 21. Manage Members Contribution Fees

- This button is used to select the desired month of contribution fee record to show.
- This search box allows the System Administrator to search a member.
- This eye icon will view the members' fee record details.
- This button allows the System Administrator to edit and update member's payment.



Appendix Figure 22. Members' Monthly Payment Record Page

- A. This icon will close the page.
- B. This button allows the System Administrator to close the modal.



Appendix Figure 23. Update Members Payment Page

- A. This textbox allows the System Administrator to edit the amount of members' payment.
- B. This button allows the System Administrator to update members' payment.

C. This button will close the modal form.

Date	CF no.	Body no.	Plate no.	Fullname.	Paid Amount
May 29,2023 04:06 AM	4	003	AAA-333	Mahinay, Christian Abelong	300.00
					Total 300.00

Appendix Figure 24. Payments Report Page

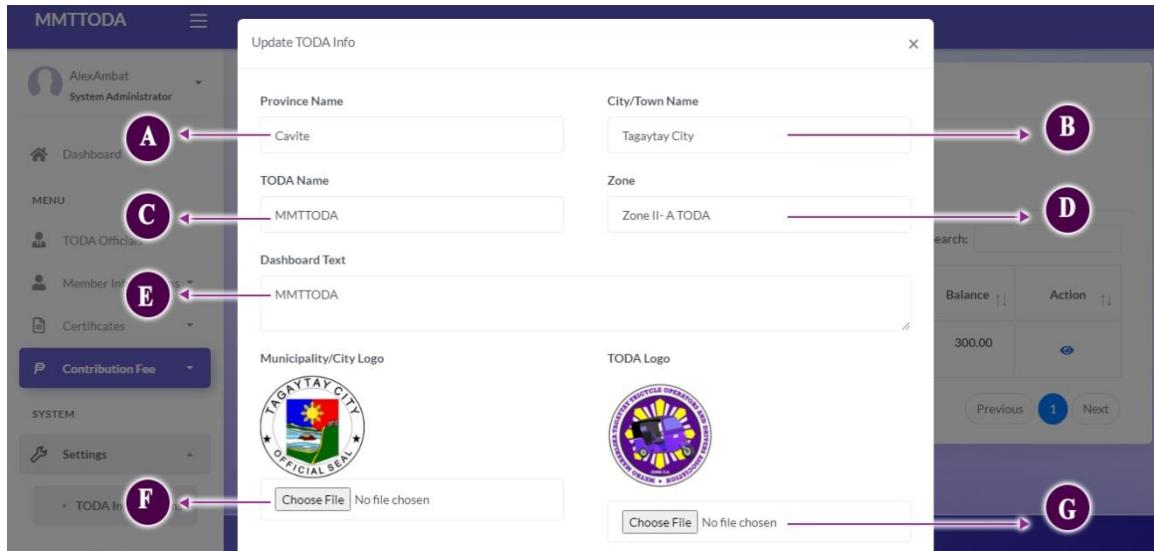
- A. This icon will print the payments reports.
- B. This icon allows the System Administrator to select the desired date of members' payment record.

ID no.	Body no.	Plate no.	Full name	Payable Fee	Paid	Balance	Action
6	005	AAA-555	Pavillo, Judilyn Abalos	300.00	0.00	300.00	

Appendix Figure 25. List of Archived Member Fees Page

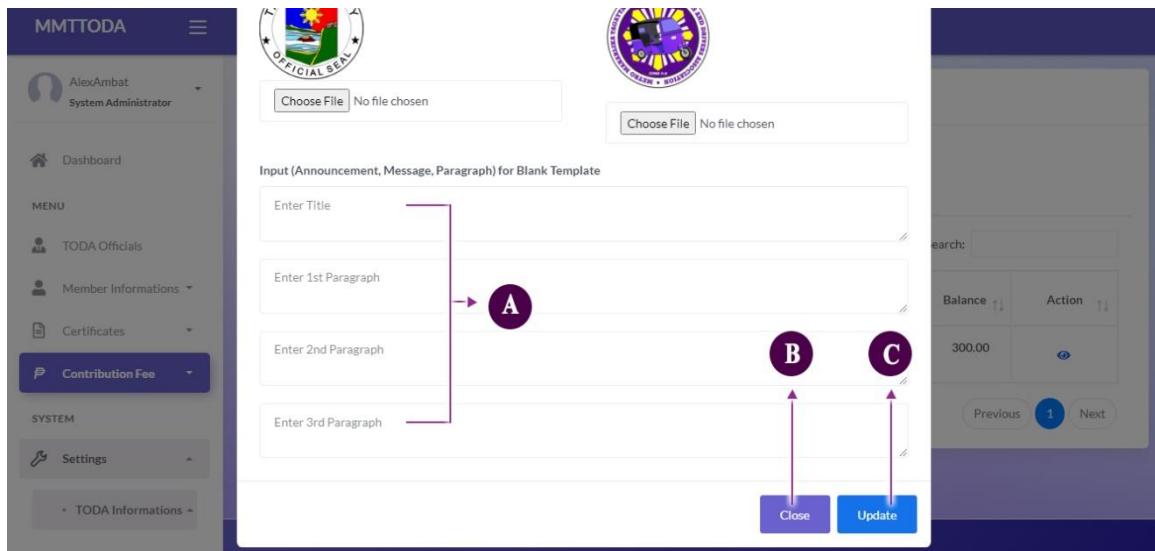
- A. This icon selects the desired date of members' payment record.

B. This eye icon shows the archived members monthly payment record.



Appendix Figure 26. Manage TODA Information

- A. This textbox allows the System Administrator to input the province of TODA.
- B. This textbox allows the System Administrator to input the city or town of TODA.
- C. This textbox allows the System Administrator to input the TODA name.
- D. This textbox allows the System Administrator to input the Zone of TODA.
- E. This textbox allows the System Administrator to edit the dashboard display text.
- F. This “choose file” button allows the System Administrator to attach municipality or city logo.
- G. This “choose file” button allows the System Administrator to attach TODA logo.



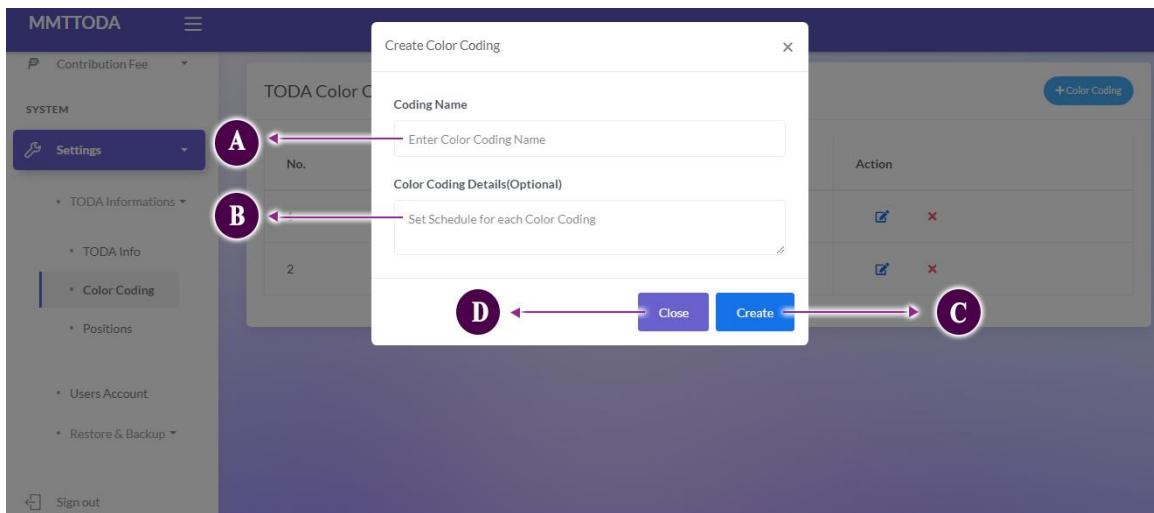
Appendix Figure 26. Manage TODA Information Page

- A. This textbox allows the System Administrator to enter a title for the inserted content.
- B. This button will close the page.
- C. This button will update the changes.

No.	Color Coding	Details	Action
1	Blue	Weekend	
2	Red	Monday	

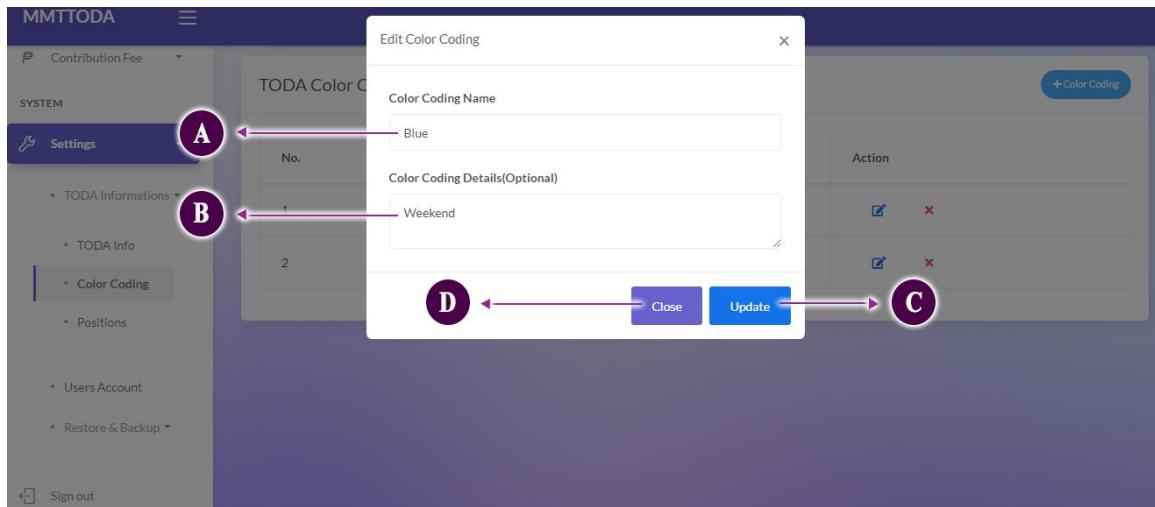
Appendix Figure 27. Manage TODA Color Coding

- A. This button allows the System Administrator to create another coding and its details.
- B. This icon allows the System Administrator to edit the color and details of the selected coding.
- C. This icon allows the System Administrator to remove coding.



Appendix Figure 28. Create Coding Page

- A. This textbox allows the System Administrator to enter coding name.
- B. This textbox allows the System Administrator to set the schedule for each coding.
- C. This button will confirm and add coding.
- D. This button will close the modal form.



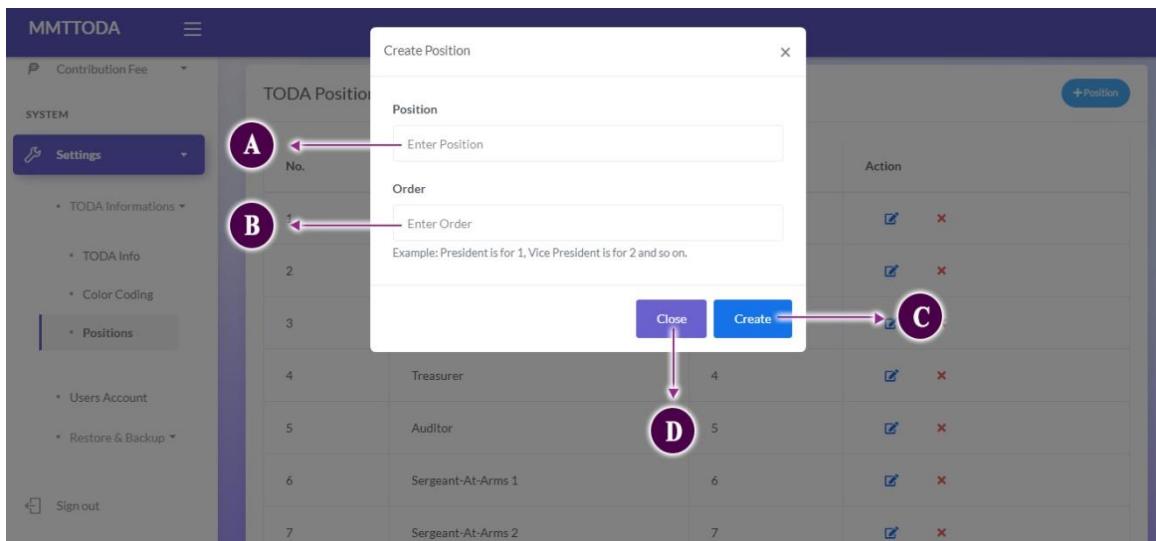
Appendix Figure 29. Edit Color Coding Page

- A. This textbox allows the System Administrator to edit the coding name.
- B. This textbox allows the System Administrator to edit the coding schedule
- C. This button will confirm and update the data entered.
- D. This button will close the modal form.

No.	Position	Order	Action
1	President	1	
2	Vice President	2	
3	Secretary	3	
4	Treasurer	4	
5	Auditor	5	
6	Sergeant-At-Arms 1	6	
7	Sergeant-At-Arms 2	7	

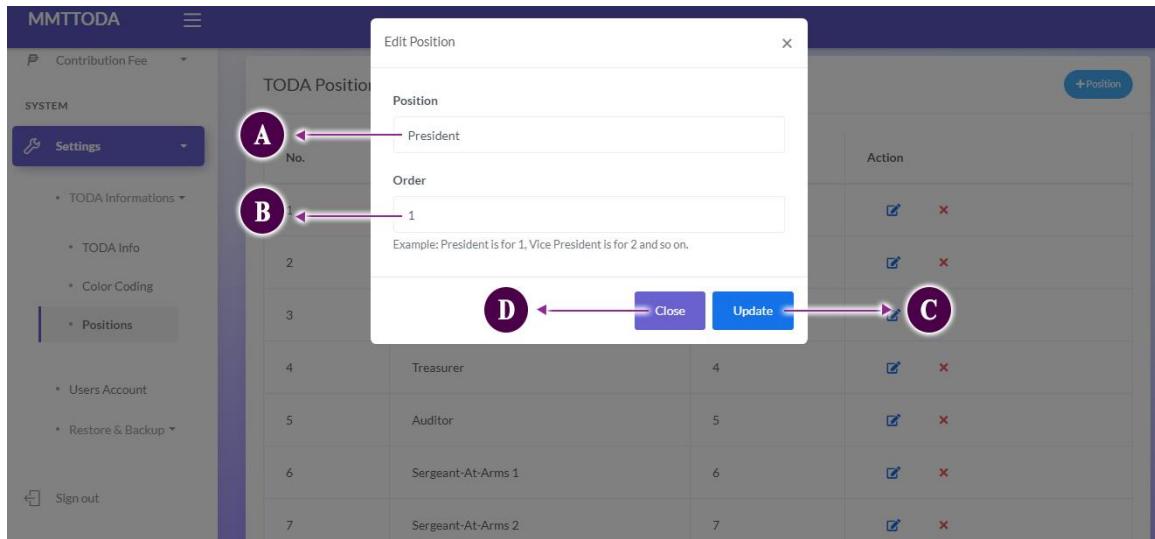
Appendix Figure 30. Manage TODA Positions

- A. This button allows the System Administrator to add position to the TODA officials.
- B. This icon allows the System Administrator to edit the TODA official's position.
- C. This icon allows the System Administrator to remove a position.



Appendix Figure 31. Create TODA Officials Position Page

- A. This textbox allows the System Administrator to input a position name.
- B. This numeric up-down control will adjust the order of the position.
- C. This button will add and create the entered position.
- D. This button will close the modal form



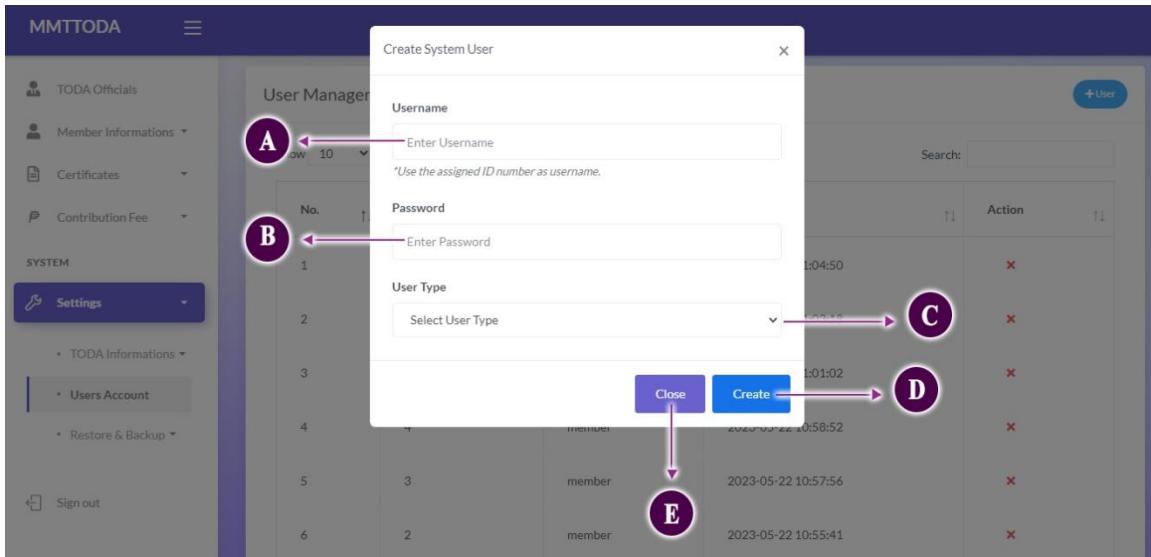
Appendix Figure 32. Edit TODA Officials Position Page

- This textbox allows the System Administrator to edit the position name.
- This numeric up-down control will adjust the order of the position.
- This button will update the edited position.
- This button will close the modal form.

The screenshot shows a 'User Management' page with a table of users. The table columns are: No., Username, User Type, Created At, and Action. A modal window titled 'User Management' is open, containing a 'Search:' input field and a 'Show 10 entries' dropdown. Arrows labeled A, B, C, and D point to the dropdown, search bar, add user button, and delete icons in the table respectively.

Appendix Figure 33. User Account Management Page

- A. This drop-down list allows the System Administrator to choose the number of entries to view.
- B. This search box allows the System Administrator to search.
- C. This button adds user who can access the system.
- D. This icon allows the System Administrator to remove/delete a user.



Appendix Figure 34. Create User Account Page

- A. This textbox allows the System Administrator to create a username of a user that will be added.
- B. This textbox allows the System Administrator to create a password for the user.
- C. This drop-down list selects a user type for the user that will be added.
- D. This button will create and save the entered data.
- E. This button will close the form.

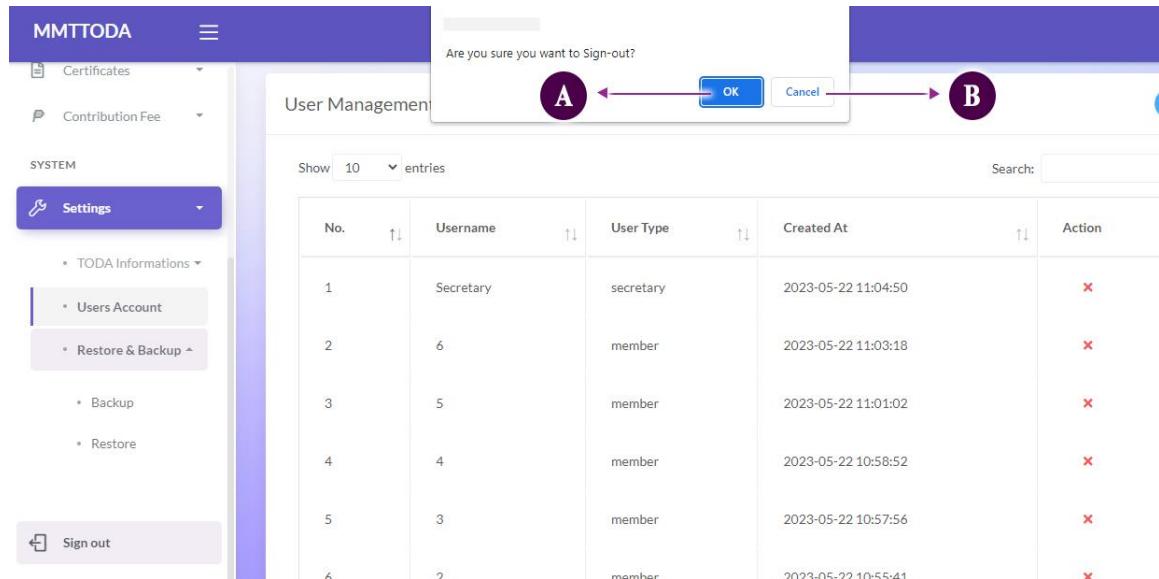
No.	Username	User Type	Created At
1	Secretary	secretary	2023-05-22 11:04:50
2	6	member	2023-05-22 11:03:18
3	5	member	2023-05-22 11:01:02
4	4	member	2023-05-22 10:58:52
5	3	member	2023-05-22 10:57:56

Appendix Figure 35. Back Up Database

- A. This tab allows the System Administrator to download an SQL file containing the all tables of collected information stored in the system.

Appendix Figure 36. Restore Database

- A. This “choose file” button allows the System Administrator to attach an SQL file to restore a database.
- B. This button will confirm to restore a database.
- C. This button will cancel the restoring.



Appendix Figure 37. Sign out Message

- A. This button will confirm the signing out.
- B. This button will cancel the signing out.

Current TODA Officials

Fullname	Position	Action
ALEX AMBAT	President	<input type="checkbox"/>
ANIANO V. AMBONAN	Vice President	<input type="checkbox"/>
LLOYD DECILOS	Secretary	<input type="checkbox"/>
RICHARD NERVEZA	Treasurer	<input type="checkbox"/>
JOJO TORES	Auditor	<input type="checkbox"/>
REYNATE DOGELIO	Sergeant-At-Arms 1	<input type="checkbox"/>
EDSON MENDOZA ANGACA	Sergeant-At-Arms 2	<input type="checkbox"/>
RENATO MANLIGUES	P.R.O	<input type="checkbox"/>

Appendix Figure 38. Secretary Manage TODA Officials Page

- A. This button allows the secretary to create a new official.
- B. This icon allows the secretary to edit officials' details.

Member Information

Status	Photo	Fullname	Body No.	Plate No.	Birthdate	Age	Civil Status	Gender	Color Coding	Vaccine Status	Action
Inactive		Angcaya, Edson Mendoza Robis,	001	AAA-111	2000-02-24	23	Single	Male	Blue	Yes	<input type="checkbox"/>
Inactive		Jerryl Mae Poblete Mahinay,	002	AAA-222	2001-06-10	23	Single	Female	Blue	Yes	<input type="checkbox"/>
Active		Christian Abelong Balboa,	003	AAA-333	1999-08-26	23	Single	Male	Blue	Yes	<input type="checkbox"/>
Active		Mary Rose Ann Gaza	004	AAA-444	2000-02-25	23	Single	Female	Red	Yes	<input type="checkbox"/>

Appendix Figure 39. Secretary Manage Members' Information Page

- A. This button allows the secretary to add member.

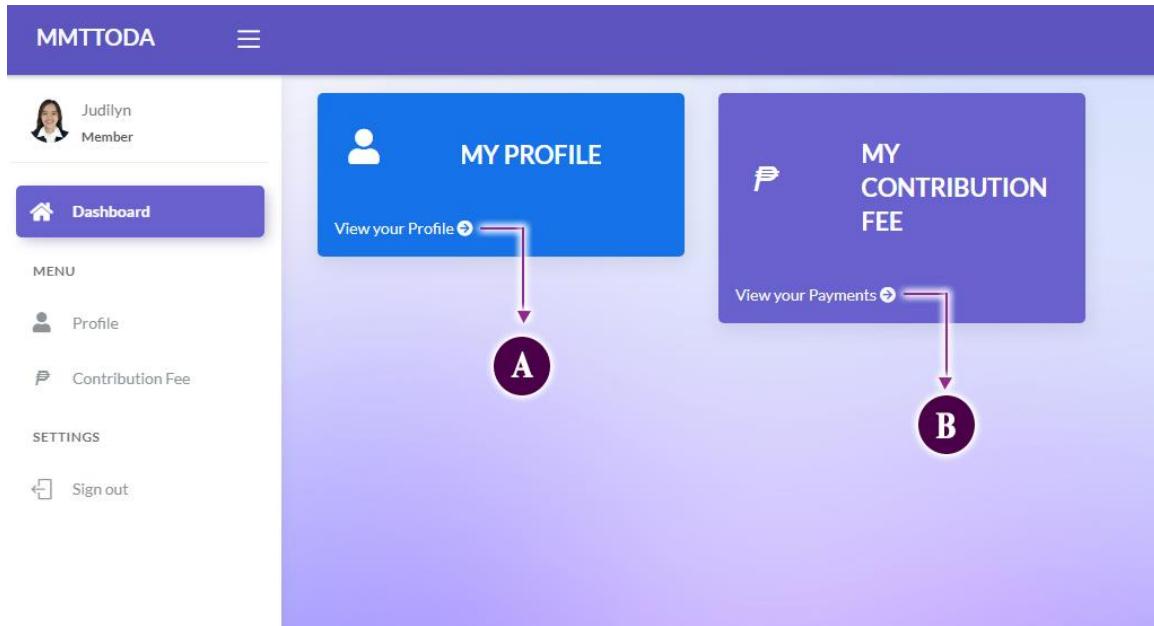
- B. This button allows the secretary to download members' information in csv file.
- C. This button allows the secretary to generate and print master list.
- D. This button generates and print master list.

The screenshot shows the 'Archived Member Information' page from the MMTTODA system. The left sidebar has a purple header 'MMTTODA' and includes sections for 'Secretary', 'Dashboard', 'MENU', 'TODA Officials', and 'Member Informations'. Under 'Member Informations', 'Archived Members' is selected. The main area displays a table titled 'Archived Member Information' with one entry. The table columns are: Status, Photo, Fullname, Body No., Plate No., Birthdate, Age, Civil Status, Gender, Color Coding, Vaccine Status, and Action. The entry shows: Active, photo of a person, Pavillo, Judilyn Abalos, 005, AAA-555, 2000-12-10, 22, Single, Female, Red, Yes, and an eye icon. A green 'Export CSV' button is at the top right. Below the table, it says 'of 1 entries'. Navigation buttons 'Previous' and 'Next' are at the bottom right. A purple arrow labeled 'A' points to the 'Export CSV' button. A purple arrow labeled 'B' points to the eye icon in the 'Action' column.

Status	Photo	Fullname	Body No.	Plate No.	Birthdate	Age	Civil Status	Gender	Color Coding	Vaccine Status	Action
Active		Pavillo, Judilyn Abalos	005	AAA-555	2000-12-10	22	Single	Female	Red	Yes	

Appendix Figure 40. Secretary Archived Member Information Page

- A. This button allows the secretary to download members' information in csv file.
- B. This eye icon shows the information of a member.



Appendix Figure 41. Member's Dashboard

- A. This card link allows the member to view their personal information.
- B. This card link allows the member to view their contribution fee payment.

The profile page has a purple header with the logo 'MMTTODA' and a menu icon. The sidebar shows a profile picture of 'Judilyn Member' and links: 'Dashboard', 'Profile' (highlighted), 'Contribution Fee', 'SETTINGS', and 'Sign out'. A circular arrow 'A' points to the 'Profile' tab. The main content area shows a profile picture of 'PAVILLO, JUDILYN A.', her title 'Student', and location 'Mendez, Cavite'. Below is a table of personal details:

Full Name	PAVILLO, JUDILYN A.
Email	judilypavillo21@gmail.com
Phone	09102992447
Birthdate	2000-12-10
Birth Place	Mendez
Age	22 years old
Gender	Female
Civil Status	Single
Vaccine Status	Yes (Booster)

Below the table, there is a section for identification numbers and color coding:

ID No.:	6
Body No.:	005
Franchise No.:	AAA-005
Plate No.:	AAA-555
Color Coding:	Red

Appendix Figure 42. Member's Profile Page

- A. This tab allows the member to view personal information.

The screenshot shows the MMTTODA mobile application interface. At the top, there is a purple header bar with the text "MMTTODA" and a three-line menu icon. Below the header, on the left, is a sidebar with a user profile picture of a woman named Judilyn, labeled as a "Member". The sidebar also contains navigation links: "Dashboard", "Profile", "Contribution Fee", "SETTINGS", and "Sign out". The main content area has a light blue background. It displays a circular profile picture of the same woman, followed by her name "PAVILLO, JUDILYN" and initials "A.", her title "Student", and her location "Mendez, Cavite". To the right of this profile section is a "My Payments" section. This section includes a heading "My Payments", a date selector with "Month of: June 2023" and a calendar icon, and a table showing payment details. The table has columns for "Payable Fee", "Paid", and "Balance". A single row is present with values 300.00, 0.00, and 300.00 respectively. A purple callout bubble with the letter "A" points to the calendar icon in the date selector.

Appendix Figure 43. Member's Contribution Fee Page

- A. This icon allows the member to view and select a desired date of members' payment record.

## Appendix H. Program Sample

```
<!DOCTYPE html>

<html lang="en">

<head>

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

<meta content='width=device-width, initial-scale=1.0, shrink-to-fit=no'
name='viewport' />

<link rel="icon" href="assets/img/icon.ico" type="image/x-icon"/>

<title>Dashboard - TODA Information Management System</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

</head>

<body >

<div id="loading-container" class="preloader"><div id="loading-screen"><div
class="loader loader-lg"></div></div></div>

<div class="wrapper">

<div class="main-header">

<div class="logo-header" data-background-color="purple2">
<a href="dashboard.php" class="logo"><span class="text-light ml-2 fw-bold"
style="font-size:20px">MMTTODA</span></a>

<button class="navbar-toggler sidenav-toggler ml-auto" type="button" data-
toggle="collapse" data-target="collapse" aria-expanded="false" aria-
```

```
label="Toggle navigation">><span class="navbar-toggler-icon"><i class="icon-menu"></i></span></button>

<div class="nav-toggle"><button class="btn btn-toggle toggle-sidebar"><i class="icon-menu"></i></button></div>

</div>

<nav class="navbar navbar-header navbar-expand-lg" data-background-color="purple2"><div class="container-fluid"><ul class="navbar-nav topbar-nav ml-md-auto align-items-center"><li class="nav-item dropdown hidden-caret"></li></ul></div></nav>

</div>

<div class="sidebar sidebar-style-2">

<div class="sidebar-wrapper scrollbar scrollbar-inner">

<div class="sidebar-content">

<div class="user">

<div class="avatar-sm float-left mr-2"></div>

<div class="info">

<a data-toggle="collapse" href="#collapseExample" aria-expanded="true"><span>AlexAbat<span class="user-level">System Administrator</span><span class="caret"></span></span></a><div class="clearfix"></div>

<div class="collapse in" id="collapseExample"><ul class="nav"><li><a href="#edit_profile" data-toggle="modal"><span class="link-collapse">Edit Profile
```

```
Picture</span></a><a href="#changepass" data-toggle="modal"><span
class="link-collapse">Change Password</span></a></li></ul></div>
</div>
</div>

<ul class="nav nav-secondary">
<li class="nav-item active"><a href="dashboard.php" ><i class="fas fa-
home"></i><p>Dashboard</p></a></li>
<li class="nav-section"><span class="sidebar-mini-icon"><i class="fa fa-ellipsis-
h"></i></span><h4 class="text-section">Menu</h4></li>
<li class="nav-item "><a href="officials.php"><i class="fas fa-user-
tie"></i><p>TODA Officials</p></a></li>
<li class="nav-item "><a href="#member" data-toggle="collapse"
class="collapsed" aria-expanded="false"><i class="fas fa-user"></i><p>Member
Informations</p><span class="caret"></span></a>
<div class="collapse " id="member"><ul class="nav nav-collapse"><li
class="nav-item "><a href="member.php"><span class="sub-item">Member
Information</span></a></li><li class="nav-item "><a
href="archive_member_infos.php"><span class="sub-item">Archived
Members</span></a></li></ul></div>
</li>
<li class="nav-item "><a href="#certificate" data-toggle="collapse"
class="collapsed" aria-expanded="false"><i class="far fa-file-
alt"></i><p>Certificates</p><span class="caret"></span></a>
```

```
<div class="collapse " id="certificate">
<ul class="nav nav-collapse">
<li class="nav-item "><a href="member_certification.php"><span class="sub-item">Certificate of Membership</span></a></li>
<li class="nav-item "><a href="member_line.php"><span class="sub-item">Certificate of Line Purchase</span></a></li>
<li class="nav-item "><a href="generate_toda_cert_empty.php"><span class="sub-item">Template</span></a></li>
</ul>
</div>
</li>
<li class="nav-item " ><a href="#memberfee" data-toggle="collapse" class="collapsed" aria-expanded="false"><i class="fa fa-dollar">&#8369;</i><p>Contribution Fee</p><span class="caret"></span></a>
<div class="collapse " id="memberfee">
<ul class="nav nav-collapse">
<li class="nav-item "><a href="fees.php" class="nav-item nav-fees"><span class="sub-item">Member Fees</span></a></li>
<li class="nav-item "><a href="payments_report.php" class="nav-item nav-payments_report"><span class="sub-item">Payments Report</span></a></li>
<li class="nav-item "><a href="archive_member_butaw.php" class="nav-item nav-payments_report"><span class="sub-item">Archived Member Fees Report</span></a></li>
```

```
</ul>

</div>

</li>

<li class="nav-section"><span class="sidebar-mini-icon"><i class="fas fa-wrench"></i></span><h4 class="text-section">System</h4></li>

<li class="nav-item "><a href="#settings" data-toggle="collapse" class="collapsed" aria-expanded="false"><i class="icon-wrench"></i><p>Settings</p><span class="caret"></span></a>

<div class="collapse " id="settings">

<ul class="nav nav-collapse">

<li class="nav-item"><a href="#info" data-toggle="collapse" class="collapsed" aria-expanded="false"><span class="sub-item"><p>TODA Informations</p></span><span class="caret"></span></a><div class="collapse " id="info"><ul class="nav nav-collapse"><li class="nav-item"><a href="#toda" data-toggle="modal"><span class="sub-item">TODA Info</span></a></li><li class="nav-item "><a href="coding.php"><span class="sub-item">Color Coding</span></a></li><li class="nav-item "><a href="position.php"><span class="sub-item">Positions</span></a></li></ul></div></li>

<li class="nav-item "><a href="users.php"><span class="sub-item">Users Account</span></a></li>

<li class="nav-item "><a href="#backup" data-toggle="collapse" class="collapsed" aria-expanded="false"><span class="sub-item"><p>Restore & Backup</p></span><span class="caret"></span></a><div class="collapse " id="backup">
```

```
id="backup">><ul class="nav nav-collapse"><li class="nav-item"><a href="backup/backup.php"><span class="sub-item">Backup</span></a></li> <li class="nav-item"><a href="#restore" data-toggle="modal"><span class="sub-item">Restore</span></a></li></ul></div></li>

</ul>

</div>

<li class="nav-item"><a href="model/logout.php" onclick="return confirm('Are you sure you want to Sign-out?');"><i class="icon-logout"></i><p>Sign out</p></a></li>

</li>

</ul>

</div>

</div>

</div>

<div class="main-panel" style="background-image: url('assets/css/bg/abstract.jpg'); background-size: cover; background-repeat: no-repeat; background-attachment: fixed;">

<div class="content">

<div class="page-inner mt--2" style="background-image: url('assets/css/bg/abstract.jpg'); background-size: cover; background-repeat: no-repeat; background-attachment: fixed;">

<div class="row">

<div class="col-md-4">
```

```
<div class="card card-stats card-primary card-round">
<div class="card-body">
<div class="row">
<div class="col-3"><div class="icon-big text-center"><i class="fas fa-
users"></i></div></div>
<div class="col-1 col-stats"></div>
<div class="col-6 col-stats"><div class="numbers mt-4"><h2 class="fw-bold text-
uppercase">Total Members</h2><h3 class="fw-bold text-
uppercase">4</h3></div></div>
</div>
</div>
<div class="card-body"><a href="member_info.php?state=all" class="card-link
text-light">Total Members <i class="fas fa-arrow-circle-right"></i></a></div>
</div>
</div>
<div class="col-md-4"><div class="card card-stats card-round"
style="background-color:#808080; color:#fff">
<div class="card-body">
<div class="row">
<div class="col-3"><div class="icon-big text-center"><i class="fas fa-
motorcycle"></i></div></div>
<div class="col-1 col-stats"></div>
```

```
<div class="col-6 col-stats"><div class="numbers mt-4"><h2 class="fw-bold text-  
uppercase">Coding</h2><h3 class="fw-bold text-  
uppercase">2</h3></div></div>  
</div>  
</div>  
  
<div class="card-body"><a href="coding_info.php?state=coding" class="card-link  
text-light">Total Coding <i class="fas fa-arrow-circle-right"></i></a></div>  
</div></div>  
  
<div class="col-md-4">  
  
<div class="card card-stats card-round" style="background-color:#880a14;  
color:#fff">  
  
<div class="card-body"><div class="row">  
  
<div class="col-3"><div class="icon-big text-center"><i class="fas fa-  
archive"></i></div></div>  
  
<div class="col-1 col-stats"></div>  
  
<div class="col-6 col-stats"><div class="numbers mt-4"><h2 class="fw-bold text-  
uppercase">Archived</h2><h3 class="fw-bold text-  
uppercase">1</h3></div></div>  
</div></div>  
  
<div class="card-body"><a href="archive_member_infos.php?state=coding"  
class="card-link text-light">Total Archived <i class="fas fa-arrow-circle-  
right"></i></a></div>  
</div>
```

```
</div>
</div>

<div class="row">
<div class="col-md-4">
<div class="card card-stats card-success card-round"><div class="card-body">
<div class="row">
<div class="col-3"><div class="icon-big text-center"><i class="fas fa-user-shield"></i></div></div>
<div class="col-1 col-stats"></div>
<div class="col-6 col-stats"><div class="numbers mt-4"><h2 class="fw-bold text-uppercase">Vaccinated</h2><h3 class="fw-bold text-uppercase">3</h3></div></div>
</div>
</div>

<div class="card-body"><a href="member_info.php?state=vaccine" class="card-link text-light">Total Vaccinated <i class="fas fa-arrow-circle-right"></i></a></div>
</div></div>

<div class="col-md-4"><div class="card card-stats card-round" style="background-color:#Ffa500; color:#fff">
<div class="card-body"><div class="row">
<div class="col-3"><div class="icon-big text-center"><i class="fas fa-user-alt-slash"></i></div></div>
```

```
<div class="col-1 col-stats"></div>

<div class="col-6 col-stats"><div class="numbers mt-4"><h2 class="fw-bold text-
uppercase">Unvaccinated</h2><h3 class="fw-bold text-
uppercase">1</h3></div></div>

</div></div>

<div class="card-body"><a href="member_info.php?state=non_vaccine"
class="card-link text-light">Total Unvaccinated <i class="fas fa-arrow-circle-
right"></i></a></div>

</div>

</div></div>

<div class="row"><div class="col-md-12"><div class="card"><div class="card-
header"><div class="card-title fw-bold">Data
Analytics</div></div></div></div></div>

<div class="row"><div class="col-md-12"><div class="card card-stats card-
round"><div class="card-header"><div class="card-title text-center">Members
Status</div></div><div class="card-body"><canvas
id="myDonatChart"></canvas></div></div></div></div>

<div class="row"><div class="col-md-12">
<div class="card">
<div class="card-header"><div class="card-title text-center">Members
Contribution Fee</div></div>
<div class="card-body"><div class="row justify-content-center pt-2"><canvas
id="mybarChart"></canvas><div class="col-sm-3 mt-2"><input type="month">
```

```
onchange="filterChart(this)" /><button  
onclick="reset()">Reset</button></div></div><hr></div>  
</div>  
</div></div>  
</div>  
</div>  
</div>  
<footer class="footer bg-secondary-gradient"><div class="container-fluid"><div  
class="copyright ml-auto"></div> </div></footer>  
</div>  
</div>  
</body>  
</html>
```

## Appendix I. Curriculum Vitae



### PROFILE

Committed to continuous learning and staying up-to-date with industry trends, I strive to leverage my technical expertise to contribute effectively to team projects and achieve organizational goals.

### CONTACT

PHONE:  
09381670309

EMAIL:  
edson.angcaya.003@gmail.com

### ADDRESS

Kaybagal North, Tagaytay City

### HOBBIES

Video Editing  
Carpentry  
Gardening

# EDSON M. ANGCAYA

Graduating Student

### EDUCATION

#### **City College of Tagaytay**

2019 - Present  
Bachelor of Science in Information Technology

#### **Tagaytay City National High School**

2019  
Senior High School  
TVL- ICT

#### **Tagaytay City National High School**

2017  
Junior High School

#### **Salaban Elementary School**

2013

### WORK EXPERIENCE

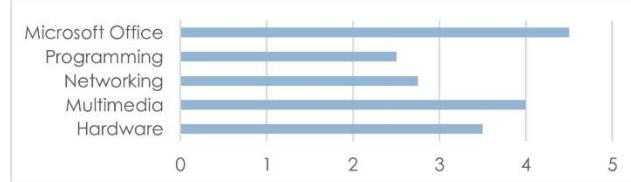
#### **On-the-job Training**

**ESQ- S1 Specialist Builders and Trading Ltd. Inc.**  
IT Staff/ Encoder

#### **Work Immersion**

**Tagaytay Hall of Justice**  
Organize some information

### SKILLS





# Jezryl Robis

Tolentino West, Tagaytay City

+639925502175

jezrylmii@gmail.com

*I am seeking a position in Information Technology industry. Where I can grow and use my skills and experience to help the organization's objectives successful. I want to excel in this field with hard work, perseverance, and dedication. Also, I am willing to be trained to work with your company.*

---

## EXPERIENCE

### MOUNT CARMEL RURAL BANK, INC. TAGAYTAY BRANCH

Intern

- Assisting and communicating with clients.
- Data tagging and encoding of data in system.

Tagaytay City, Cavite

December 2018

---

## EDUCATION

### CITY COLLEGE OF TAGAYTAY

Bachelor of Science in Information Technology

Tagaytay City, Cavite

August 2019-Present

---

## SEMINAR ATTENDED

### CYBERSECURITY AWARENESS of Tagaytay

Department of Information and Communications Technology  
February 2023

City College

---

## ADDITIONAL SKILLS

- |                                       |        |
|---------------------------------------|--------|
| • MS Office (Word, Excel, PowerPoint) | ●●●●○○ |
| • Adobe Photoshop                     | ●●●○○○ |
| • Video Editing                       | ●●●○○○ |
| • Programming (PHP and JavaScript)    | ●●○○○○ |
| • Web Design (CSS and HTML)           | ●●○○○○ |
| • Database Management (MySQL)         | ●●○○○○ |
| • Project Documentation               | ●●●○○○ |

# PAVILLO, JUDILYN A.



+63 997 399 6834



0119 Bagong Tubig, Galicia 1,  
Mendez Cavite



judilynpavillo21@gmail.com

## Education

**2013**

Maharlika Elementary School

**2017**

Tagaytay City National High School  
Junior High School

**2019**

Tagaytay City National High School  
SHS - TVL Information and  
Communications Technology

**2023**

City College of Tagaytay  
Bachelor of Science Information  
Technology

## Skills

Microsoft Office



Adobe Photoshop



Adobe Illustrator



Video Editing



Project Documentation



Programming (PHP)



Looking to establish a career in the field of Information Technology, I would like to work for a growth-oriented company and contribute to the development of the organization while upgrading my skill set and knowledge.

## Work Experience

**2018**

**Work Immersion**  
City College of Tagaytay  
Admin Office

**2018**

**Jollibee Tagaytay Mendez**  
Service Crew

**2023**

**Internship**  
Mount Carmel Rural Bank, Inc. Tagaytay Branch

## Seminar Attended

### Cybersecurity Awareness

Department of Information and Communications  
Technology Region IV-A Cybersecurity Bureau  
February 2023



## MARY ROSE ANN GAZA BALBOA

↗ 346 Vilbay St. Maitim 2nd East Tagaytay City  
 ☎ 09998152756  
 ✉ roseannbalboa08@gmail.com

## OBJECTIVES

To acquire valuable knowledge and skills to complement those that i have learned from School and OJT in an actual job environment. in return i offer my services and determination to be an asset to your company throughout the duration of my training period.

## EDUCATION

College :  
 City College of Tagaytay  
 Kaybagal South Tagaytay City  
 Cavite  
 Bachelor of Science in Information  
 Technology  
 2019 - present

Senior High School :  
 Tagaytay City national High School -  
 SHS  
 Mayors Drive Mendez Crossing East  
 Tagaytay City, Cavite  
 2018 - 2019  
 Junior High School :  
 Tagaytay City National High School  
 2016 - 2017

Elementary:  
 Tañong Elementary school Unit1  
 Tañong Malabon City  
 2012 - 2013

## REFERENCE

Jeff Añonuevo - College  
Instructor

Joel Cabrera - Senior High  
Instructor

## PERSONAL DATA

- Age : 22
- Date of birth : August 1, 2000
- Civil status : Single
- Religion : Catholic
- Nationality : Filipino

## SKILLS

- Basic computer literacy skills
- Organizational skills
- Strategic planning and scheduling skills
- Time-management skills
- Verbal and written communication skills
- Editing Videos and Photos by using Photoshop

## EXPERIENCE

### Student Intern (ojt)

OJT (Student Intern College )  
 Mount Carmel Rural Bank Tagaytay Branch  
 January 23, 2023  
 J.P Rizal Avenue , Cavite

Work Immersion (Senior High School)  
 Mount Carmel Rural Bank Tagaytay Branch  
 Nov. 20 - December 3, 2018  
 J.P Rizal Avenue , Cavite



# CHRISTIAN MAHINAY

95 Daang Balite, Malabag, Silang, Cavite  
+6399217978217  
christian09876.cm@gmail.com

*I'm looking for work in the information technology sector. Where I can grow and use my talents and expertise to assist the organization's aims effective. With diligence, tenacity, and commitment, I wish to achieve success in this sector. I am also open to receiving training to work for your business.*

## EXPERIENCE

---

### OLIVAREZ COLLEGE TAGAYTAY

Intern

Tagaytay City, Cavite

January 2023

- Assisting and communicating with clients.
- Configure Internet Problems

## EDUCATION

---

### CITY COLLEGE OF TAGAYTAY

Bachelor of Science in Information Technology

Tagaytay City, Cavite

2019-Present

### OLIVAREZ COLLEGE TAGAYTAY

TVL-Information Communication Technology

Tagaytay City, Cavite

2019

### MALABAG NATIONAL HIGHSCHOOL

Malabag, Silang, Cavite

2017

### MALABAG NATIONAL HIGHSCHOOL

Malabag, Silang, Cavite

2012

## SEMINAR ATTENDED

---

### CYBERSECURITY AWARENESS

Department of Information and Communications Technology

City College of Tagaytay

February 2023

## ADDITIONAL SKILLS

---

- |                                       |            |
|---------------------------------------|------------|
| • MS Office (Word, Excel, PowerPoint) | ● ● ● ● ○○ |
| • Adobe Photoshop                     | ● ● ● ○○○  |
| • Video Editing                       | ● ● ● ○○○  |
| • Programming (PHP and JavaScript)    | ● ● ○○○○   |
| • Web Design (CSS and HTML)           | ● ● ○○○○   |
| • Database Management (MySQL)         | ● ● ○○○○   |
| • Project Documentation               | ● ● ● ○○○  |