DEVELOPMENT OF PAYROLL MANAGEMENT SYSTEM IN AL DAWAH PRODUCERS' COOPERATIVE

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ABSTRACT

A payroll system is the process of paying employees, depositing payroll taxes, and keeping a record of the transactions. This process can be completed manually or automatically with software to save time and reduce the chance of error. In this modern day, the Al Dawah Producers Cooperative still uses Microsoft Excel for calculating salaries and making payroll reports; they also generate payslips manually and use paper-based tracking of attendance. To address these problems, the researchers aimed to transform Al Dawah Producers Cooperative's manual payroll system into a web-based payroll system. The system can generate payroll reports and payslips, can also display attendance reports, and it is a QR code-enabled attendance system. Additionally, the system enables backup files for the payroll reports and employees file management system. The evaluation instrument that the researchers used to assess the level of acceptability of the system is adapted from ISO 25010. The result indicates that the system is functional and secure, working as intended within the specified circumstances obtaining an overall mean of 3.08 which falls within the descriptive rating of "Very Acceptable" from the twenty (20) respondents. The study showed that developing a web-based payroll management system can increase the payroll accuracy, reduce payroll costs, and reduce the time spent generating payslips and salary reports.

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THE PROBLEM AND ITS SETTING

Background of the Study

A payroll system is the process of paying employees, depositing payroll taxes, and keeping a record of the transactions. This process can be completed manually or automatically with software to save time and reduce the chance of error. It often includes tasks including keeping track of employees' work hours, figuring out gross and net pay, deducting taxes, and producing payslips. There are many departments in a company, and each department has a payroll section to manage its payroll activities. Each segment must carry out necessary operations such as data collection and preparation, data entry, updates, monitoring, and reporting. Many of these old practices and procedures must be studied in accordance with changing needs, changing employee demands, and new technologies (Mahajan et al., 2018). According to Tiwari et al. (2022), the payroll process is an important procedure in a company since it involves numerous activities such as correcting and paying the workforce's services, as well as protecting the organization's reputation through proper recordkeeping compliance with government authorities and employment laws.

Al Dawah Producers Cooperative is located in Quezon Province. It was established last 2020. This business is one of the leading cooperatives in the Philippines and one of the leading suppliers and producers of essential oils like citronella essential oils and elemi essential oils. They focus on the production and distribution of agricultural goods. Al

Dawah Producers Cooperative has eight regular employees and more than 300 part-time farmers.

In this modern day, the Al Dawah Producers Cooperative still uses Microsoft Excel for calculating salaries and making payroll reports; they also generate payslips manually and use paper-based tracking of attendance because their biometrics do not always work. In addition, their current system doesn't have backup files. That's why last time they had a problem making payslips because their payroll records were accidentally deleted. These are the challenges they are now dealing with. The manual system they are using makes it difficult for HR to properly search, modify, and generate payroll reports. Errors in salary computation are more likely to occur because the attendance tracking is not accurate. Files and databases are not secure, and the current system does not have the ability to restore files in the event of data loss.

To address these problems, the researchers aimed to transform Al Dawah Producers Cooperative's manual payroll system into a web-based payroll system. The researchers aimed to change their existing system to secure backup data and records, increase the payroll system's accuracy, reduce payroll costs, and reduce the time spent generating payslips and salary reports.

Objectives of the Study

The main objective of the study is to develop a web-based payroll system for Al Dawah Producers Cooperative.

Specifically, it aims to:

1. Design a web-based payroll management system with the following features:

    - Generate payroll reports and pay slips.
    - Display attendance report.
    - QR code-enabled attendance system.
    - Employees file management system.
    - Enable backup files for the payroll reports.

2. Create the system using Visual Studio, Laravel, PHP, HTML, CSS, JavaScript, and MySQL.

3. Test and improve the payroll system's functional suitability and security.

4. Determine the level of acceptability of the Al Dawah Producers Cooperative Payroll System using the ISO 25010 quality standards.

Scope and Limitations of the Study

This study focused on the improvement of the payroll system for Al Dawah Producers Cooperative. The researchers developed a payroll system that will help the cooperative to calculate their employees' salaries based on their daily work hours and attendance adherence. Since the cooperative has two types of employees, part-timers, and regular employees, the proposed system will help the administrator to calculate each employee’s type of salary based on their attendance. It includes the computations of their basic pay, holiday pay, 13th month pay, overtime pay, and deductions for government contributions from SSS and PhilHealth, for regular employees. It also comes with a feature where the administrators can view, generate, and securely store the payroll records of each employee, and track employees' attendance records, and employees and administrators can have access to their own payroll records every month. Employees and administrators have their own unique credentials to log in and access the proposed system. Administrators can register and add new employees to the system and edit current employees' information. Employees can view their pay slips and have an option to print it out. The system also includes an attendance monitoring feature, where employees scan QR code for time-in and time-out, and administrators can view the dashboard display of the employee with the most absences and tardiness for a specific day or month.

This system applies only to Al Dawah Producers Cooperative, Brgy. Burgos Lopez, Quezon branch; other barangays in Quezon province are not within the scope; and other provinces inside the country.

The study will not cover issues related to missing loan payments, tax related forms and disputes, and accounting reports that might be needed by their general manager. It will also not address the tracking and managing of each employee's performance and feedback, termination of an employee's contract, and selecting benefit packages and managing beneficiary enrollment.

Chapter 2

CONCEPTUAL FRAMEWORK

This chapter discussed the Review of Related Literature and Studies, the Conceptual Model of the Study, and Operational Description of Terms.

Review of Related Literature

Attendance Monitoring

According to Nuhi et al. (2020), *Smart Attendance System using QR Code* to monitor student attendance has various advantages. For example, it automates the attendance process, saving time and reducing the need for manual workforce. Second, it improves the efficiency and speed with which attendance is taken, making the process more convenient for instructors as well as students. Furthermore, QR code attendance systems may validate student identity, preventing fake registrations and maintaining correct attendance records. The usage of QR codes also enables simple check-in via scanning, removing the need for manual roll calls.

This study was chosen by the researchers because it shows the importance of QR codes in attendance monitoring. The researchers will utilize this QR code technology to track attendance in the payroll management system that they are developing.

According to Koppikar et al. (2019) *Face recognition based Attendance Management System* is a solution by reason of most institutional authorities are frustrated

by the time-consuming process of manually tracking their staff attendance. The manual process of signing on paper is time-consuming and unsafe. At such locations, an effective attendance monitoring system must be implemented. A radio frequency identification (RFID)-based attendance system provides a solution for challenges such as fake attendance. This paper presents the design of an RFID-based attendance monitoring system that uses RFID tags connected to ID cards to uniquely identify each employee or student. In comparison to the traditional way, this makes the system for recording attendance easier, faster, and more secure. This system is intended for usage in a variety of educational institutions, corporate offices, government offices, and so on.

The researchers selected this study because they want to learn more about their payroll system's attendance tracking. The RFID based attendance monitoring might help researchers in making employee attendance recording quicker, faster, and more secure.

Asabere, Sekyere, and Ofosu (2020) developed a *Wireless Biometric Fingerprint Attendance System using Arduino and Mysql Database*. These researchers considered fingerprints to be the best and fastest method for checking attendance. They are safe to use, unique to each individual, and do not change during one's lifetime unless there is an accident. The goal of the research was to improve the fingerprint identification system for use with a huge database. The main objective of this work was to design and build an attendance system employing a fingerprint module. The major components used to insert records into a database in this system are the Arduino Wemos D1 R2 ESP8266 (microcontroller) and the Adafruit fingerprint reader.

In terms of checking attendance, this system contrasts with the researchers' system. In this study, fingerprint biometrics were applied in the payroll system. The researchers want to have other ideas when it comes to attendance monitoring in a payroll management system.

According to Mishra S. et al (2021) their study discusses the challenges of traditional attendance-taking methods in educational settings, including time wastage, difficulty in managing data, and the risk of fake attendance. To overcome these challenges, the proposed solution suggests leveraging mobile technology and QR codes. The system comprises three components: QR code generation, an attendance-taking application, and attendance report generation. Each student is assigned a unique QR code, which the instructor scans using the designated application to record attendance. This method eliminates manual calling of names and reduces the likelihood of fake attendance, offering an efficient and reliable solution for attendance recording in educational institutions.

Similar to the proposed attendance system using QR codes, the researchers' working payroll system incorporates technology for efficiency, employing digital tools like automated calculations and report generation to streamline processes and reduce manual labor.

Elbehiery, H. (2019). proposes a method employing *QR code technology to automate attendance tracking* in universities, addressing ongoing discussions about how to manage attendance records. Students are presented with QR codes at the start of each lecture, which they scan to confirm their presence; this information is securely stored in a database for

professors to access as needed. The paper details the implementation process and explores additional features, including integrating GPS technology for accuracy and implementing identity verification measures to prevent fraudulent registrations. Moreover, the system continuously updates attendance records, facilitating the generation of comprehensive reports to improve educational processes.

Similar to this study, the researchers aimed to automate accurate calculations and report generation for efficient salary, employee and attendance management.

Payroll Management System

The study conducted by Murla et al. (2020) titled *Assessment of School-Based Payroll System: Basis for Enhancement.* These researchers evaluated payroll systems of fourteen (14) schools within the Department of Education, Division of Nueva Ecija which are in the large category. Based on the information gathered, each institution calculates employees' monthly salary using Microsoft Excel. The findings revealed that three (3) areas require improvement: safety and security, efficiency, and timeliness. Furthermore, the results revealed that the primary issue encountered by payroll makers is the amount of time necessary in payroll preparation. This suggests that the system requires improvement in order to maximize the use of computers and produce a more secure, accurate, error-free, and speedier payroll system.

This study is related to the researchers' study in terms of the problems that the Al Dawah Producers Cooperative encountered. Since both mentioned places are in rural areas, they face the same issue. Therefore, the researchers' proposed system aims to improve the payroll system's safety, security, efficiency, and timeliness.

According to Zhao, M. and Rabiei, K. (2023). *The Feasibility of Developing a Human Resource Payroll Management System Based on Cloud Computing* is highlighted in this study, and the approach to problem resolution is applied to a practical situation. The model given in this article provides a comprehensive framework for investigating the feasibility of implementing a cloud-based human resource payroll management system.

This research investigates the feasibility of building a human resource payroll management system utilizing cloud computing. It provides a comprehensive framework for companies to analyze the possible benefits and problems involved with adopting a cloud-based approach to HR payroll management, making it a relevant model for analyzing the feasibility of such an implementation.

According to Rumetna et al. (2021) The Sorong Islands District Office has problems in terms of employee payroll, because it is still carried out by means of recording using an employee job record book and tax deductions, etc. recording employee wages according to class and position takes a long time. This issue can be overcome by utilizing ICT to develop a payroll information system based on class or position and distributing deductions evenly. The researchers developed *Payroll Information System Design Using Waterfall Method* to utilize to build this payroll information system, together with Unified

Modelling Language (UML), Macromedia Dreamweaver CS 6 for interface design. The goal of this study is to be able to process all employee salary data from the Sorong Kepulauan District.

The system used by Rumetna et al. is similar to the system currently being developed by researchers. The system that saves payroll administrators time and distributes deductions equitably.

As stated by Nautiyal P. (2024), *Salary Payments Transcend Mere Financial Transactions*, symbolizing an organization's respect and value for its employees. Timely and accurate salary disbursements enhance employee morale and motivation, cultivating trust and reliability towards the employer, which subsequently boosts productivity and loyalty. Conversely, delays or inaccuracies in salary payments can lead to dissatisfaction and negatively affect employee engagement.

The author highlights that salary payments are more than just financial exchanges; it represents the organization's appreciation and regard for its employees. By ensuring salaries are paid on time and correctly, companies can significantly boost their employees' morale and motivation. This practice fosters a sense of trust and reliability towards the employer, which can lead to higher productivity and greater loyalty from employees. On that note, if there are delays or mistakes in salary payments, it can cause dissatisfaction among employees and harm their engagement and commitment to the organization.

As stated by Ahmi A. et.al. (2018), *Payroll Processing* is a critical procedure in every business; it entails various duties to assure correct and timely payments of workforce services, as well as to safeguard the firm's reputation through good record-keeping compliance with government employment laws. Despite its critical role in the organizational process, research on payroll processing is sparse when compared to other transaction processing systems such as sales and purchases.

This article highlights the importance of payroll processing in companies. However, when compared to other transaction processing systems, research in the subject of payroll processing is rather limited. This is similar to the study conducted by the researchers because their client still needs to improve their payroll system.

Since HR technologies are primarily used for HR administrative applications like payroll and benefits administration, this research has significant implications for assessing their effectiveness. Failure to pay individuals on time and in the correct amount can lead to massive worker dissatisfaction and distress, which can seriously harm the employer's image. The study by Mendoza and Putri (2020) provides the vital factors that should have been taken into account in designing, executing, and rolling out *the New Payroll System at PT Sindo Energi Faramiga* by using the system development life cycle (SDLC). The factors that contribute to the success or failure of project implementation are the same, strengthening their reliability and validity. By using the payroll system, the resulting payroll information is more complete, efficient, fast, and precise than the previous system, which always experiences delays in presenting payroll report information.

The significance of these technologies on company performance and employee satisfaction is highlighted in this study. It has been shown that using the system development life cycle (SDLC) in the implementation phase improves the reliability and validity of project outputs. Companies that implement modern payroll systems can increase their efficiency, accuracy, and timeliness in supplying payroll information, thereby benefiting both the company and its employees.

According to Madavarapu (2014), a *Payroll Application* aims to keep track of the many allowances and deductions that must be offered to the organization's employees. It also generates the salary sheet for the organization's personnel, which aids the accounting department in a variety of ways. Payroll is a window application that is used to store the employee information of an organization or concern in many locations; this provides each employee detail with unique information. The administrator is in charge of maintaining the activities of the employees, while the client is in charge of less actions. This system is a user-friendly GUI-based program that will automate everyday tasks of the employees who operate in the concern.

The system, which is designed as user-friendly, centralizes employee information and provides personalized information to each employee. The payroll programmed automates and simplifies procedures, ultimately contributing to more efficient management of individuals within the company, with administrators controlling staff activities and clients managing daily duties.

According to Jagli, Solanki, and Chandarana (2013), the *Software For Payroll Management System* is used as a solution in their paper. The required architecture for using payroll management system from end user side that how to use it and from cloud provider side that how to provide a service is also explained. The system is primarily a payroll management system that will be used by clients who will register and pay for the same.

As a solution, the study focuses on payroll management system software. The research goes into the most important architectural components from both the end user's and the cloud provider's perspectives, describing how to use the system successfully and efficiently. It should be noted that this system primarily serves as a payroll administration solution for clients.

According to Grodzicki (2020), discussions about the social aspects of sustainable development are becoming more prevalent and more frequent on payroll policy transparency. Employees are hesitant to disclose information regarding their compensation. The reasons for such a policy include, first and foremost, concerns about the privacy of individual employees' unwillingness to share this information with others.

As the study of Grodzicki points out, the changing landscape of sustainable development addresses has underlined the necessity of transparency in payroll policy. Employee unwillingness to reveal salary details is a significant barrier. The hesitation comes principally from concerns about privacy and individual choices, highlighting the need for balanced and careful approaches to payroll policy transparency in support of broader social and sustainability goals.

According to Palladan A and Palladan N (2018), the study looks into how employees feel about payroll computerization and how it affects their output. The study was carried out using a qualitative research design by the researchers. For theory building, grounded theory was also used. Eleven staff members from three distinct organizations were meticulously chosen to partake in the research. Semi-structured questions were used in the recorded interview. Transcript peer review ratings indicate 86% or more agreed. The study finds, among other things, that prompt benefit payments, work enrichment, and precision in calculating rewards all boost employee productivity. The research suggests some recommendations and offers ideas for other study directions.

The researchers selected this study because it focuses on the employee's perception in regard to payroll computerization. It was concluded that employees' productivity is affected by the introduction of a computerized payroll system, and the manual payroll system hinders their productivity in their work. Giving an accurate minimum wage to employees reduces demand in new workers and raises the minor cost of an employee.

According to Goyal P, Agrawal A, and Nagelia S (2018), any firm can utilize a *Web-Based Employee Payroll Management System* to oversee the personal data of the workers in the business. The Payroll Application was created with the intention of in order to preserve information about different employees, the deductions and allowances that must be made for the personnel of the company. There will be a unique entry ID of each and every employee in any company. As stated by the joining date and the date on which the salary is calculated, there will be a day count entered and base salary will be specified based on the employee's and department's post.

Wamp, MySQL, HTML, CSS, JavaScript, PHP my Admin has been utilized on the server. HTML, CSS, Javascript were used for many years as front-end. The most often used language for connecting the front-end to back-end has been PHP. MySQL is most often utilized as database software. Wamp server is employed in the web application locally on the testing computer objectives.

This study focuses on creating a payroll system with the help of developer's tools such as MySQL and HTML. This study helps the researchers to gather more information and ideas on designing the payroll system that they will propose for their chosen client and organization.

A Payroll is a system that the business uses to manage the payments made to workers. The payroll system simplifies HR's monthly payment of all workers' salaries. Due to the COVID-19 outbreak, it is difficult for workers who work from home (WFH) to be present. The HR department needs assistance in supervising and tracking employee absences as well as controlling remuneration. In response to these concerns, the researchers Sutomo and Gunawani (2023) created a *Web-Based Information System* to help the Human Resource Division (HRD) supervise and manage staff responsibilities and remuneration. Their system has been tested at the employee time management stage, the Human Resources Department's confirmation process and test result verification, as well as several components related to the pay reporting process and outcomes. The success rate of UAT tests is based on average input. Expectations that must be met at the corporation.

In relation of the study above to the researcher’s study, this study was conducted during COVID-19 pandemic where employees were work from home it was difficult for the HR department to calculate salaries which is why they created a web-based payroll system. The researchers' client company was created during the pandemic and so the corporation did not have a proper payroll system.

Data Management System

According to Oracle Philippines (2020), *Data Management* is the process of gathering, storing, and using data in a secure, efficient, and cost-effective way. The purpose of data management is to assist individuals, organizations, and connected things in improving the use of data within the limitations of policy and legislation so that they can make decisions and conduct actions that maximize the organization's advantage.

Effective data management is important for creating an efficient payroll system. Companies can optimize the accuracy and reliability of their payroll operations while following policy and legislation by ensuring that data is collected, kept, and used securely, efficiently, and cost-effectively. This improves the researchers' payroll system, benefiting both employees and organizations.

According to Rodriques et al. (2020), typical *Database Management Systems* are not suitable in general because of the diversity, heterogeneity, and enormous volume of data created by these entities. Many various principles should be addressed while designing

IoT data management systems. These various ideas enabled the development of multiple approaches for IoT data handling. Some middleware or architecture-oriented solutions make data integration easier. Other options on the market include effective storing and indexing of structured and unstructured data, as well as support for the NoSQL language. This article defines the most important data management principles in IoT, reviews the present solutions suggested for IoT data management, evaluates the most promising solutions, and identifies significant outstanding studies on the topic, providing guidance for future contributions.

These concepts can be very helpful for developing a payroll system, particularly when dealing with a wide range of employee information and financial data. The article's emphasis on data integration, storage, indexing, and support for NoSQL languages provides useful ideas for developing a strong and effective payroll system. A payroll system can improve data accuracy, security, and general effectiveness by using these concepts.

The study of Rozario (2016) is intended to improve on the existing manual system automatic with the use of computerized equipment and cutting-edge computer software, meeting their needs, so that their valuable data and information may be saved for a longer period of time with easy access and modification. The necessary software is simply accessible and simple to use. This web application can keep and view computerized records without generating duplicate entries. The project discusses how to handle user data for optimal performance and better customer service.

The study emphasizes the change from manual to automated systems similar to the study of the researchers. It emphasizes the benefits of innovative software and technology in preserving important payroll data for extended periods of time while allowing for quick access and modifications. The adoption of easily accessible and user-friendly software allows for efficient record-keeping with minimal redundancy. This research will assist researchers in laying the foundation for a modern and efficient payroll system that prioritizes optimal performance, data management, and increased customer service, providing a smooth transition into the digital age of payroll management.

Laravel Framework

According to Singla L. (2022), *Laravel is a web application development framework known for its expressive and elegant syntax*, which simplifies and accelerates the web development process, making it more enjoyable for developers by addressing the complexities of handling PHP code. Its ease of use is bolstered by excellent documentation, strong community support, and an intuitive interface that even beginners can quickly grasp. Laravel includes built-in libraries, is easy to deploy on major cloud service providers like AWS and features a powerful Blade Templating Engine. Additionally, it offers robust security and authorization mechanisms out-of-the-box, making it a robust and scalable framework for web development.

The article described Laravel's ability to streamline and simplify the web development process, making it accessible even to beginners due to its intuitive syntax and comprehensive documentation.

Yuhe R. (2015). Traditional web framework design methods often encounter significant limitations and are time-consuming. To address these issues, the author proposed a *Web Design and Implementation Method Based On The Laravel Framework*. Laravel standardizes the development process and automatically handles certain non-business logic tasks. This study presents the design and implementation of a simple Laravel model, which achieves automated processing for part of the design. Experimental and simulation results demonstrate that web design based on the Laravel framework offers scalability and robust extensibility, thereby improving development efficiency.

The author addresses the limitations and time-consuming nature of traditional web framework design methods by proposing a method based on the Laravel framework. The author developed a simple Laravel model that automates certain non-business logic tasks, standardizing the development process.

Laaziri, M., et al. (2019). Provided an Effective *Model for Comparing And Analyzing The Most Widely Used PHP Frameworks, Symfony And Laravel.* The findings indicate that both frameworks are excellent choices for most PHP-based projects, offering a full-stack web application development environment. Symfony is particularly well-suited for larger projects due to its stability, extensive community support, and long-term support (LTS). Laravel, being the most popular framework, is ideal for full-stack development and

is noted for its ease of learning. It also comes with LTS and community support. Thus, selecting a PHP framework should be based on available resources and long-term development plans to aid developers in making the best choice.

PHP Programming Language

Apiag, C. P., Cadiz, E. B., & Lincopinis, D. (2023). *An Introduction to PHP Programming Language.* PHP refers to a server-side scripting language widely utilized for website development, presenting its inception, purposes, user role based, advantages, and drawbacks, alongside its basic syntax and reasons for its popularity versus other languages. It also encompasses supplementary sections that outline ten reasons for learning PHP and its applications in programming.

Web developers need to understand PHP in order to efficiently design complex and dynamic web applications. This article emphasizes the flexibility and broad application of PHP in the field of web development, making it a comprehensive resource for both beginner and skilled developers.

Benmouusa K., et al. (2019).. *PHP Frameworks* play a vital role in the web development toolkit, aiming to streamline software development processes and gaining popularity in web-based projects due to their ability to accelerate development and uphold coding standards, resulting in robust and maintainable code. The utilization of PHP frameworks enhances the stability and security of the final web applications produced.

It is essential to incorporate a PHP framework when developing a payroll system. PHP frameworks like Laravel can be used to speed up development and ensure on-time delivery while maintaining coding standards. This not only makes it easier to build a stable and secure payroll system but also makes it more reliable and maintainable, which is all of which are essential for effectively managing payroll operations.

Tailwind CSS

According to Somi M. (2021). *Tailwind* enables developers to write CSS directly in markup, which speeds up the building of modern websites. Because of its great adaptability, developers can develop a distinctive, effective, and consistent user interface (UI) while tailoring it to a particular project. The addition of Tailwind CSS has greatly improved the application in their project, encouraging a framework that is more effective and manageable. These researchers has been able to quickly adjust to changing design requirements and provide an aesthetically pleasing user experience because to the framework's adaptable nature.

The implementation of Tailwind CSS in web development significantly expedites the creation of modern websites by allowing researchers to create a pleasing design for users of the payroll system.

According to Sabeswaran R (2023), *Tailwind CSS* improved web development by streamlining and updating the process of applying styles to websites. Its flexible

configuration, utility-first philosophy, and robust community support have made it a tempting option for developers who want to construct aesthetically pleasing, scalable, and effective online applications.

Based on this literature, Tailwind CSS is worth implementing in any kind of web online application that can be applied to the researchers' payroll management system.

MySQL

Gissona N. (2024) Users can work with huge quantities of data across various databases using MySQL, an open-source relational database management system owned by Oracle. One of the most widely used database management systems in the world is MySQL. With a graphical user interface, MySQL software enables users to send requests to database servers to obtain output values.

Based on this article, utilizing MySQL offers the advantage of efficiently handling huge amounts of employee data stored across multiple databases. By having its user-friendly interface, users can seamlessly interact with the MySQL software to generate precise payroll outputs, streamlining payroll management processes.

jQuery

According to Melville N (2018). *JQuery* is a JavaScript library that makes it easier and more consistent for JavaScript code to interact with HTML components, increasing the dynamic nature and engagement of webpages. Its usefulness is demonstrated by how well it handles the problems that older approaches leave behind. As the foundation, jQuery works well to locate HTML components and fix universally compatibility problems, which speeds up the development process.

The implementation of jQuery is crucial to the operation of the researchers' payroll system and may quickly add interactive features like real-time updates and dynamic form verification by taking advantage of its features.

According to Melanie (2024). *jQuery* has transformed the landscape of web development and remains an indispensable resource for numerous developers due to its ease of use, cross-browser compatibility, and extensive array of functionalities, rendering it a reliable choice for various projects. Despite the advent of alternative technologies, jQuery endures as a cornerstone in web development, serving as a preferred tool for developers globally.

In the context of the researchers' payroll system, the enduring relevance of jQuery underscores its potential utility in enhancing user experience and streamlining functionality.

HTML

According to Hemmendinger D. (2024). *HTML* is a system used for presenting content from the Internet, where each unit of information is called a web page. These pages often contain links, allowing users to navigate between related content easily. HTML serves as the coding language for crafting web pages, utilizing markup tags to define various document elements like headings, paragraphs, and tables. These tags structure the document for display by web browsers, which interpret them to render content in a visually coherent layout, adjusting to screen size and available fonts

Visual Studio Code

According to Heller M. (2022) One of the most well-known tools in the software development space is *Visual Studio Code*. Because it is compatible with several operating systems, such as Windows, macOS, Linux, and Raspberry Pi, it is a very useful tool for programmers. With built-in support for JavaScript, TypeScript, and Node.js as well as a large library of extensions for a variety of programming languages and environments, Visual Studio Code positions itself as a one-stop shop for coding jobs. Despite being easily accessible, Visual Studio Code distinguishes out for offering an abundance of features that are carefully crafted to make the programming process easier.

Visual Studio Code simplifies the creation of a payroll system by providing easy-to-use features like automating and debugging, making coding faster and more efficient.

Related Studies

Pavani T. & Dhanusha S., (2020) conducted a study about *Payroll Management* that explained the association between the Human Resources department and the payroll system should be widened and developed. Each H.R. department should be given more regulatory authority to guarantee that the company pays attention to the welfare of its employees, and therefore the business's productivity can improve. Employees' personal details and other associated information stored in payroll system software should be kept confidential in a company, and H.R. should own responsibility for this thus, the terms and conditions of the payroll system should be modified on a regular basis in accordance with the labor laws established by the HR department.

This study correlates to the researcher's system in a way that this study consists of terms and conditions of a payroll system. The system is used by the Human Resources Department, which is why it is important to understand the association between HR and payroll and how it shall benefit the employees in accordance with the laws and regulations standards of the company.

According to the researchers Aguilera, Bronzas, and Marqueses (2011) of the *Automated Payroll System of Pamana Medical Center*. A great payroll is really one of the most important issues to pay attention to in almost every company. It is impossible to handle payroll responsibilities with a pen, ledger sheet and calculator, but nowadays it is more convenient for most companies to use computerized payroll software. The schools is also not exempted in using a payroll system namely the study of payroll system for the

teachers and staff of Liceo De Calamba the researchers viewed that Liceo de Calamba aims to provide high quality of education for their students and to establish great relationship with their employees by providing them with the right and appropriate benefits they must enjoy as population of Liceo de Calamba increases, its system must perform competitively, Payroll system is needed in order to have an accurate and error free in their payroll process and services.

This study is parallel to the researchers' study because the current problem that the company's clients are facing is a manual payroll system which is a challenge to an expanding company. This study provides information on how important it is for an organization to have an automated payroll. With a working automated system, it increases the company's productivity and the automated payroll to have an accurate and error free system.

The *Payroll Process at Universitas Proklamasi 45 Yogyakarta* continues to be processed manually and does not employ a computerized system, such as attendance overview, wage recapitulation additional salary to basic salary) and the entire amount of salary received by employees. This reduces the effectiveness and efficiency of the payroll process. The researchers Siregar, M. U., & Mahardika, D. E. K. (2019) developed a web-based employee payroll information system at Universitas Proklamasi 45 Yogyakarta utilizing the PHP programming language, the CodeIgniter Framework, and MySQL as its database. The findings of this study are the outcome of a web-based employee payroll information system with numerous parties contributing to data administration and processing. The employee payroll process becomes more effective and efficient with this

information system since payroll data is processed and computed by the system, resulting in high data accuracy and a short computation time.

The correlation of this research to the study of the proponents is because this research used the same programming languages for the study. This research includes the information system is important for processing payroll data.

The researchers Chavez, De Leon, Pilar, (N.D.) created a *Human Resource and Payroll Management System for SEPTTI-MWP Las Pinas*. The objectives of their system consist of generating reports such as payroll, pays lips and government remittances where the client could print slips at their earliest convenience and where the system could calculate 13 month pays, bonuses and incentives annually. Their system could also do back up data. The programming languages the researchers used were Java NetBeans 7.14 and WAMP server, the result of their study concludes that their system passed ISO25010 standards.

This study correlates to the researcher's study because it includes the following features that the system should need in its functionality.

According to Hidayati N. (2023) *The Importance of Effective Payroll Management* in organizations, companies, and government agencies, highlighting remunerating employees in accordance with their services rendered. Variation in payroll policies across different entities underscores the need for robust management practices to ensure compliance with regional minimum wage standards. However, many organizations still rely on conventional methods for payroll calculation, leading to recording difficulties,

salary delays, and inaccurate reports, potentially causing losses for employees. To address these challenges, the development of a payroll management system is essential, with the Waterfall model being a suitable approach due to its clear stages, aiming to produce an application tailored to the needs of the organization.

This study holds significance in providing a structured approach to developing an employee payroll information system using the Waterfall model. By adopting this model, organizations can streamline the development process, ensuring clear identification of stages and objectives, ultimately leading to the creation of an effective payroll management application. This system not only addresses current payroll management challenges but also sets a foundation for improved efficiency and accuracy in future payroll processes.

Sakpere W. and Olalekan A. (2023) developed a straightforward web-based attendance system, named *Web-based Payroll System for Fixed Term Employees*, tailored for manufacturing industries. This system is aimed at accurately calculating the payroll of fixed-term employees, whose wages are determined based on the number of hours worked at an agreed-upon hourly rate. The application integrates a biometric machine to capture employees' arrival and departure times, ensuring precise attendance records. By utilizing the Software Development Kit (SDK) of the digital Persona fingerprint scanner and integrating it with the system through J-Query, the authors ensured a secure and efficient method of recording employee attendance. The system utilizes MySQL for database management, with VB.NET and PHP employed for payroll system development.

The authors' research offers a critical response to employee fraud, which poses a threat to the viability of organizations currently. By integrating biometric technology with a web-based attendance system, the solution not only makes payroll calculations more accurate but also acts as a disincentive to fraudulent activity. The application of the System Usability Scale (SUS) in program assessment guarantees that the system that is designed satisfies user needs in an efficient and productive manner, protecting against fraud and manipulation.

Mohammed C. et al (2023) present a solution to the complex and time-consuming task of managing employee salaries, particularly prevalent in regions like the Kurdistan Region of Iraq where manual accounting processes are still predominant. Their *Web-Based Payroll Management System* (WPMS) streamlines salary calculations, minimizes errors, and ensures efficient maintenance of employee records. Implemented with HTML, PHP, JavaScript, jQuery, AJAX, and MySQL, WPMS facilitates speedy generation of pay slips, accurate reports, and detailed statistics while offering a user-friendly interface for easy data access and management. The study evaluates WPMS's usability using the system usability scale tool, achieving an impressive 87.8% satisfaction score.

This study offers a transformative solution by automating salary calculations and record-keeping. Their system addresses the inefficiencies and errors associated with manual processes, leading to increased efficiency and accuracy in payroll management. Moreover, its user-friendly interface empowers users to easily navigate and manage payroll data, contributing to organizational productivity and

streamlining administrative processes. The high usability satisfaction score obtained through evaluation underscores their system's potential to revolutionize payroll management practices in similar contexts, ultimately fostering organizational growth and effectiveness.

Handayani S.et al. (2023) This study is influenced by salaries that Bank Perkreditan has not maximized its Rakyat Ingertad Bangun Utama Ltd keeps files in hard copy form. Through their web-based employee payroll information systems make it easier for administrators to view salary data over the web. The tool an entity relationship is the term used to define the system model diagram (ERD). To implement this payroll information system, supporting components are required to work properly. These components require the Laravel programming framework and store databases in MySQL. Tailwind CSS design makes design easier. The results of this study, its applications can overcome the issues that existed in companies that do not yet have a payroll application and can be used to process salaries in the company.

In the study titled "Designing a Web-Based Employee Payroll Application" by Maulida N. and Wahyudi H. (2023), the authors address the inefficiencies and inaccuracies of a semi-computerized payroll system used by a raw material distribution company in West Java. The research aims to develop a more reliable system to reduce computational errors by using a qualitative descriptive methodology and the Object-Oriented System Engineering (OOSE) method. The payroll application, designed with PHP and the Laravel framework, utilizes a MySQL database for data storage. This new system is expected to

enhance the accuracy and efficiency of wage calculations, while also minimizing the risk of data loss.

This study is significant for several reasons. Firstly, it addresses the critical issue of payroll accuracy, which directly impacts employee satisfaction and trust in the organization. By transitioning from a semi-computerized system to a fully web-based application, the study aimed to significantly reduce computational errors, enhancing the overall reliability of the payroll process. Secondly, the use of modern technologies such as PHP, the Laravel framework, and a MySQL database suggests a scalable and efficient solution that can handle the company's needs as it grows. Finally, the study provides a practical example of how the Object-Oriented System Engineering (OOSE) method can be applied to real-world problems, potentially serving as a reference for other organizations facing similar challenges.

Maharani, N., Nasution, M. I. P., & Triase. (2021). *Employee Payroll Information System with QR Code Attendance*. In this study, the authors propose an employee payroll information system using the waterfall method, integrating QR code attendance registration with an external camera scanner. The system, developed with PHP programming language and MySQL database, aims to streamline salary calculations and enhance data storage efficiency for administrators, employees, and directors. Through black box testing, the system demonstrates improved accuracy in salary calculations and ease of attendance tracking for users.

This study underscores the importance of employing technological solutions, such as QR code attendance integration, in enhancing efficiency and accuracy in payroll management systems. By implementing this system, companies can mitigate errors in salary calculations and streamline administrative processes. Additionally, the use of QR codes for attendance tracking reduces manual input, saving time and resources for both employees and administrators.

According to Sontakke et. al (2021) *Employee Attendance and Payroll Is An Online Application* which serves the first obligation of each corporation. The primary function of payroll is to provide remuneration to employees in the form of a wage in exchange for their services, presence, and contribution to the corporation. Part-time employee attendances and payroll systems are still mostly manual, consisting of a filling system and an attendance sheet with the employee's signature. This is less efficient and effective. As a result of these issues, the development of an attendance system based on a web application form that automated forms of wage computation inside the payroll procedure.

Within the study above, this study relates to the current problem of the client’s payroll system which is manual processing, and it majorly affects employees especially part timer workers, which is why both parties created an automated employee attendance and payroll management system.

Conceptual Model of the Study

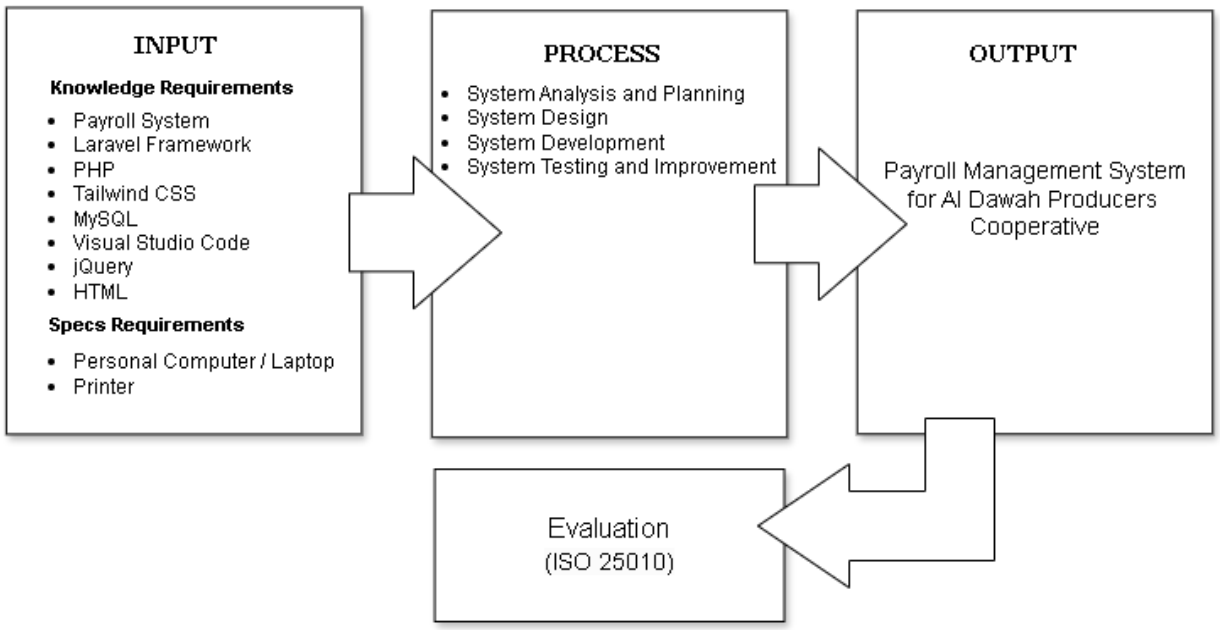


Figure 1. Conceptual Model of the Study

Figure 1 shows the conceptual model of the study. It is used to guide the development of the payroll system in Al Dawah Producers Cooperative. The components of the study have been arranged using the Input— Process— Output paradigm.

Input

The input component is categorized into two categories: knowledge requirements and specs requirements. The knowledge requirements consist of attendance monitoring, payroll, payroll management systems, payroll policy, data management system, payroll tax regulations, payroll outsourcing, payroll computerization, data storing and government

contributions and deductions. It also contains the knowledge of Laravel framework, jQuery, Tailwind CSS, HTML, MySQL and PHP for creating the project. And the specs requirements are personal computer/laptop and a printer.

Process

The next component is the process. It consists of system analysis and planning, system design, system development, and system testing and implementation. System analysis and planning include identifying problems and finding solutions to them. While system design showed the concept of the developed study. Next, system development is the creation of the whole payroll system. Finally, the system testing, and implementation is intended to evaluate the payroll system.

Output

The last component is the output. The last component is the output. It shows the final output of this study. This web-based payroll system will be used by Al Dawah Producers Cooperative.

Operational Definition of Terms

APS refers as the acronym for Al Dawah Payroll System

Gross Pay refers to the initial salary paid and offered to an employee. The researchers used this to determine the calculation of bi-monthly salary of employees and deductions of lates and absences of an employee.

Cash Advance refers to the borrowing of money from an employee's company prior to incurring any expenses.

Payslip refers to the document that is being generated by the payroll system, where it shows the details of an employee's salary including deductions and total earnings. It is also used as proof by employers that the employee got paid for a particular month.

QR Code refers to a two-dimensional barcode that serves as an identification card for attendance for all workers of Al Dawah Producers Cooperative

Generate Payroll is an action or feature of the system where users can optimize search details to accumulate a specific week period of payroll records.

On-call workers refer to individuals who work as seasonal farmers in Al Dawah Producers Cooperative.

Area Manager refers to an Al Dawah employee who manages and informs on-call workers.

Pay Period is a duration of time where employees and on call workers gets paid.

Chapter 3

METHODOLOGY

This chapter contains the parts of the methodology including the project design, project development operation and testing procedures and the evaluation procedures implemented in this study.

Project Design

The proposed Al Dawah Producers Cooperative payroll system is a payroll management system that helps the cooperative to calculate the salary and deductions of an employee. This proposed system is to ensure the payroll processing within the cooperative. The researchers aim to develop an automated payroll system that calculates the salaries, tax deductions, and other payroll related components, this is also to implement a reporting module that generates attendance summary, pay slips and payroll records, and secures employees information with back up files.

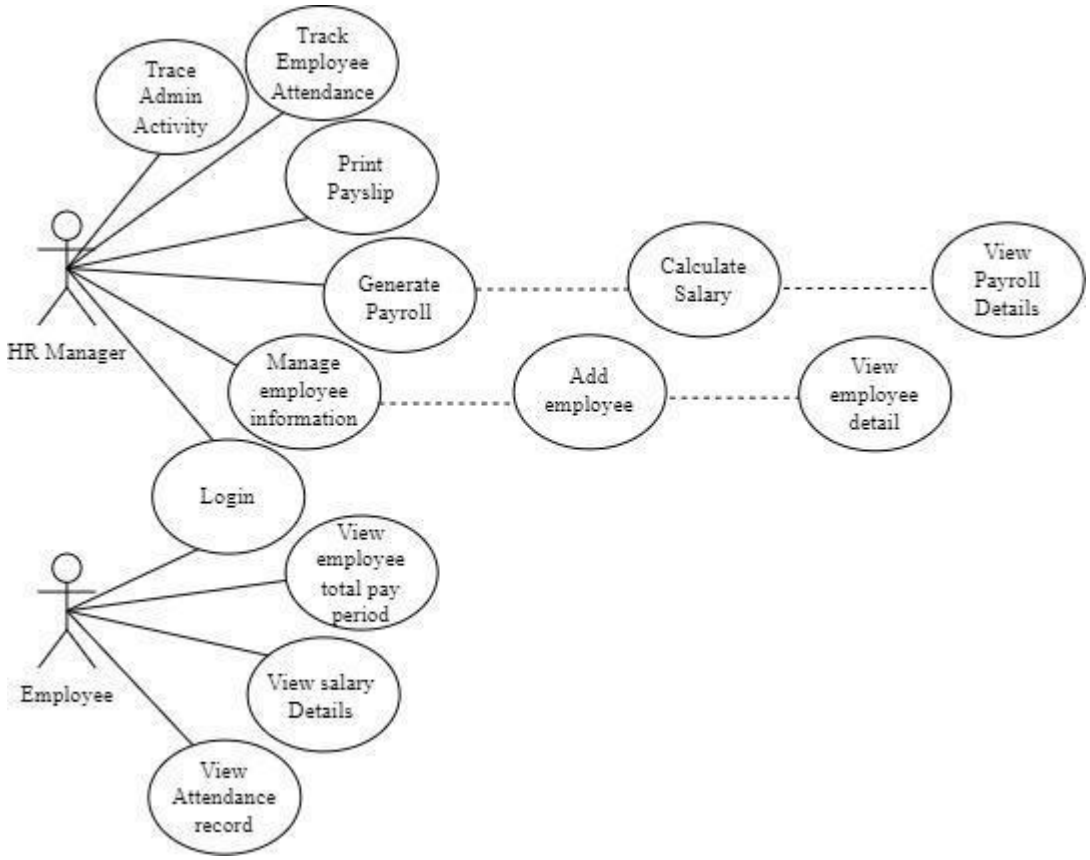


Figure 2. Use Case Diagram

In figure 2, it shows the Use Case of the study to illustrate the functionality of the system. The diagram shows the components and uses between admin and employee.

1. Admin

   Once the admin is logged in, the admin can manage employee information, calculate, and generate payrolls and pay slips, monitor the attendance of every employee, and view the logs of the current admin logged in for every action taken.

2. Employee

Once the user or employee has logged in, the user can view how much salary the user has accumulated for past and current months or years, the user can view every pay slip generated for the current user and monitor its own attendance records. The user can record its attendance using the QR module of the project which can be done by scanning the QR of the user in the module.

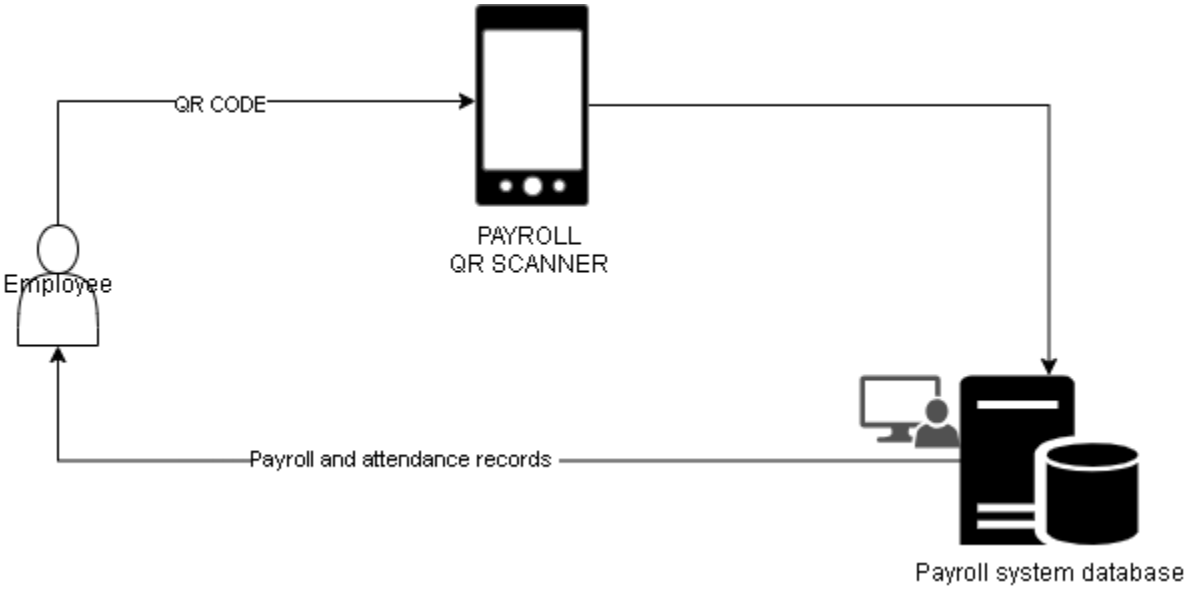


Figure 3. System Architecture of QR Attendance

Figure 3 shows a diagram where when an administrator registers employees into the system, each registered individual will have their own established QR code. The QR code will be used as their ID to login into their company. In contingent upon farmers, the person who is assigned to handle their attendance is the company's area manager, these individuals shall have the system incorporated into their own telephone devices. Then, once QR is scanned the data shall directly transfer into the payroll system database as follows summation of all attendance records, the system shall provide employees attendance activities and payroll records.

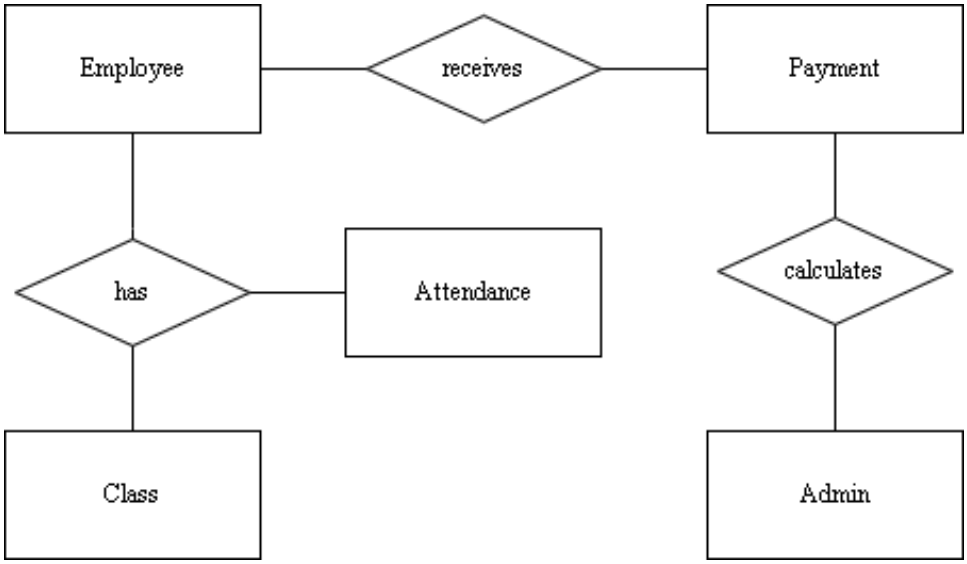


Figure 4. Entity Relationship Diagram

Figure 4 represents the existing system's entity relationship diagram (ERD). The ERD is used for database design and is crucial in adding constraints to an entity. The entity relationship diagram gives a snapshot of how entities relate to each other. The diagram represents the blueprint that underpins the business architecture, offering a visual representation of the relationships between different sets of data. The diagram represents the data and variables that will be included for each user.

Project Development

The project development shows the process flow of the web-based payroll system. It is presented using a visual table of contents (VTOC) diagram.

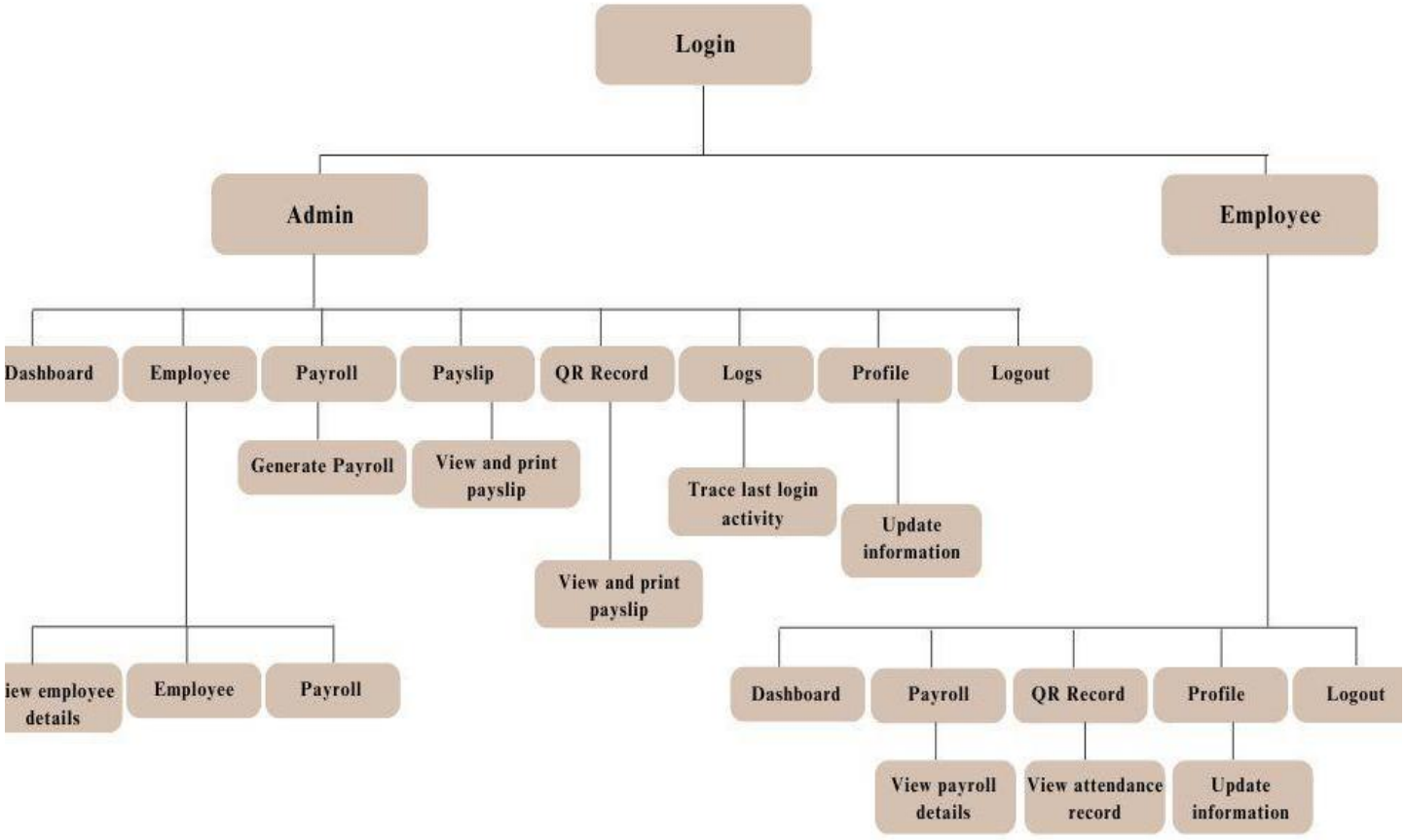


Figure 5. The Project Development Diagram

The system opens with the login page. The system will allow the user to log in as either an employee or a system administrator. Once the user decides, they will enter their own username and password, which will be provided by the system administrator. When a

user logs in as an employee, five (5) primary options display. First is the dashboard, it shows the overall earnings for both monthly and yearly periods. Next is the payroll option, which provides complete access to employees' salary information, then the QR record option, where users can track their attendance. The fourth option is the profile, where users can update their information. Lastly is the logout button, where redirects users back to the login page. Upon login as an administrator, eight (8) major menus showed. It has buttons for dashboard, employee details, generating payroll, pay slip, QR records, logs, update profile, and logout. When the administrator enters the employee button it shows every employee details. The payroll feature shows the payroll summary of every employee. The next feature is pay slip, which generates pay slips for every employee. Another feature is the QR record button, which allows admin to track employees' attendance. Then the logs button, where admin can trace the last login activity of the system. While the profile button and logout features have the same function on the employee user end.

The following are the steps and procedures that will be used to develop Al Dawah in accordance with the design parameters that will be addressed in this chapter. To establish the system swiftly and efficiently, researchers have employed software development models.

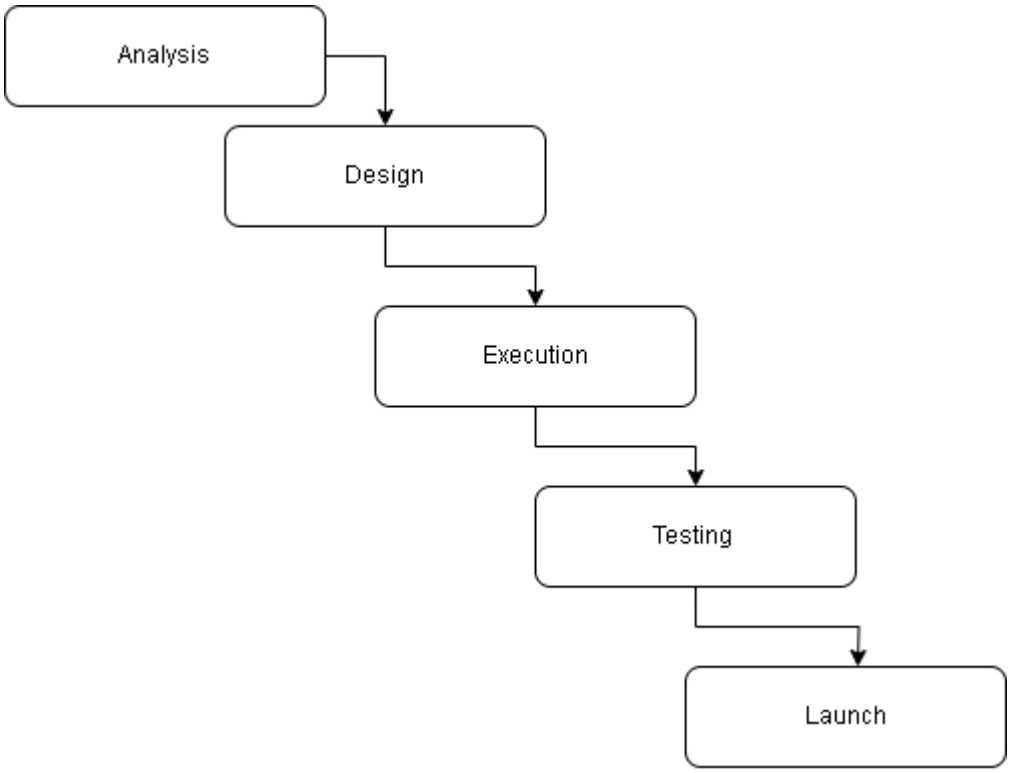


***Figure 6**. Waterfall Model*

Analysis Phase

The researchers began to generate concepts with their colleagues during the analysis phase regarding the way they intended to employ all the specifications. The requirements for the system that they intended to establish such as a laptop, the internet and research studies from past works of researchers. That they have discovered. Furthermore, the researchers envision all potential mistakes and issues that may arise while building the system and provide alternate strategies in case these difficulties may appear.

Design Phase

Data flow diagrams and frameworks are made to have guidance when building the system. Use case, context, and data flow diagrams provided the researchers with effective direction as they worked to develop the system. They can also see how the system will flow visually thanks to the diagrams.

Execution Phase

Using the diagrams that enable the researchers to visualize the system, all frameworks were transformed into systems throughout this phase of system development using the knowledge of programming languages to be use Visual Studio, PHP, HTML, CSS, JavaScript, MySQL, and Laravel to create the payroll management system.

Testing Phase

Prior to dissemination and user use, the system should undergo testing using the ISO25010, the researchers will ascertain in this step whether the system has a programming error, whether a bug needs to be corrected, and whether the system is functional and meets to the client's expectations. For users to benefit from the system that the researchers established, it will also be determined during the testing phase whether the system needs to be enhanced or whether there is potential for development.

Launch Phase

This phase comprises the launch of Al Dawah Producers Cooperative payroll system that will be utilized by the clients and workers of the company.

Operation and Testing Procedure

The following methods are accomplished to operate Al Dawah Producers Cooperative Payroll System:

The following are employed during the testing phase:

1. Desktop or Laptop
2. Internet Connection
3. Web Browser

The following steps for the Al Dawah Producers Cooperative Administrator and Employees:

1. The user must open their web browser on their desktop or laptop.
2. The user shall search for and visit the link to Al Dawah Producers Cooperative Payroll System.
3. The user must login to their Al Dawah account.

The testing that is undertaken on the ISO25010 framework in terms of functional suitability, and security. These tests are to be conducted to see if the systems function in accordance with expectations.

Al Dawah Producers Cooperative payroll website is designed to handle a variety of operations, such as salary computations, tax deductions, and benefits. However, concerns have been raised relating to potential flaws and problems affecting the payroll system's accuracy and operation. The organization chooses to execute a fully functional suitability testing module to assure the website's functional compatibility, as shown in Table. 1

Table 1.

Test Procedure in Functional Suitability

Test on Module	Steps to be Taken	Expected Result
Scan QR	1. Login the credentials needed for accessing the QR module. 2. Allow the browser to have access to the device camera. 3. Scan the QR of the user.	The system has successfully recorded the attendance of the user.
Add Employee	1. Click the “Add Employee” button. 2. Enter the employees’ details. 3. Click the “Add” button to add data to the database. 4. Verify the employee in the “Employee Details” page.	The system has successfully added the employees.

Generate Payroll	1. Click the “Payroll” tab. 2. Enter the date range you want to generate. 3. Click the “Search” button. 4. Click the “Export” button to get the Excel file.	The system has successfully generated payroll from one date to another.
Print Payslip	1. Click the “Payslip” tab. 2. Select the week period you want to generate. 3. Print or edit the payslip details.	The system has successfully generated the payslip according to the week period selected.
QR Attendance	4. Login the credentials needed for accessing the QR module. 5. Allow the browser to have access to the device camera. 6. Scan the QR of the user.	The system has successfully recorded the attendance of the user.

The system saves sensitive employee information, salary data, and tax information on the Al Dawah Producers Cooperative payroll website. Researchers must carry out security testing to assure the confidentiality, integrity, and availability of this sensitive payroll data, preventing unwanted access, data breaches, and other financial and reputational issues. As shown in Table 2.

Table 2.

Testing Procedures for Security

Test on Module	Steps to be Taken	Expected Result
Login Authentication	1. Login with correct username and password. 2. Login with incorrect username and password.	Users successfully access the system; otherwise, an error message is displayed.
Role-Based Access Control	1. Login as admin user 2. Attempt to login admin account as a regular employee.	Admin successfully accesses the dashboard, if users are not admin it will be denied.
Password Policy	1. Click the “Profile” tab. 2. Change it with a long and unique password. 3. Attempt to change with a weak password.	The user successfully changes the password if its weak password it will be rejected and error message displayed.
Audit Trail	1. Click the “Logs” tab. 2. Display the activity of the admin user. 3. Select a specific date for the activity done.	The system tracks all the activity of the admin user.

Evaluation Procedure

The following shows the criteria of the Evaluation Procedure for the Al Dawah Producers Cooperative payroll system.

The evaluation instrument that the researchers assessed the level of acceptability of the system is adapted from ISO 25010.

The following procedure conducted to evaluate the acceptability of the web-based payroll system:

1. The respondents are composed of ten (6) employees and one (1) human resource personnel from Al Dawah Producers Cooperative, and seventeen (13) information technology professionals.
2. The researchers discussed the functionalities and operating procedures of the system with the respondents, and each selected individual is allowed to test the system and further evaluate its features.
3. Each respondent was given a survey form to rate the system based on the Likert scale where 4 is highest and 1 is the lowest.
4. The accomplished evaluation sheet is processed and the data that the researchers gathered and tabulated to determine the mean ratings.
5. The adjectival interpretation for the mean ratings is interpreted using the Likert Scale shown in Table 3.

Table 3.

Range of Weighted Mean Values and its Interpretation

Scale	Range	Adjectival Interpretation
4	3.26 – 4.0	Highly Acceptable
3	2.51 – 3.25	Very Acceptable
2	1.76 – 2.50	Acceptable
1	1.00 – 1.75	Not Acceptable

Chapter 4

RESULTS AND DISCUSSION

This chapter contains the output of the research study that includes the Project Description and Structure, Project Capabilities and Limitations, and the Project Evaluation.

Project Description

The research project “Al Dawah Payroll System” was designed as an online payroll web application that automates payroll activities of the agricultural cooperative. The system was developed in Visual Studio Code using programming languages such as PHP and JavaScript as the web development framework.

Project Structure

The following are the screenshots of APS’s project structure:

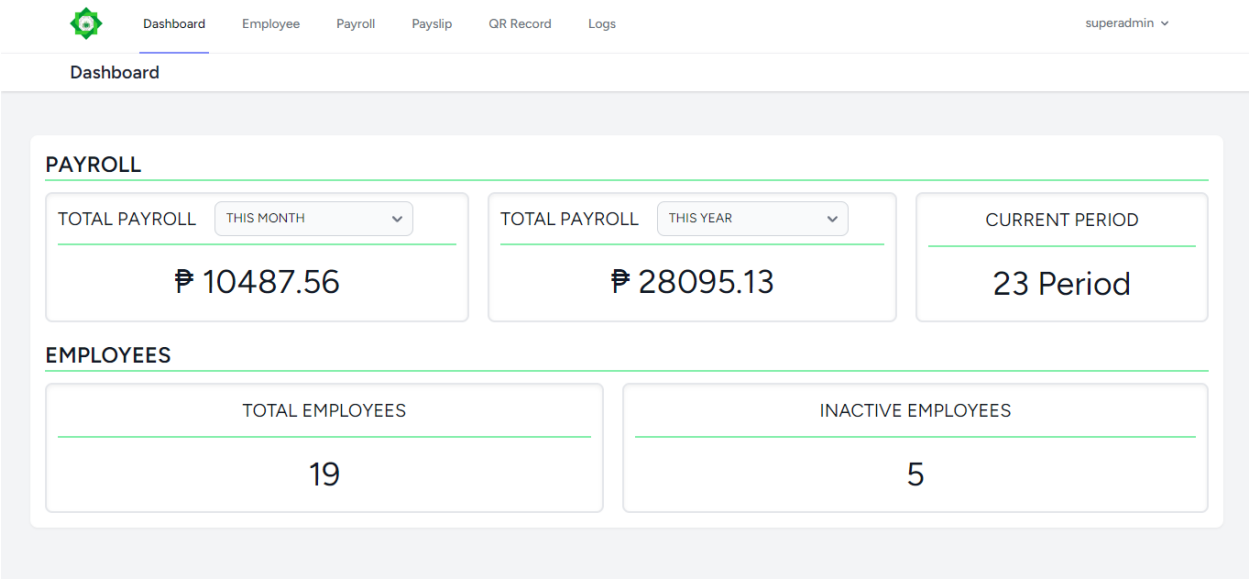


Figure 7. Homepage - Admin Page

Figure 7 shows the landing page of the web payroll system for administrators, from this page data can be seen such as total number of employees; registered employees are divided into three categories which are new registered employees, current active employees and inactive employees. Another feature of this page is where administrators can view an attendance sheet that exemplifies employees time in and time out. It also includes employee ID, job classification, date of time in and time out along with status which notify administrators if the employee is still active in the attendance system. Another feature of this page is that the administrator can search for a certain employee to check, and the administrator can also filter the category to sort employees.

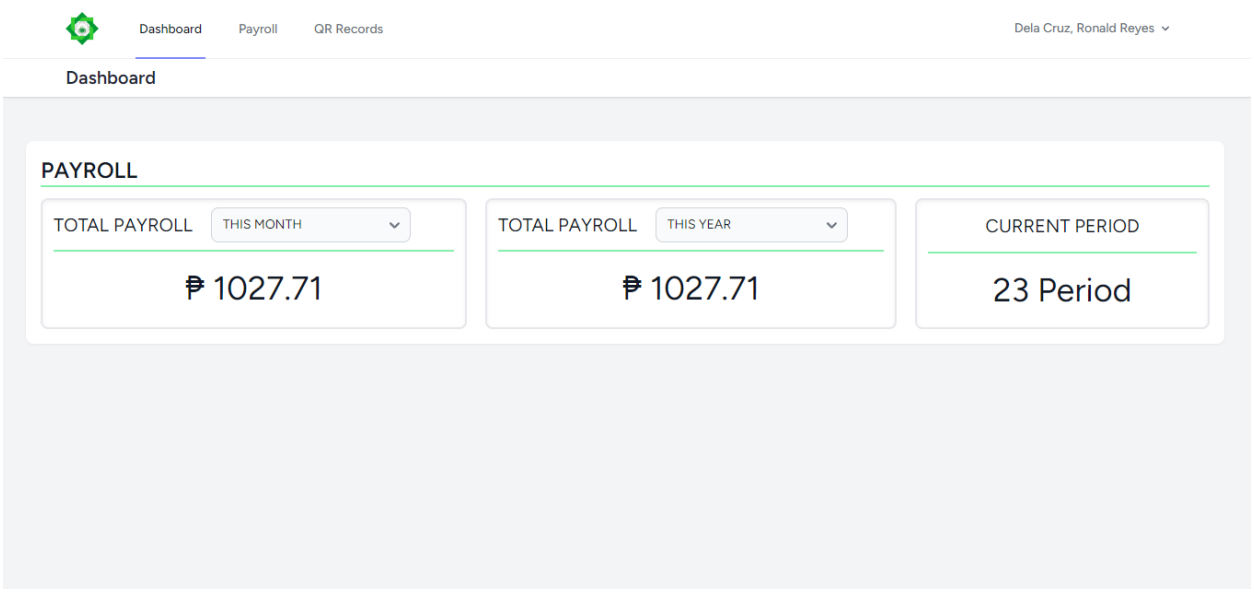


Figure 8. Homepage - Employee Page

Figure 8 shows the landing page of user employees. The homepage consists of four parts; total earnings, total deductions, net salary and attendance sheet which surfaces attendance date and time history.

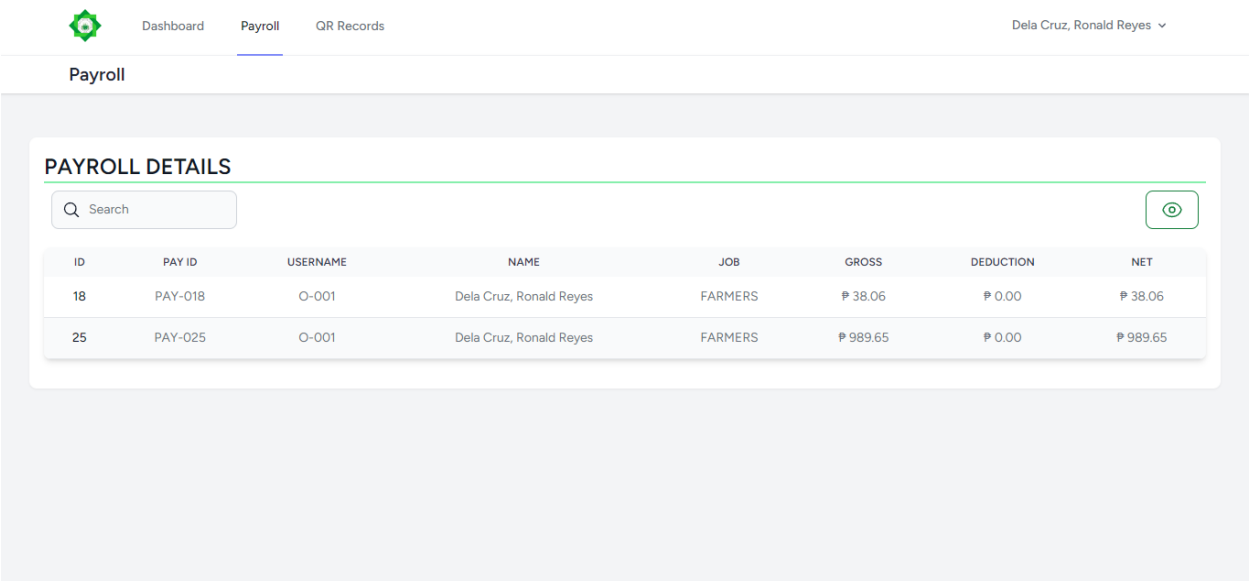


Figure 9. Employee – Payroll Details Page

Figure 9 shows a section of the website that contains user employee details that are integrated into the system such as user ID, username, employee name, job title, salary gross, deduction, and total net salary. Users can search for specific payroll dates by their payroll history.

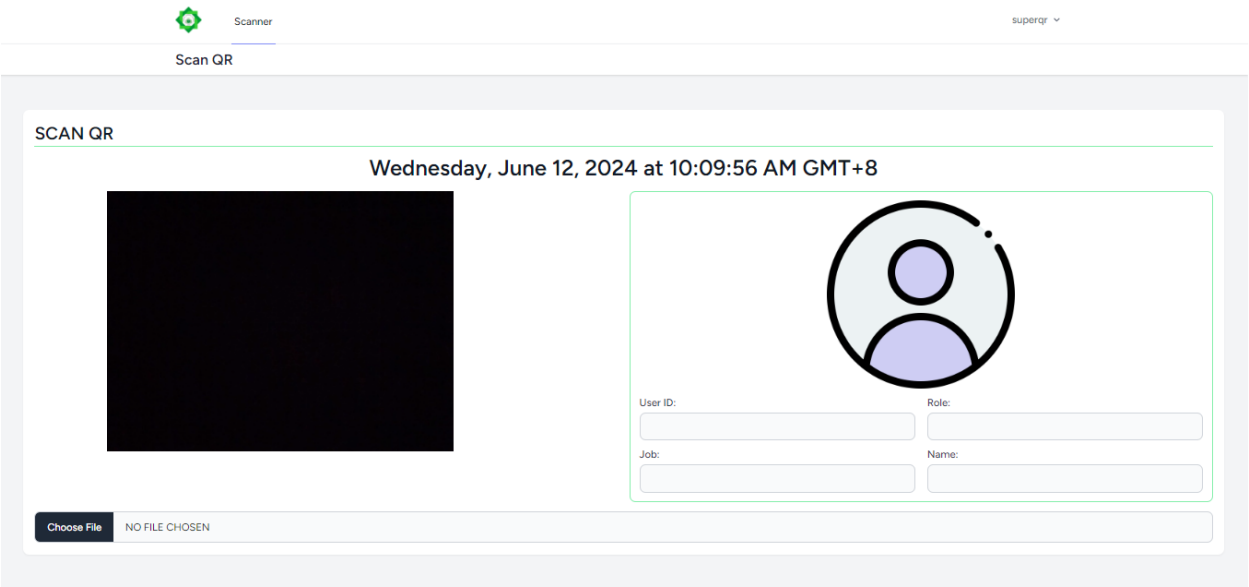


Figure 10. QR Log Page

Figure 10 shows the page where users with webcams shall scan its given QR code as the system authenticates the code it shall record users' attendance within its user ID, current date, time and location.

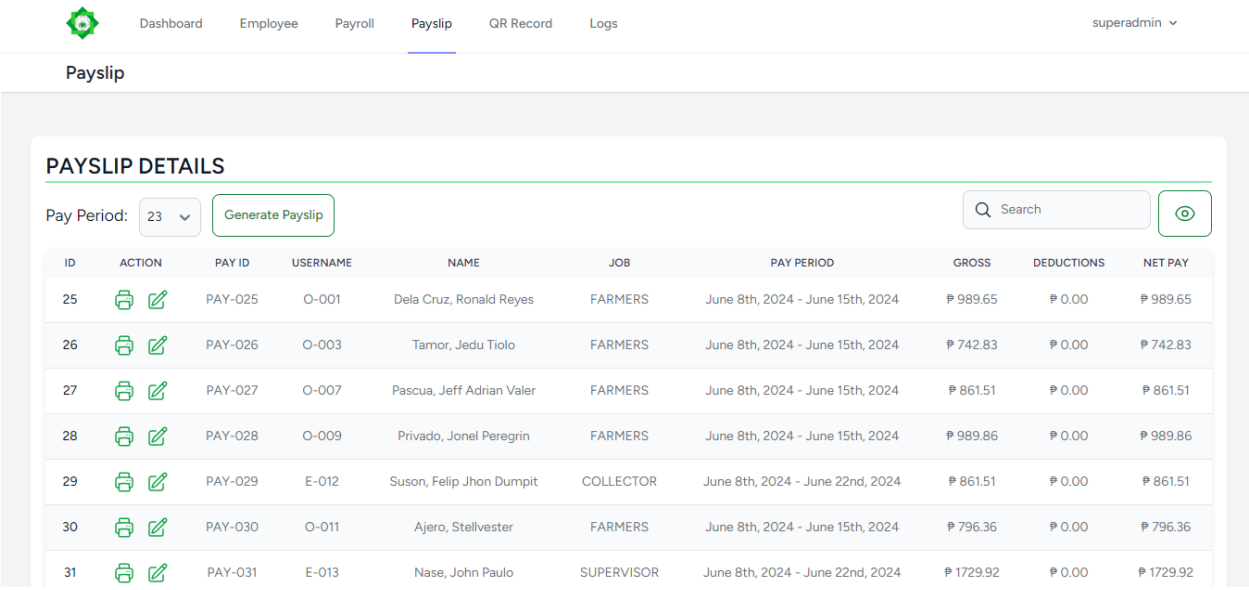


Figure 11. Payroll Payslip Page

Figure 11 shows the main function of the payroll website, it displays all employee payroll data which includes Employee ID, name, job classification, rate per day, number of days, hourly late, overtime pay, government loans such as PhilHealth and SSS and the total salary. It also includes a pen icon where once clicked by administrator, data inside the sheet can be changed and be edited.

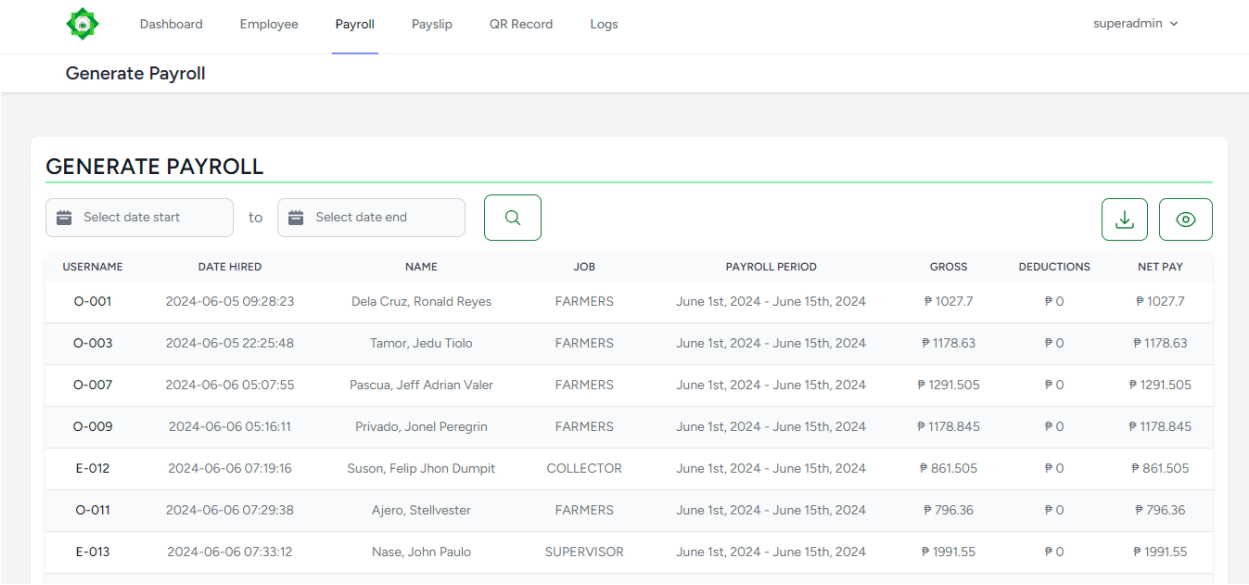


Figure 12. Generate Payroll Page

Figure 12 shows a function of the payroll website, where it displays a breakdown of all employee payroll data for any period. This page has the availability to search and generate for a specific date and time of any period.

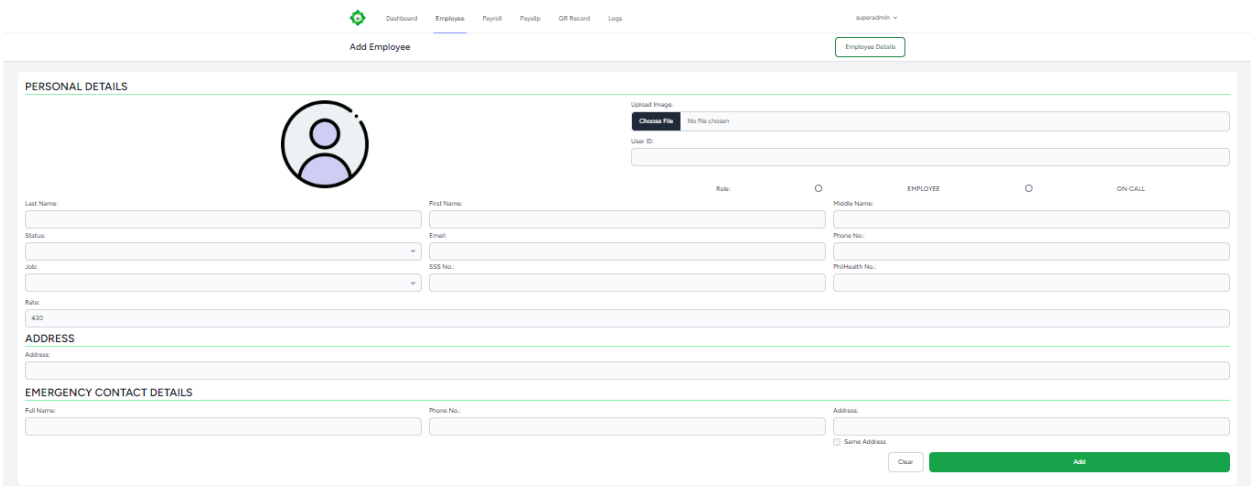


Figure 13. Add Employee Page

Figure 13 displays a feature of the website where it centralized the action when an administrator shall encode employee's personal information such as its name, status, phone number, profile photo etc.

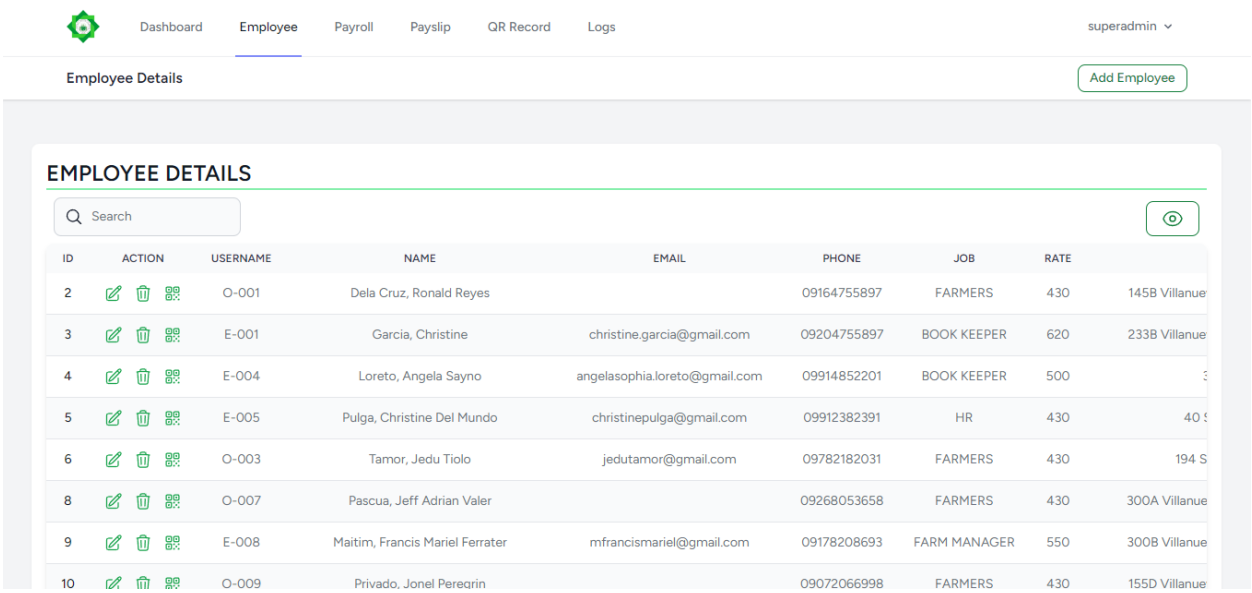


Figure 14. Employee Detail Page

Figure 14 shows employee details where it encompasses the personal details of regular employees which are once added to the system can be found in this page showing

employees are registered into the database. This page is also where the QR ID is located. The codes are unique only to employees and can be downloaded locally.

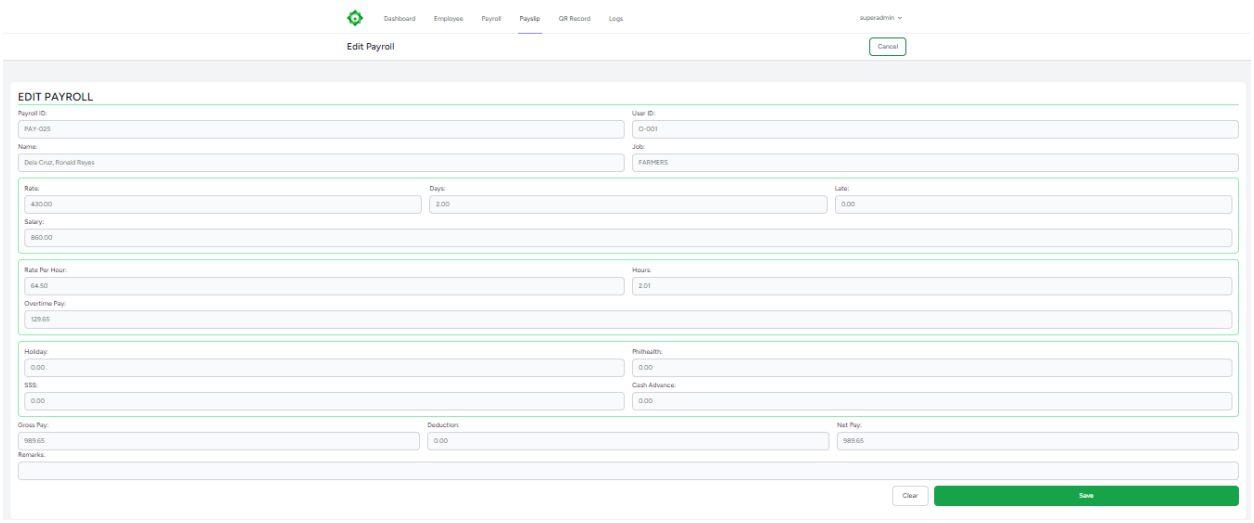


Figure 15. Edit Payroll Detail Page

Figure 15 shows a section of the payroll system where it contains a feature where administrators can edit or change specific information regarding employee data. All details can be changed by the admin including Payroll ID, User ID, Employee full name, Job title, employee rate, number of days of work and late etc.

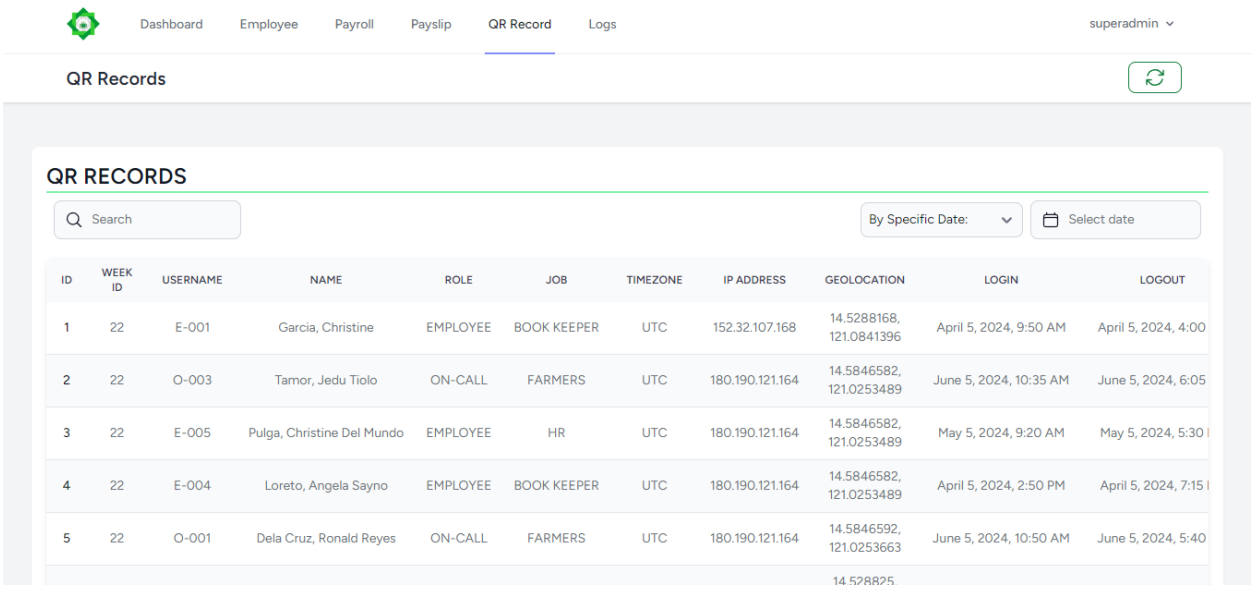


Figure 16. QR record history page

Figure 16 shows a feature of the system where it displays the history of QR attendance records of employees. This section contains user ID, name of employee, job title date, time and location coordinates of where the QR was scanned.

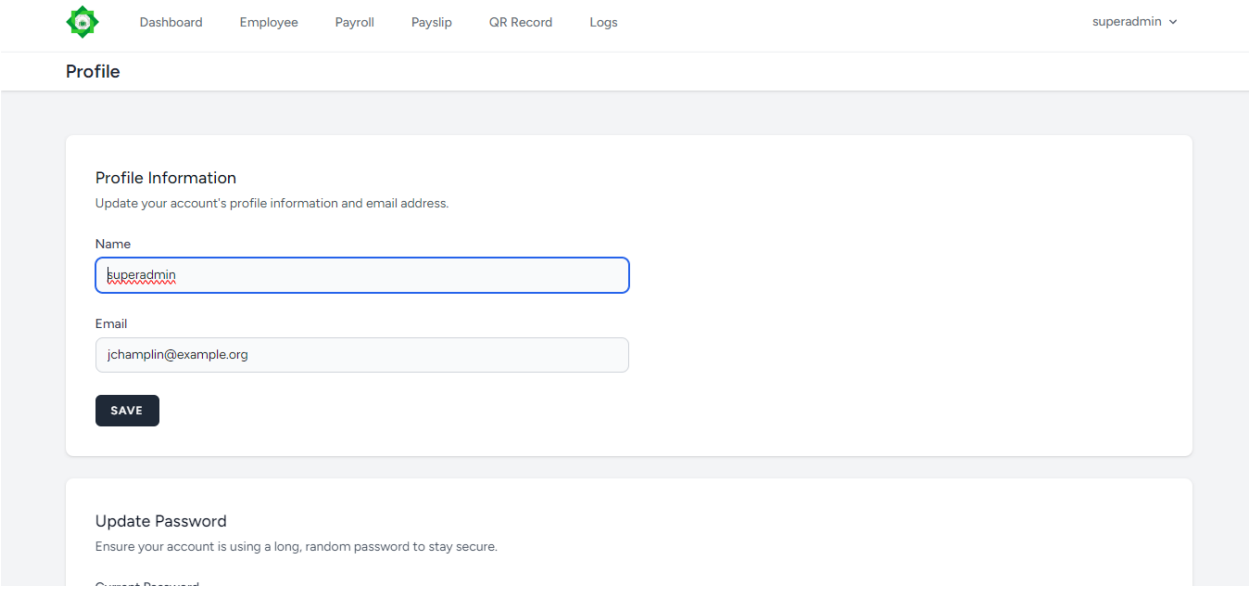


Figure 17. Profile Page

Figure 17 shows a feature where the current user can change their name, email and password.

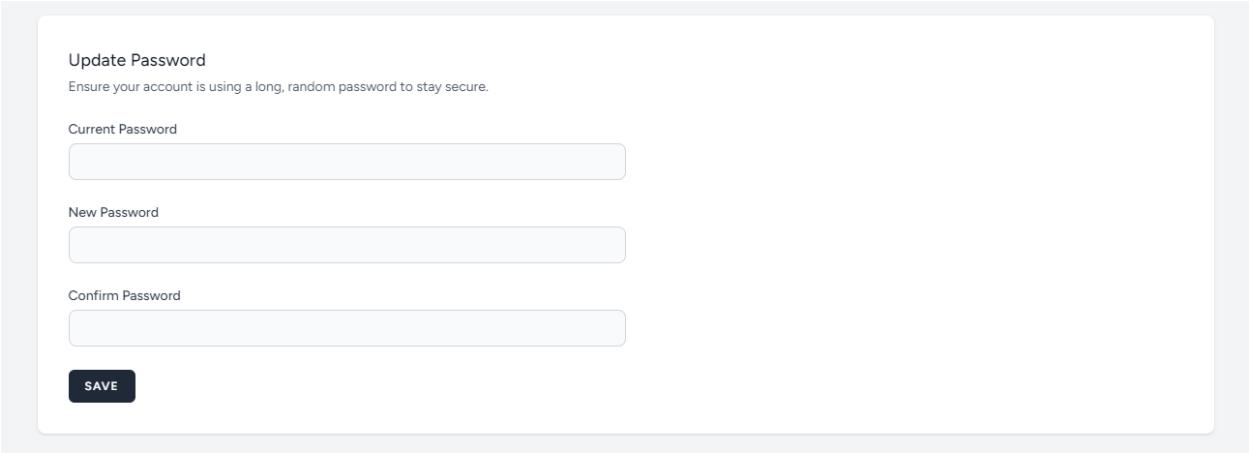


Figure 18. Change Password Page

Figure 18 shows the user set up feature where each user has the option to change his/ her password. To authenticate its new password, the user must present its old password first before registering a new password for its account.

PAYROLL

Salaries and Wages For Period June 1st, 2024 - June 15th, 2024

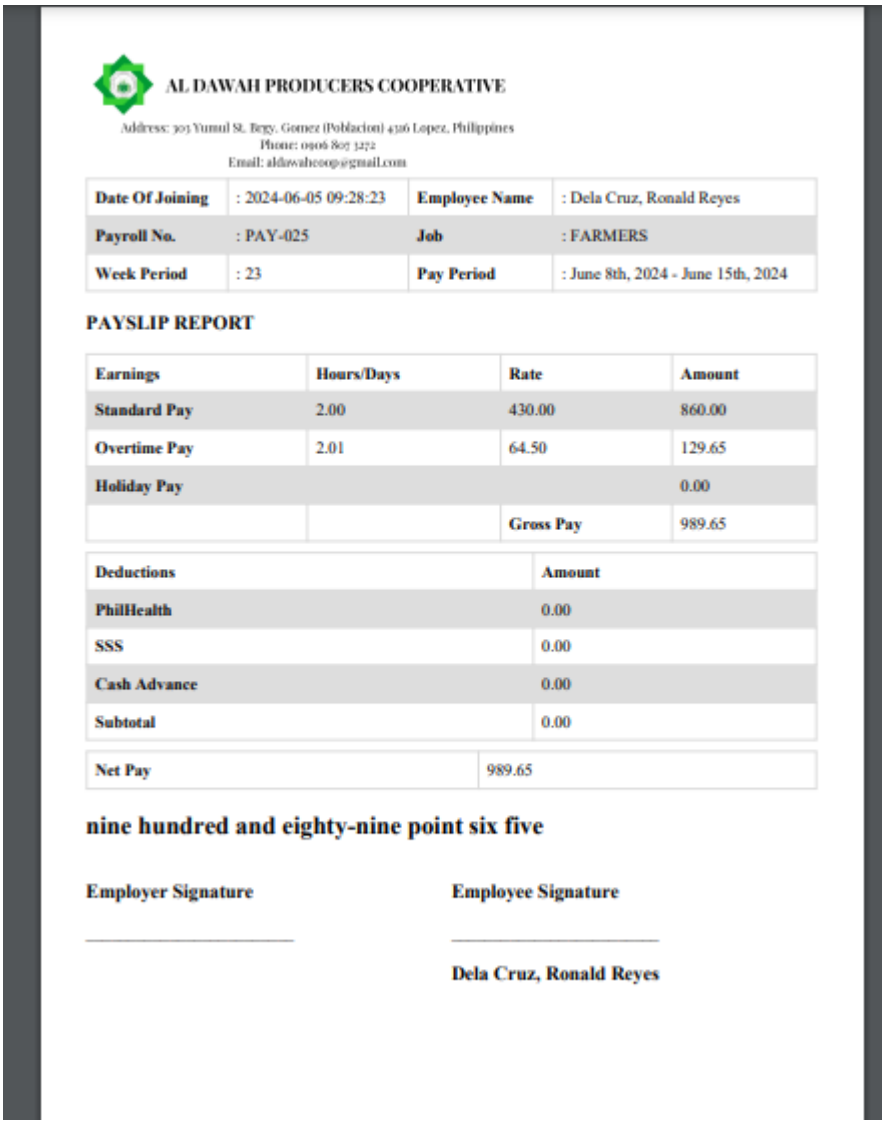
		Regular days				Overtime											
Name	Designation	Rate/Day	No. Of Days	Late	Salary	Rate/Hr	No. Of Hours	Overtime Pay	Holiday	Allowances	PhilHealth	SSS	Cash Advance	Gross Pay	Deductions	Net Pay	Signature
Dela Cruz, Ronald Reyes	FARMERS	430.00	2.00	357.00	860.00	64.50	2.60	167.70	0.00	0.00	0.00	0.00	0.00	1,027.70	0.00	1,027.70	
Tamor, Jedu Tiolo	FARMERS	430.00	2.00	341.00	860.00	64.50	4.34	318.63	0.00	0.00	0.00	0.00	0.00	1,178.63	0.00	1,178.63	
Pascua, Jeff Adrian Valer	FARMERS	430.00	2.00	436.00	860.00	64.50	6.69	431.51	0.00	0.00	0.00	0.00	0.00	1,291.51	0.00	1,291.51	
Privado, Jonel Peregrin	FARMERS	430.00	1.00	315.00	430.00	64.50	11.61	748.85	0.00	0.00	0.00	0.00	0.00	1,178.85	0.00	1,178.85	
Suson, Felip Jhon Dumpit	COLLECTOR	430.00	1.00	312.00	430.00	64.50	6.69	431.51	0.00	0.00	0.00	0.00	0.00	861.51	0.00	861.51	
Ajero, Stellvester	FARMERS	430.00	1.00	376.00	430.00	64.50	5.68	366.36	0.00	0.00	0.00	0.00	0.00	796.36	0.00	796.36	
Nase, John Paulo	SUPERVISOR	510.00	2.00	0.00	1,020.00	76.50	12.70	971.55	0.00	0.00	0.00	0.00	0.00	1,991.55	0.00	1,991.55	
Abarquez, Jalilah Rapsing	SUPERVISOR	1,000.00	0.00	106.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL					4,890.00	613.50	50.91	3,436.10	-	-	-	-	-	8,326.10	0.00	8326.10	

PREPARED BY: _____

CHECKED BY: _____

Figure 19. Payroll Report

Figure 19 shows an example of an existing payroll report which displays the breakdown of salary, deductions, and employee information. The system allows administrators to generate a specific number of reports whether in categories or periods.



AL DAWAH PRODUCERS COOPERATIVE

Address: 303 Yumul St. Brgy. Gomez (Poblacion) 4316 Lopez, Philippines
Phone: 0906 805 3372
Email: aldawahcoop@gmail.com

Date Of Joining	: 2024-06-05 09:28:23	**Employee Name**	: Dela Cruz, Ronald Reyes
Payroll No.	: PAY-025	**Job**	: FARMERS
Week Period	: 23	**Pay Period**	: June 8th, 2024 - June 15th, 2024

PAYSLIP REPORT

Earnings	Hours/Days	Rate	Amount
Standard Pay	2.00	430.00	860.00
Overtime Pay	2.01	64.50	129.65
Holiday Pay			0.00
		Gross Pay	989.65

Deductions	Amount
PhilHealth	0.00
SSS	0.00
Cash Advance	0.00
Subtotal	0.00

Net Pay	989.65

nine hundred and eighty-nine point six five

Employer Signature **Employee Signature**

Dela Cruz, Ronald Reyes

Figure 20. Payslip Report

Figure 20 shows an example of an existing payslip which displays the breakdown of salary, deductions and personal information of an individual employee.

Project Capabilities and Limitations

The following are the capabilities of the developed web payroll system:

1. Generated attendance data consists of user ID, date, time, and location using QR code.
2. The system can generate a payroll report where it shows the breakdown of salary deductions and overtime pay inclusions.
3. For payroll calculation, the system can generate salaries based on daily work hours and attendance activity.
4. The system can generate a different salary computation for on-call/part-timers and regular employees.
5. For user employees, the system can display a payroll dashboard that includes personal payroll data and hiring date.
6. The system can generate existing payroll records and employees' attendance records.
7. Generate different login credentials for employees and administrators.
8. Administrators can register, add and edit employee information.
9. Administrators have attendance monitoring features with QR code scanning for time-in and time-out.

However the system has limitations, to application only within the Al Dawah Producers Cooperative, specifically the Brgy. Burgos Lopez, Quezon branch. It does not cover issues related to missing loan payments or handle tax-related disputes. Additionally, the system cannot generate accounting reports needed by the general manager, nor does it track and manage employee performance and feedback. It also does not manage the termination of employee contracts or include functionalities for selecting benefit packages and managing beneficiary enrollment.

Test Results

Table 4.

Test On	Steps Taken	Observed Results
User Login	1. Login to the system as an administrator	The system had identified the credentials making it a successful login.
Add Employee	1. Click the “Add Employee” button. 2. Enter the employees’ details. 3. Click the “Add” button to add data to the database. 4. Verify the employee in the “Employee Details” page.	The system has successfully added the employees.
Generate Payroll	1. Click the “Payroll” tab. 2. Enter the date range you want to generate. 3. Click the “Search” button. 4. Click the “Export” button to get the Excel file.	The system has successfully generated payroll from one date to another.
Generate Payslip	1. Click the “Payslip” tab. 2. Select the week period you want to generate. 3. Print or edit the payslip details.	The system has successfully generated the payslip according to the week period selected.

QR Attendance	1. Login the credentials needed for accessing the QR module. 2. Allow the browser to have access to the device camera. 3. Scan the QR of the user.	The system has successfully recorded the attendance of the user.
Middleware	1. Login as an employee. 2. Change the URL to a URL only administrators can access.	The system has successfully the blocked the user from accessing by redirecting it to its own homepage.
Administrator Logs	1. Login as administrator 2. Edit an employee 3. Save the changes	The system has successfully recorded the admin editing the employee. It also displays the data edited, who edited the data, and what time it has been edited.
Form Validity	1. Login as administrator 2. Create an employee 3. Do not enter a required field.	The system has successfully alerted the admin that a required field is needed for adding data.
Performance Testing	Try opening pages and tab simultaneously.	The system can open pages and tabs without big delays.

Table 4. shown, the system was able to pass the tests that are needed to meet the expected results.

Project Evaluation

The system was evaluated by 20 participants, 13 are IT professionals, whereas 6 employees and 1 Human resource personnel of Al Dawah Producers Cooperative. The respondents evaluated based on ISO 25010 in terms of Functional Suitability and Security. The overall total obtained was 3.08 which falls within the range of 2.51 – 3.25 and as its descriptive rating of "Very Acceptable".

Table 5.

Functional Suitability Evaluation Result

Criteria	Weighted mean	Adjectival Interpretation
Functional Correctness	3.4	Highly Acceptable
Functional Completeness	3.15	Very Acceptable
Functional Appropriateness	3.1	Very Acceptable

The system's functional suitability evaluation result is shown in Table 5 of the respondents rated the system with a total score of 3.22 or "Very Acceptable".

Table 6.

Security Testing Evaluation Result

Criteria	Weighted mean	Adjectival Interpretation
Confidentiality	3.15	Very Acceptable
Integrity	3.0	Very Acceptable
Accountability	3.0	Very Acceptable
Non-repudiation	3.0	Very Acceptable
Authenticity	3.0	Very Acceptable
Resistance	2.95	Very Acceptable

The system's security testing evaluation result shows in Table 6 of the respondents rated the system with a total score of 3.02 or "Very Acceptable".

Chapter 5

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

This chapter contains the summary of findings, conclusions, and recommendations provided to improve the system.

Summary of Findings

The developed system was able to:(1) automated a payroll processing system through a working website, (2) manage payroll information of company employees and on-call workers; (3) effectively created an QR enabled attendance monitoring; (4) effectively manage salary computations.

The system was evaluated by 20 respondents to determine the acceptability of the system. Those 20 respondents were composed of 13 IT professionals, whereas 6 employees and 1 Human resource personnel of Al Dawah Producers Cooperative. The overall total obtained was 3.08 which falls within the descriptive rating of “Very Acceptable”.

Conclusion

The following conclusion were drawn from this study:

1. The web-based payroll management system for Al Dawah Producers Cooperative was successfully designed with the following features:

    - Generate payroll reports and pay slips.
    - Display attendance report.
    - QR code-enabled attendance system.
    - Employees file management system.
    - Enable backup files for the payroll reports.

2. The system was created using Visual Studio, Laravel, PHP, HTML, CSS, JavaScript, and MySQL.

3. The system passed all the tests in terms of functional suitability and security.

4. The system was evaluated using ISO 25010 quality standards and was rated as “Very Acceptable.”

Recommendation

The following are the researchers' recommendation for the study:

1. Use an API to determine the exact location of an employee when logging in their attendance.

2. Purchase a scanner for the process of recording attendance through scanning.

3. Add more government deduction to the payroll calculation.

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- Proficient in basic computer troubleshooting and configurations

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EDRIAN E. FLORENDO

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Address: 1319 St. Cristo ext. St. Tondo, Manila

SKILLS

- Basic Programming
- Microsoft Office
- Basic Troubleshooting

LANGUAGES

Filipino - Native
English - Second Language

EDUCATION

Emilio Aguinaldo College (Manila) Technical-Vocational-Livelihood
2018 - 2020
Technological University of the Philippines
Bachelor of Science Major in Information System
2020 – 2024

WORK EXPERIENCE

Work Immersion | 2020 - 2020 (Incomplete)

Project is to create our own 2D game using a website created by Microsoft. Not finished because of COVID-19.

PROJECTS

- Lamborghini Cars using HTML, CSS, Bootstrap. Payroll System using HTML, PHP, CSS, Bootstrap, MYSQL. (Currently working on)
- Restaurant Guides in Boracay using HTML, CSS, Bootstrap.

APPENDIX A

SAMPLE ANSWERED EVALUATION SHEET AND RESULT SHEET

Responses cannot be edited

DEVELOPMENT OF PAYROLL MANAGEMENT SYSTEM IN ALDAWAH PRODUCERS COOPERATIVE

Good day!

We are 4th year Bachelor of Science in Information System students at Technological University of the Philippines - Manila. The purpose of this evaluation form is to assess the developed web-based payroll management system of Aldawah Producers Cooperative.

Your responses are anonymous and confidential.

Your feedback is highly valuable to us, and we appreciate your time and effort in sharing it. Thank you and have a nice day.

The respondent's email (trishaamv.sayno@gmail.com) was recorded on submission of this form.

* Indicates required question

Name: *

Trisha Ann Sayno

Type of Respondent: *

- (●) IT Professional
- ( ) Aldawah Employee
- ( ) Human Resource Personnel

Use the rating scale below to evaluate the web-based payroll management system.

4 - Highly Acceptable
3 - Very Acceptable
2 - Acceptable
1 - Not Acceptable

FUNCTIONAL SUITABILITY

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

Functional Correctness *

The system provides accurate results when used by intended users.

- (●) 4
- ( ) 3
- ( ) 2
- ( ) 1

Functional Completeness *

The system covers all the specified tasks and intended users' objectives.

- ( ) 4
- (●) 3
- ( ) 2
- ( ) 1

Functional Appropriateness *

The system functions facilitate the accomplishment of specified tasks and objectives.

- ○ 4
- ◉ 3
- ○ 2
- ○ 1

SECURITY

Degree to which a product or system defends against attack patterns by malicious actos and protects information and data so that persons or other products or systems have the degree of data access appropriate to their types and levels of authorization.

Confidentiality *

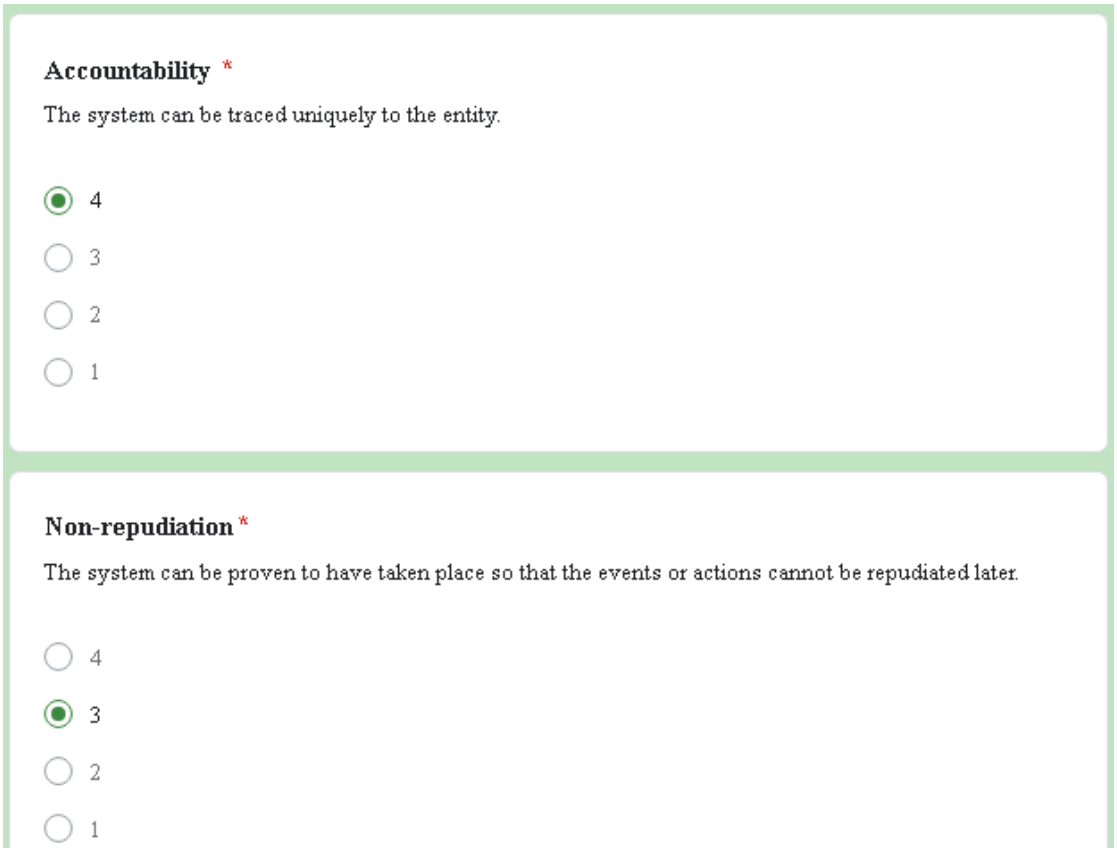
The system functions ensures that data are accessible only to those authorized to have access.

- ○ 4
- ◉ 3
- ○ 2
- ○ 1

Integrity *

The system ensures that the state of its system and data are protected from unauthorized modification or deletion either by malicious action or computer error.

- ○ 4
- ◉ 3
- ○ 2
- ○ 1



Accountability *

The system can be traced uniquely to the entity.

- (●) 4
- ( ) 3
- ( ) 2
- ( ) 1

Non-repudiation *

The system can be proven to have taken place so that the events or actions cannot be repudiated later.

- ( ) 4
- (●) 3
- ( ) 2
- ( ) 1

Authenticity *

The system can be proved to be the one claimed.

- ○ 4
- ◉ 3
- ○ 2
- ○ 1

Resistence *

The system sustains operations while under attack from a malicious actor.

- ○ 4
- ◉ 3
- ○ 2
- ○ 1

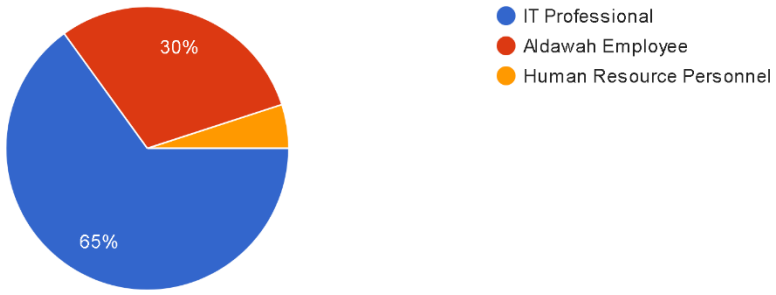
Feedback and Suggestions: *

Overall process/flow at UI ng system, okay na. May mga ilan lang na nagkakaerror sa system. Pero okay na. For my suggestions, sa mga napapansin kong minor error, as a developer kailangan nating iimagine na tayo yung user para makita natin kung ano yung mali sa system and kung ano yung mas makakapagpadali ng flow ng system.

Submitted 6/10/24, 11:03 PM

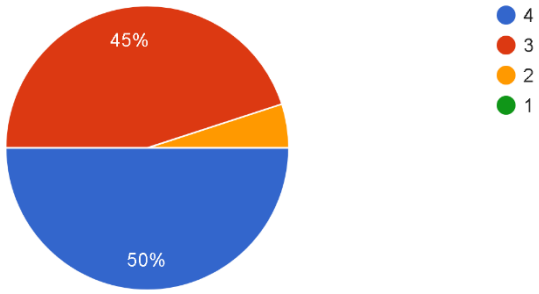
Type of Respondent:

20 responses



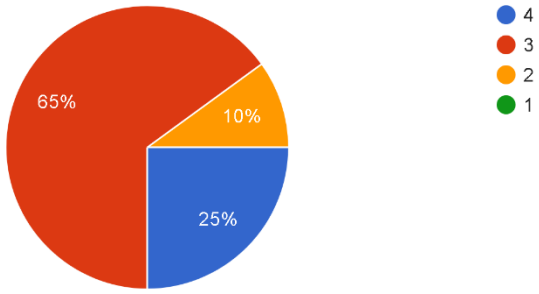
Functional Correctness

20 responses



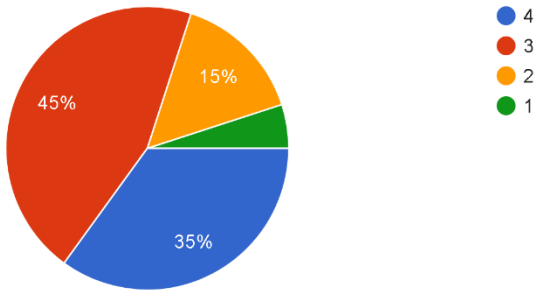
Functional Completeness

20 responses



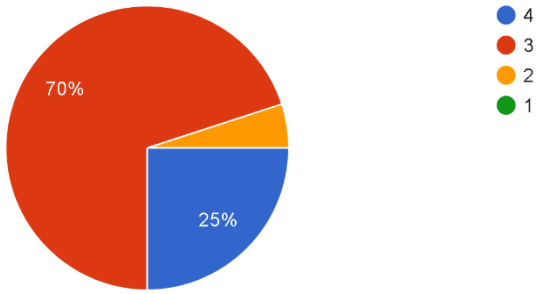
Functional Appropriateness

20 responses



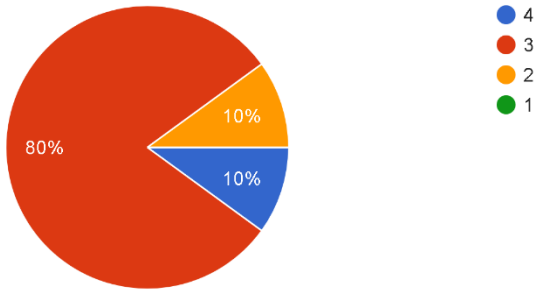
Confidentiality

20 responses



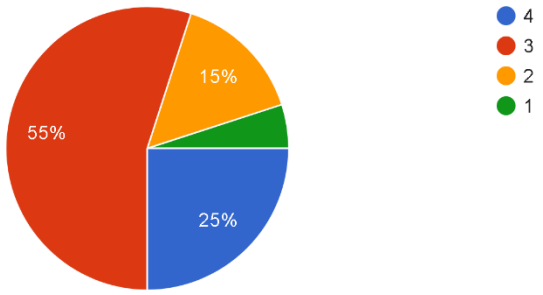
Integrity

20 responses



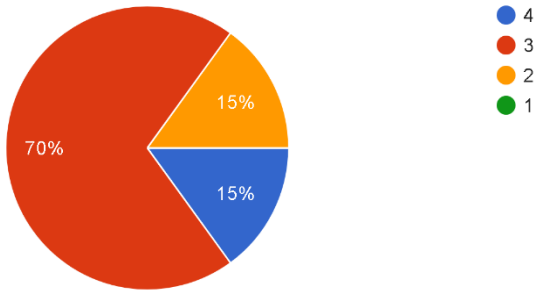
Accountability

20 responses



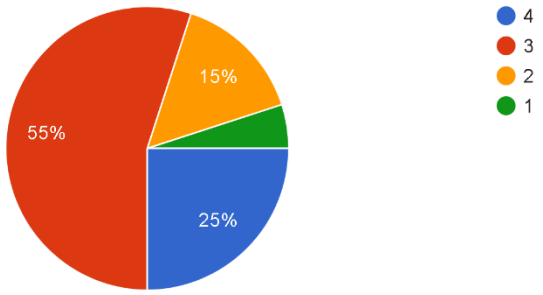
Non-repudiation

20 responses



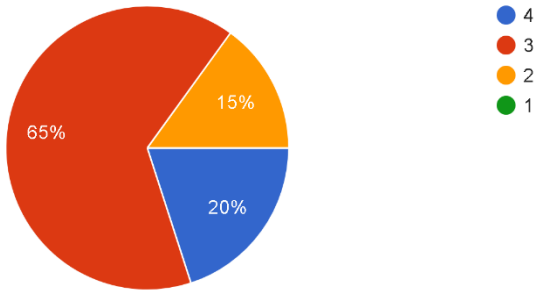
Authenticity

20 responses



Resistence

20 responses



Feedback and Suggestions:

20 responses

the system is great

Improve the system more

Overall process/flow at UI ng system, okay na. May mga ilan lang na nagkakaerror sa system. Pero okay na. For my suggestions, sa mga napapansin kong minor error, as a developer kailangan nating iimagine na tayo yung user para makita natin kung ano yung mali sa system and kung ano yung mas makakapagpadali ng flow ng system.

Use API in system

The system's compliance features have been particularly helpful in ensuring that we meet all tax regulations and stay up-to-date with changes in legislation.

The user interface is intuitive and easy to navigate, which has made it simple for our HR team to process payroll efficiently

Good payroll system

Feedback and Suggestions:

20 responses

Improve the system

The system needs some improvement, but overall basic functions are alright.

Maganda naman system nyo, pwede na

The system is still lacking, functions such as filing of leaves, scheduling and more can be added. These are still helpful and beneficial when creating a system for payroll

Your system is okay but it still lacks some necessary functionality of an automated payroll system

Maganda system ninyo ipagpatuloy nyo

please improved in other aspect

Maganda at maayos

may room pa for improvement, pero maganda na siya for payroll

APPENDIX B

Respondents	Functional Suitability			Security				
	Correctness	Completeness	Appropriateness	Confidentiality	Integrity	Accountability	Non-repudiation	Authenticity	Resistence
1	4	3	4	3	4	3	4	3	4
2	4	3	4	3	4	3	4	3	4
3	4	2	4	3	3	3	4	4	4
4	3	3	3	3	3	3	3	3	4
5	3	3	3	3	3	4	3	3	2
6	4	2	4	3	3	4	3	4	2
7	3	3	3	3	3	3	3	4	2
8	4	3	3	3	3	4	3	4	3
9	3	3	3	4	3	4	3	3	3
10	3	3	3	4	2	4	3	4	3
11	3	4	4	3	3	2	2	3	3
12	3	3	4	4	3	2	3	3	3
13	4	3	4	4	3	2	2	2	3
14	3	4	3	4	2	1	3	3	3
15	4	4	3	3	3	3	2	1	3
16	4	3	2	3	3	3	3	2	3
17	3	4	1	1	3	3	3	3	3
18	4	4	2	3	3	3	3	2	3
19	2	3	2	3	3	3	3	3	3
20	4	3	3	3	3	3	3	3	3
Average:	3.4	3.15	3.1	3.15	3	3	3	3	2.95

APPENDIX C

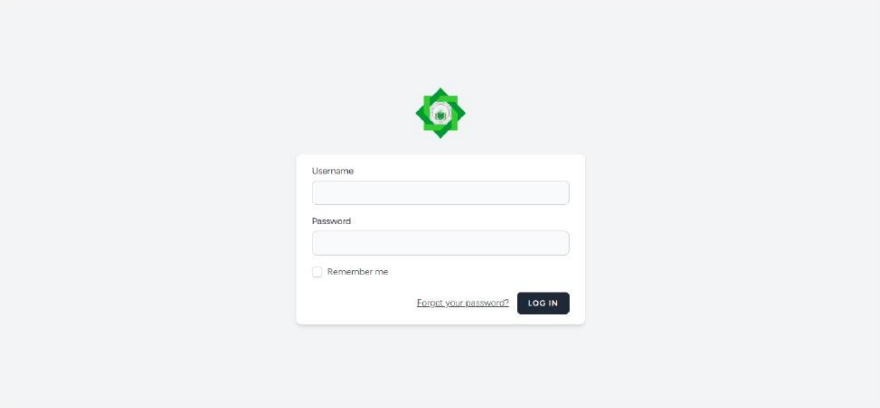
DEVELOPMENT OF PAYROLL MANAGEMENT SYSTEM

IN AL DAWAH PRODUCERS' COOPERATIVE

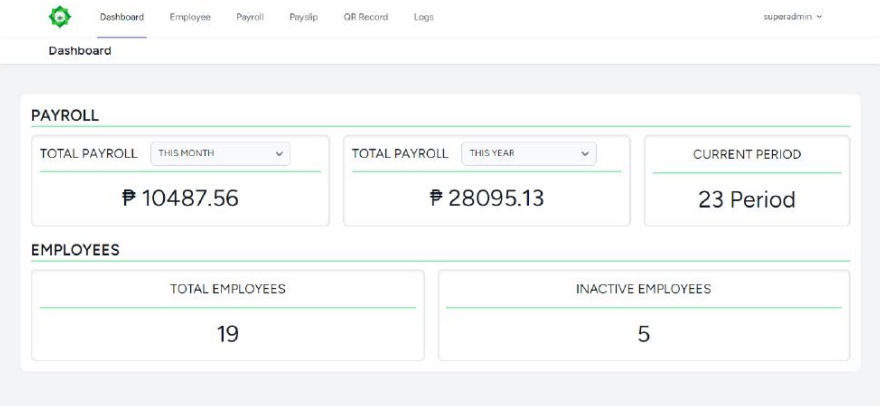
Admin Manual

As of June 13, 2024

1. **Login Page**
    - Open your browser
    - Go to this website, https://aldawah.online/
    - Automatically redirected at the login page

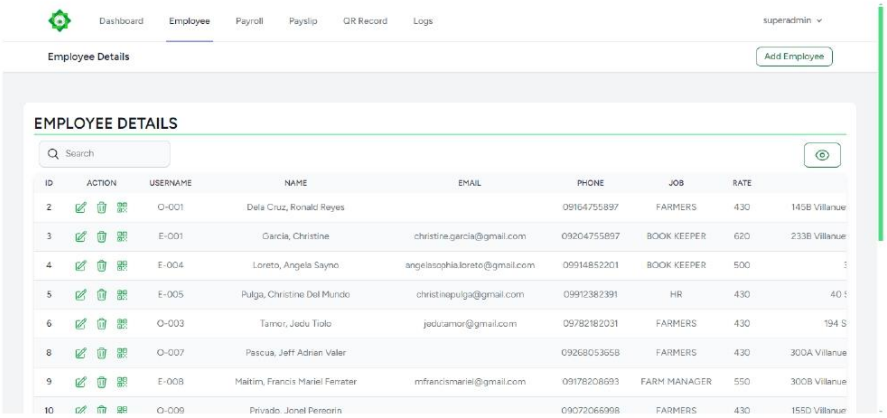


- Login in with administrator credentials
- Once successfully login, admin homepage will open



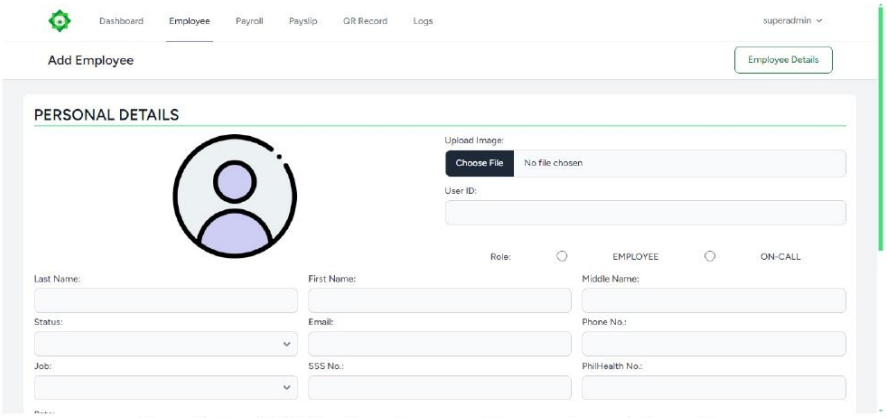
- On the top part of the page, you will see 5 tabs to navigate pages. Each page contains the respective functions and records of the information of the employees.

2. **Employee**
    - Click the "Employee" tab to view, add, and edit employee information.



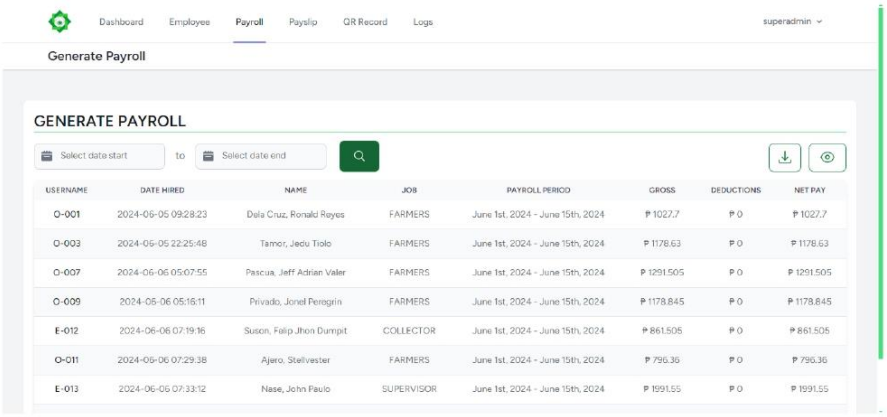
    - This is the page you will see when you click the "Employee" tab.
    - The admin can edit, delete, and download the QR of the employee in the action column of the table.
    - The admin can also search for employee information using the search bar.
    - The admin can view hidden information by clicking the eye icon.

3. **Add Employee**
    - Click the "Add Employee" button at the top right corner of the page.



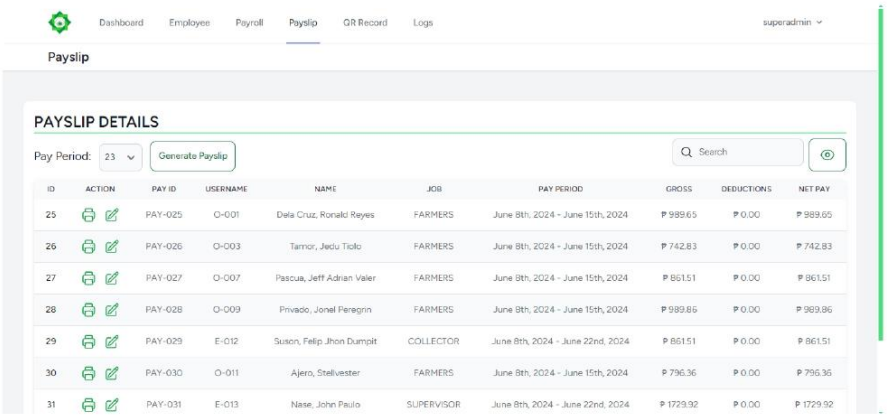
    - The admin will fill the form to record the employee information.
    - Click the "Add" button at the bottom of the page to add the data.

4. **Generate Payroll**
    - Click on the “Payroll” tab to generate payrolls.



    - Pick the dates needed to generate the payroll in the date range picker.
    - Click the search icon to generate the payroll.
    - Once generated, the export and eye icon will appear.
    - Click the export button to export the payroll into an excel file.
    - The eye icon will make hidden information visible when clicked.

5. **Generate Payslip**
    - Click the “Payslip” tab.

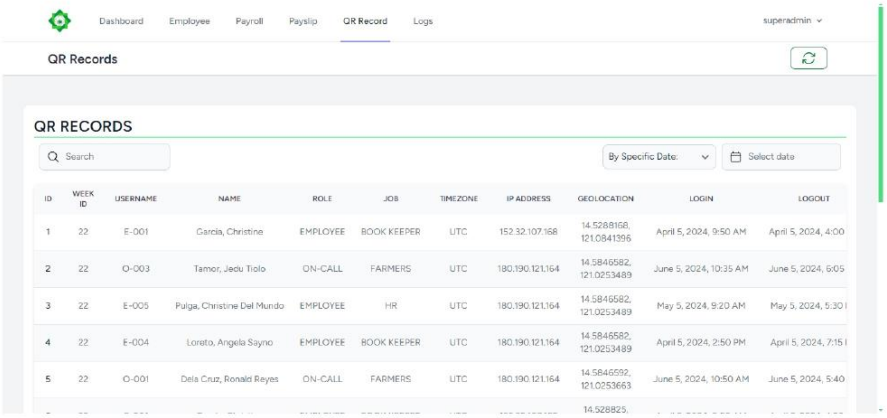


    - Select the pay period that you want to generate payslips for.
    - Click “Generate Payslip” button to generate.

- Once generated, the admin can print and edit the payslip data.
- The admin can also search and view the hidden information using the functions in the top right corner of the page.

6. QR Record

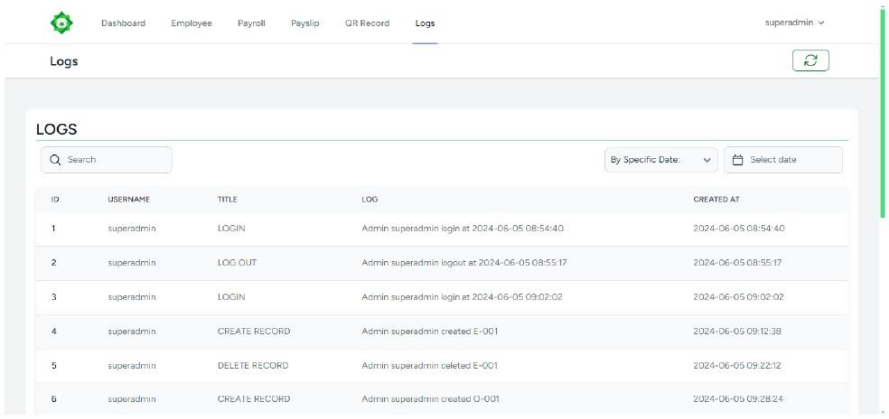
- Click the “QR Record" button.



- Once clicked, it will display all the data that has been recorded by the scanner.
- The admin can also search for data using the search bar.
- The admin can select the date to display the data for that specific date by using the date picker.
- The reload symbol at the top right corner functions as a reloader for the table to display all data.

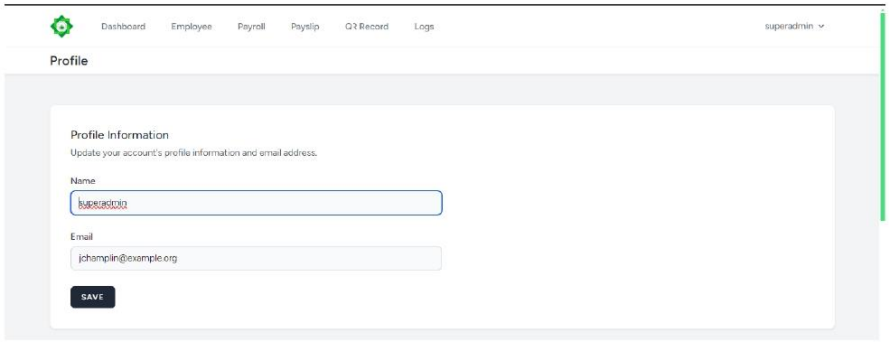
7. Logs

- Click the “Logs” button.
- It will display all the logs of the current admin.
- The admin can search for data and select a date to display data on that specific date by using the date picker.
- The reload symbol at the top right functions as reload to display all data.

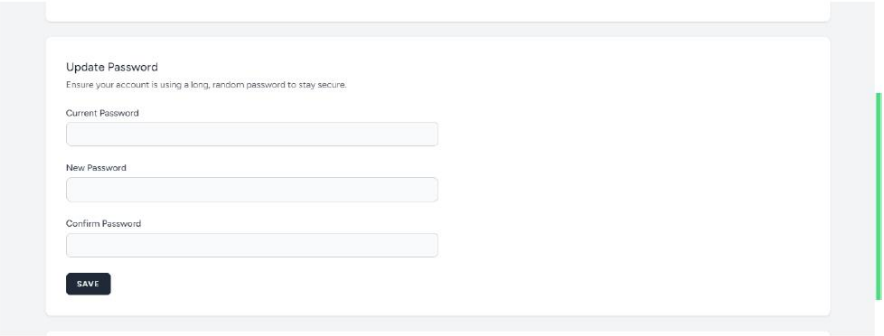


8. Profile

- Click the username at the top right.
- Click "Profile" in the drop-down menu.



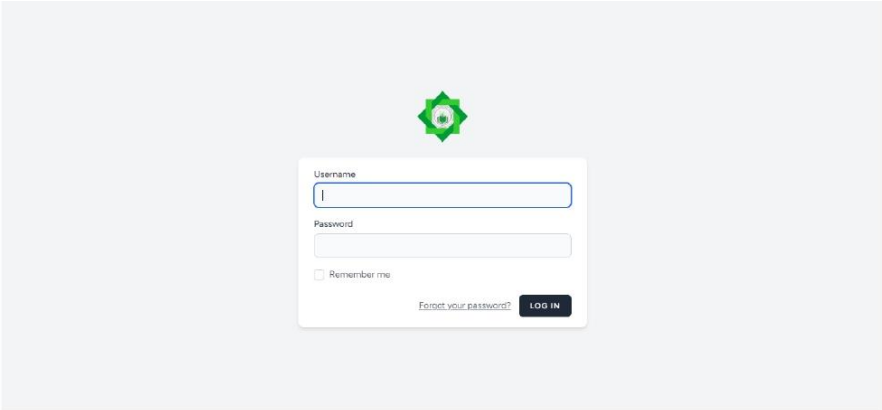
- The admin can change the name and email address of the current admin.
- Click "Save" to save changes.



- The current admin can update its current password using the Update Password section of the profile page.

9. Log-Out

- Click the username at the top right corner.
- Click "Logout" in the drop-down menu.



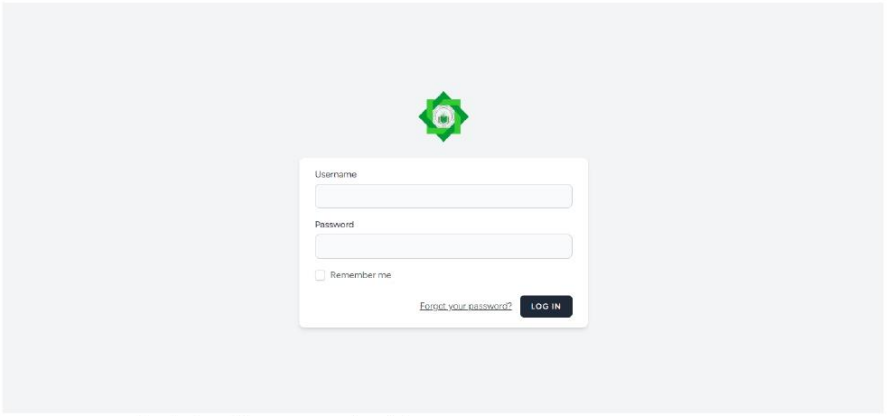
- Redirected to the login page.

DEVELOPMENT OF PAYROLL MANAGEMENT SYSTEM IN AL DAWAH PRODUCERS' COOPERATIVE

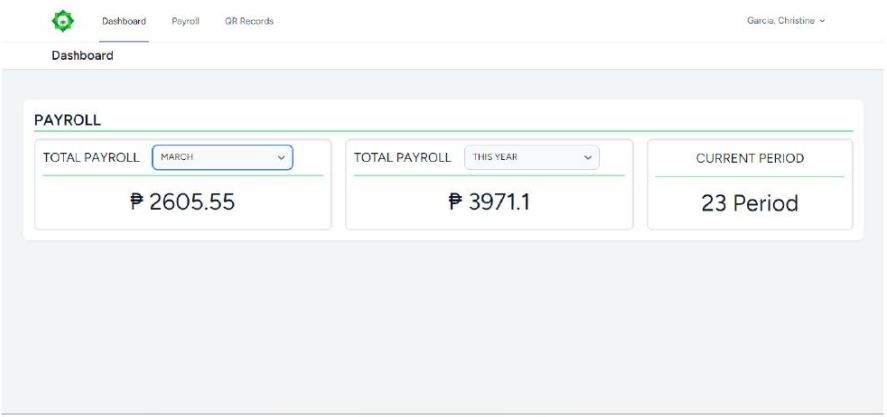
User Manual

As of June 13, 2024

1. **Login Page**
    - Open your browser
    - Go to this website, https://aldawah.online/
    - Automatically redirected at the login page



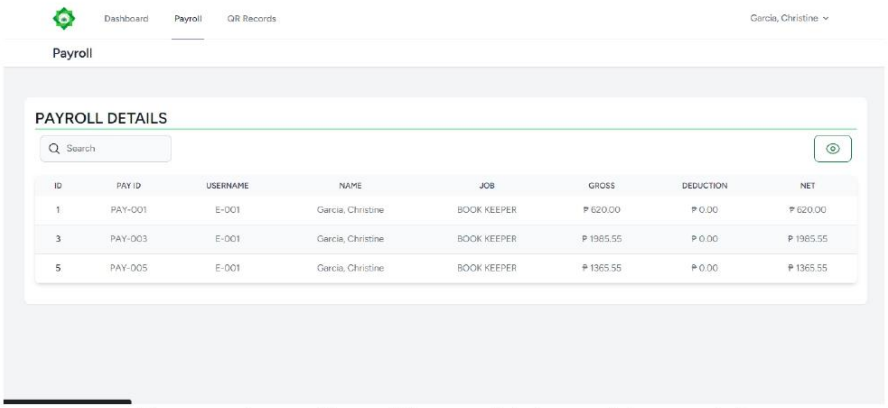
- Login in with user credentials
- Once successfully login, user homepage will open



- On the top part of the page, you will see 3 tabs to navigate pages. Each page contains the respective functions and records of the information of the user.

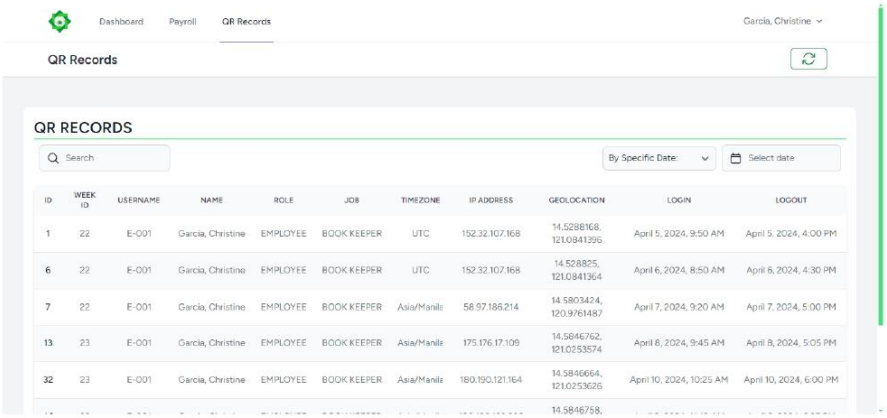
2. Payroll

- Click the "Payroll" tab.



- The current user will see all its payroll data once it is generated.
- The user can use the search bar to search for data.
- The eye icon can make hidden information visible when clicked.

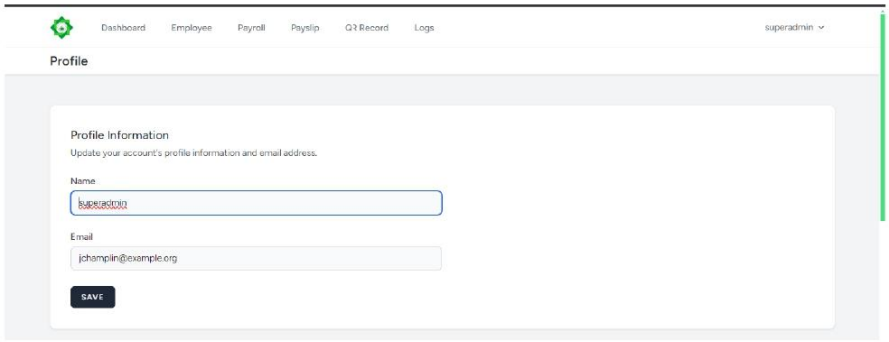
3. QR Record



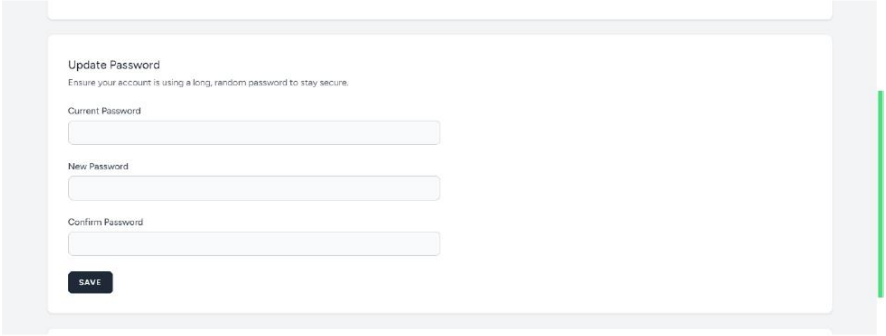
- Click the "QR Record" button.
- Once clicked, it will display all the data that has been recorded by the scanner.
- The admin can also search for data using the search bar.

- The admin can select the date to display the data for that specific date by using the date picker.
- The reload symbol at the top right corner functions as a reloader for the table to display all data.

4. **Profile**
    - Click the username at the top right.
    - Click “Profile” in the drop-down menu.



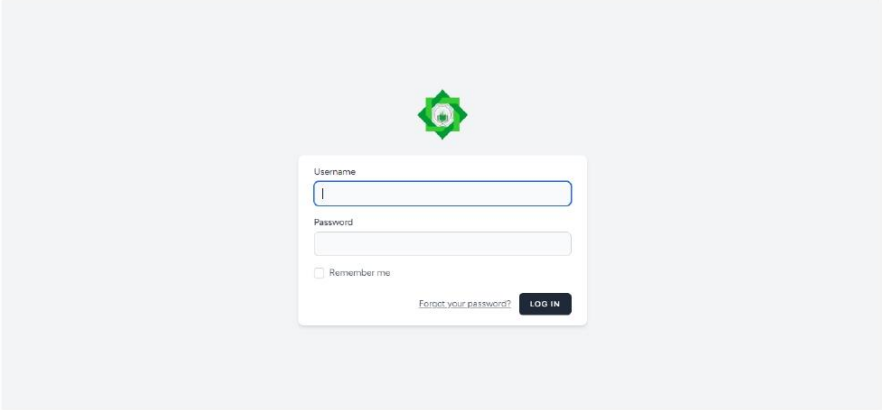
- The user can change the name and email address of the current user.



- Click “Save” to save changes.
- The current user can update its current password using the Update Password section of the profile page.

5. **Log-Out**
    - Click the username at the top right corner.

- Click “Logout” in the drop-down menu.



- Redirected to the login page.

DEVELOPMENT OF PAYROLL MANAGEMENT SYSTEM

IN AL DAWAH PRODUCERS' COOPERATIVE

QR Manual

As of June 13, 2024

1. **Login Page**
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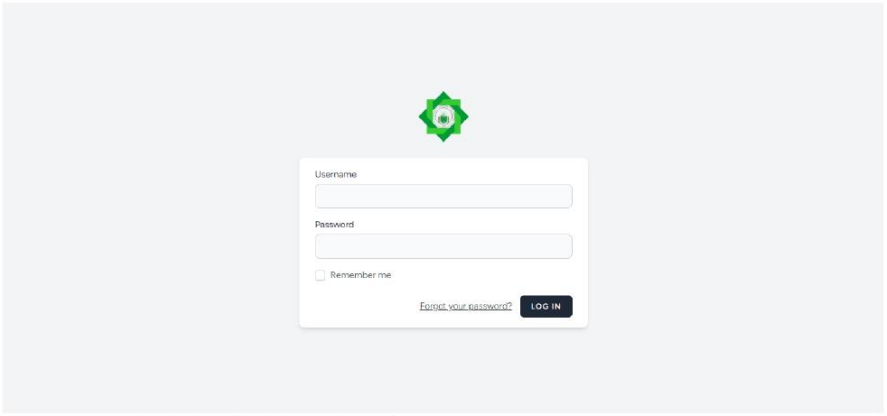
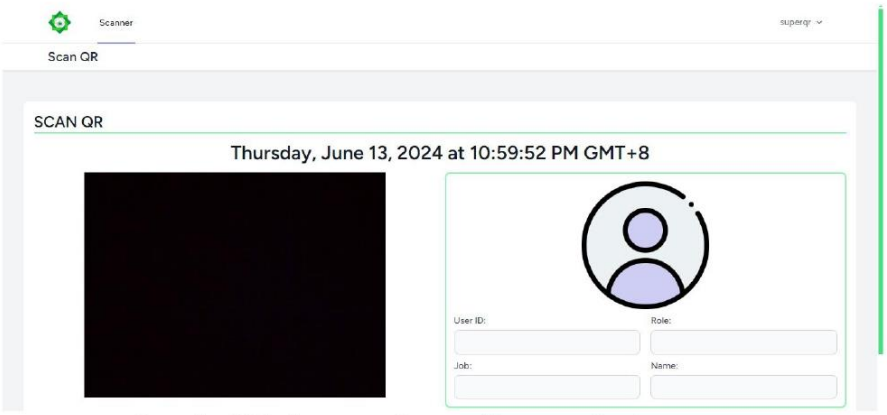
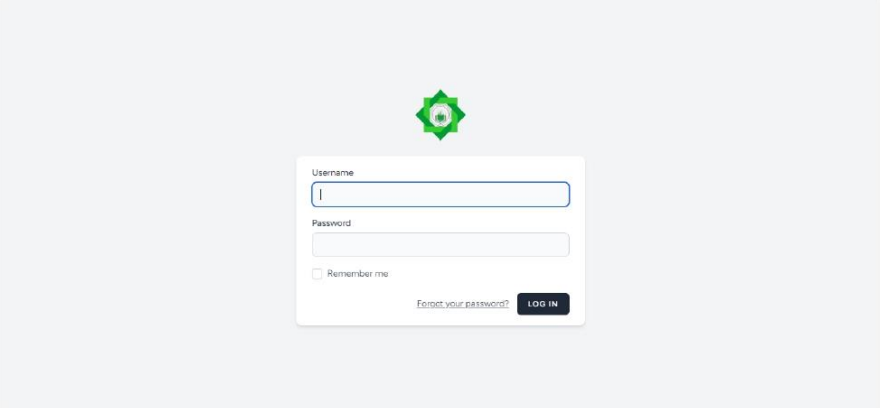


- Login in with QR credentials
- Once successfully login, QR homepage will open



- Scan the QR in the camera to record the user attendance.
- Once successfully recorded, the details of the employee who just scanned will be displayed in the right half of the page to know whether that person is the employee.

2. **Log-Out**
    - Click the username at the top right corner.
    - Click “Logout” in the drop-down menu.



- Redirected to the login page.