DOCUMENT TRACKING SYSTEM USING QR CODE TECHNOLOGY WITH DIGITIZATION

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Gacoscosim, Zion James P.; Caperiña, Paulo S.; and Delos Santos, Jenny Rose A.“Document Tracking System Using QR Code Technology With Digitization” (Eastern Visayas State University, December 2024, Tacloban City)

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The Document Tracking System (DTS) for the College of Engineering (COE) at Eastern Visayas State College (EVSU) is created to modernize and optimize the institution's document administration handle. As of now, the manual system utilized by EVSU is moderate, wasteful, and inclined to human blunders, driving to visit delays in archive recovery, fumble, and limited availability. The essential objective of the DTS is to address these challenges by executing a computerized arrangement that coordinating Quick Response (QR) code innovation, empowering the secure following, categorization, and real-time checking of archives. The system comprises of two major components: a web-based application and a QR code scanner application. The net application is built utilizing HTML, CSS, Bootstrap for the frontend, whereas PHP and MySQL oversee the server-side operations and database functionalities. The versatile application, planned utilizing Android Studio, permits clients to filter QR codes for moment get to report status, guaranteeing ease of utilize and on-the-go archive administration. The QR code innovation serves as a special identifier for each document, encouraging quick retrieval and following all through the complete report lifecycle, from accommodation to endorsement or dismissal. The implementation of this system will bring several benefits to the university. Administrators and staff will have access to a centralized system where document workflows can be easily monitored and managed, reducing paper-based errors and improving overall productivity. Additionally, the General Data (GD) function plays a critical role in the

digitization of physical documents, enhancing the system's ability to convert paper-based records into digital formats. This functionality allows for more efficient data handling, classification, and storage, contributing to the system's overall efficiency. The system also enhances document security by limiting unauthorized access, securing sensitive information, and reducing the risk of document loss or damage due to environmental factors. Additionally, it provides a sustainable solution by reducing paper usage and the physical storage space required for archiving documents. In conclusion, the DTS offers a robust, scalable, and secure solution tailored to the unique requirements of EVSU's College of Engineering. The system is expected to modernized document management processes, reduce operational costs, and ultimately provide a more efficient, accessible, and transparent workflow for all users involved. The project underscores the importance of digital transformation in academic institutions, providing a model that can be adopted and expanded to other departments within EVSU and beyond.

Keywords — Document Tracking, QR Code, Quick Retrieval, GD Function, Generalize Data, Document Tracking System, EVSU DTS

Chapter I

INTRODUCTION

In today's rapidly evolving world, Information and Communication Technology (ICT) stands as a cornerstone of progress and innovation. ICT encompasses the diverse range of technological tools and resources used to create, store, transmit, and manage information. From the advent of the internet to the proliferation of mobile devices and the rise of artificial intelligence, ICT has revolutionized how we live, work, and interact (Roztocki, Soja, & Weistroffer, 2019).

The Eastern Visayas State University (College of Engineering) is currently facing challenges with its manual document management system. The current process involves Office 1 receiving incoming documents and transferring them to Office 2. This process relies on physical logbooks to track each document's movement. Here's how it works: Office 1 records incoming documents in the logbook, and when the documents are ready to be sent to Office 2, they are recorded again. Upon receiving the documents, Office 2 records them in their logbook and processes them. After processing, Office 2 prepares the documents for transfer to another location, records them once more in the logbook, and obtains a signature.

In the old document management system, information had to be manually entered into a logbook, which was time-consuming and increased the chances of errors. This method could have been more efficient and ideal for larger companies or institutions with a high volume of documents. Additionally, as many employees often lost track of document paths, it's important for these systems to be able to trace the journey of documents from their source to their destination.

QR codes, widely used for document tracking, are compact, square-shaped barcodes that can be scanned effortlessly with a smartphone or other QR scanner. This allows users to quickly find information or records related to the code. QR codes offer many benefits for document tracking, can

involve expedient and effortless access to, as well as sharing of, information, and they easily integrate with existing records management systems (Hein, 2021).

The General Data (GD) function in the document tracking system serves as a vital tool for converting physical documents into digital formats automatically. This technology simplifies the process of document classification by organizing files into a structured digital database, reducing manual labor. By minimizing the need for paper files, the GD function makes storage more efficient and environmentally friendly. It also enhances data retrieval speed and accessibility, which is essential for institutions like Eastern Visayas State University (College of Engineering) that handle a large volume of documents (Laatre, 2023).

To address these challenges and improve the document management system, the proposed Tracking System using QR code technology and GD function for Eastern Visayas State University (College of Engineering) utilizes QR code technology and GD function to introduce a digital, automated solution. This new system will utilize QR code technology to simplify the tracking and updating of document statuses. Each document will receive a unique QR code, which can be scanned at different stages of the document's journey, ensuring precise and real-time tracking. The study aims to design and develop a Document Tracking System using QR code technology, along with General Data (GD) function integration. QR code technology offers a straightforward, cost-efficient, and reliable method for tracking and updating the status of documents (QR Code Press Staff, 2023).

Through the use of image processing scripts, the system will be able to classify documents based on their type, making it easier to identify and categorize them. This digital approach ensures that documents are securely stored and can be accessed quickly, greatly improving document management efficiency at Eastern Visayas State University (College of Engineering).

Objectives of the Project

The project was undertaken to develop a web-based and mobile application to easily track documents at Eastern Visayas State University (College of Engineering).

Specifically, this project sought to:

1. Incorporate QR Code technology in document tracking.
2. Digitize document for quick retrieval and filing.
3. Evaluate System using ISO/IEC 9126 software quality standards.

Scope and Delimitations of the Project

This project centers on developing a QR code-based document tracking system specifically for the Eastern Visayas State University (College of Engineering). The system's core features include real-time tracking of document movement, and automated notifications to keep users updated on document statuses. The system will enable both web-based and mobile access, allowing authorized users to track documents efficiently across various locations within the college. The project will be developed to operate on Android devices, as well as desktop and web interfaces compatible with widely-used web browsers. The system will employ QR codes to efficient the tracking process by enabling quick scanning at each stage of document processing. Additionally, the General Data (GD) Function helps generate a QR Code by encoding text into an image format, such as PNG or JPEG, and provides the capability to manipulate the image before saving or embedding it into a PDF file archiving or sharing purposes. However, the project does have certain limitations. Technologies such as RFID and biometrics, although effective for tracking and security, are not included due to their higher costs and maintenance needs.

Significance of the Project

The development of a Document Tracking System using QR Code Technology with GD Function for Eastern Visayas State University (College of Engineering) holds significant importance and potential benefits for various stakeholders involved.

Administrators. Useful data insights will be provided to administrators via user feedback, enabling them to make more informed decisions on campus infrastructure changes and service advancements. The system's functions to classify and digitize documents will also improve record-keeping and archival processes.

President's Office. This project will provide the President's Office with valuable insights into document flow and efficiency, enabling more informed decisions regarding administrative processes and resource allocation. Accurate and real-time document tracking will improve operations and overall efficiency.

Records Office. Document tracking with QR code technology has the potential to change the way the Record Office currently manages documents, including the methods of document storage and retrieval. Provided in the new system is the ability to digitize such documents and hence enable record keeping to be much more organized, accessible, and secure. This will streamline operations and bring down the chances of document loss or misfiling while giving access to important records quickly. More importantly, employees will be saved from drudgery, allowing the staff of the Records Office more time for other essential tasks, thus improving efficiency and quality of service in the office.

Admin Faculty and Staff. Enhanced document tracking will make it easier for faculty and staff to manage administrative tasks, access necessary documents, and ensure smooth operations in academic and administrative settings.

Clientele of EVSU. Improved document management using a user-friendly system will allow EVSU's clientele to access necessary documents, forms, and services more easily, reducing time spent on administrative tasks and contributing to a more focused and productive experience.

Students: Students will benefit from enhanced document management, allowing them to access necessary documents, forms, and services more easily, reducing time spent on administrative tasks.

Proponents. The proponents of the project will gain valuable experience in developing and implementing advanced document tracking systems, enhancing their skills and expertise in this field. Successful implementation will also provide a significant case study that can be used for future projects and research, contributing to the overall advancement of technology in document management.

Chapter II

THEORETICAL FRAMEWORK

Review of Related Literature

This research review article focuses on document tracking systems, with a particular emphasis on their application in universities. The article compiles insights from various studies to showcase the inefficiencies of manual document tracking and the potential benefits of adopting an automated system. The review explores different approaches to document tracking, including web-based systems, QR code implementations. By incorporating research on managing document management systems and the digital transformation journey of organizations, the article offers a well-rounded perspective on the importance of efficient document tracking in today's digital landscape.

QR Code Technology

A study by (Earlham College, 2023) discusses a QR code-based Smart Library Management System. This system, used in a library setting, enables users to access book records, issue and return items, and manage transactions. By scanning QR codes, students and staff efficiently handle book checkouts, which automates tracking and reduces manual tasks in inventory management. This example demonstrates how QR technology can streamline information management, making it ideal for educational environments aiming to improve document control.

The study by (Galgo, 2020) explores the effectiveness of using a QR code-based attendance system to improve class monitoring. Conducted during the 2019–2020 school year, the research utilized a descriptive-comparative design and gathered data through surveys completed by teachers. Findings revealed that the Scan Attendance Manager (SAM) application is a reliable, efficient, and secure tool for tracking student attendance. Teachers reported that the app significantly streamlined the attendance process, ensured accurate data generation, and maintained the confidentiality of

student information. Additionally, a notable improvement in student attendance was observed after the app's implementation, suggesting that SAM not only supports administrative convenience but also promotes better attendance behavior. The study further concluded that the app is not limited to classroom settings but can also be adapted for use in various school activities requiring attendance tracking.

A related study by (Tan & Yong , 2023), highlights the practicality and efficiency of QR code systems. Their research demonstrates how QR codes can replace traditional methods, offering scalability, ease of use, and cost-effectiveness. It also emphasizes user acceptability among students and faculty while identifying challenges such as potential fraud and the need for stable internet connectivity. These findings underscore the potential of QR codes in document tracking, where similar advantages and challenges could be observed.

Recently, various institutions have implemented the use of two-dimensional barcodes, commonly known as Quick Response (QR) Codes, for information dissemination. These codes can be scanned using smartphones, digital tablets, and other electronic devices. One of the key advantages of utilizing QR codes is their ability to facilitate library services and asset tagging within institutions. This paper proposes the integration of QR codes into the current library system of a private higher education institution in Malaysia to enable swift data retrieval at a minimal cost. The proposal includes conducting random Functional Acceptance Tests (FAT) and implementing necessary improvements. By incorporating QR codes into the library system, this initiative aims to enhance the ease of locating library assets, facilitate quick information retrieval, and minimize unnecessary time consumption (Din & Fazal Fazla, 2021).

The rise of remote work has significantly changed how documents are accessed and managed. QR codes are now being used as a solution to ensure the secure and efficient handling

of documents in remote work environments. Remote workers can scan QR codes to quickly access documents stored digitally, which facilitates smoother workflows despite physical distance. By linking QR codes to cloud-based systems or digital databases, organizations can ensure that their employees have immediate access to the information they need without having to rely on physical document exchanges. The ability to instantly scan and retrieve documents improves productivity, particularly in industries where speed and access to real-time information are critical. According to (Thompson & Zhang , 2022), QR codes have enabled organizations to seamlessly transition to remote work models without compromising document management efficiency.

In government institutions, QR code technology has been utilized to enhance the tracking and management of public records. The digitization of government records not only simplifies the retrieval process but also ensures better transparency and accessibility. According to a report by the (World Bank, 2021), several governments have successfully adopted QR codes for tracking land titles, legal documents, and permits, creating a secure and transparent process for managing public documents. By linking each record to a unique QR code, government agencies can quickly verify the authenticity and current status of documents, reducing the risk of fraudulent claims. This case study illustrates how QR codes can be applied in highly regulated fields where document accuracy and security are paramount.

A study by (Lui & Tang, 2020) proposed an innovative image authentication technique employing QR code watermarking based on image segmentation. The study introduces a novel approach where QR codes are embedded into images as watermarks to ensure authenticity and detect alterations. Image segmentation plays a crucial role in this process, dividing the image into segments to optimize watermark placement without compromising image quality. The authors highlight that traditional image authentication techniques often fall short in addressing the dual

requirements of robustness and imperceptibility. By using QR codes as secure carriers of information and integrating them into segmented image regions, their method provides enhanced resistance against various forms of tampering and attacks. Furthermore, the QR watermark serves as an additional layer of security, allowing the retrieval of critical information embedded in the image. This approach holds particular relevance in fields requiring high levels of image integrity and security, such as digital forensics, document authentication, and secure communication. The findings underscore the potential of combining QR code technology with image segmentation to advance modern authentication systems, aligning with broader trends in secure and intelligent data management systems.

A study by (Liew & Tan, 2021) proposed a QR Code-Based Student Attendance System aimed at enhancing the efficiency and accuracy of attendance tracking in academic institutions. The system integrates QR code technology to simplify the traditional attendance process, which is often prone to errors, delays, and manipulation. By utilizing QR codes, the proposed method allows students to scan their unique codes to mark their presence, ensuring accurate and real-time recording of attendance data. The study emphasizes the benefits of using QR code technology, including its low cost, ease of implementation, and user-friendliness. Furthermore, it eliminates the need for manual input or paper-based attendance, reducing administrative workload and minimizing environmental impact. The authors also highlight how the system improves data security and reliability compared to traditional methods.

In this research indicates that document tracking in higher education institutions is often inefficient. This inefficiency can result in lost documents and wasted time. Several studies have looked into the potential of using QR codes as a solution. For example, a study at a university in the Philippines explored the use of QR codes for online document tracking. The study discovered that

the system was considered effective and highly acceptable by both school administrators and staff. Although there were some differences in how prepared each group felt to implement the system, the overall findings suggest that QR codes have the potential to be a valuable tool for improving document tracking efficiency (Farin, 2022).

The study by (Kakirwar, Nagpure, & Kharwade, 2020) offers a QR-code-enabled solution to simplify navigation across complex university campuses, assisting students, staff, and visitors in finding specific locations and enhancing campus accessibility and user experience. Built on prior indoor positioning research, including RFID and augmented reality-based systems that have been successful in complex environments like hospitals and large office buildings, this project uses an Android-based application with QR codes to deliver interactive maps and navigation. Tools such as Adobe XD and Illustrator are used to visualize detailed maps, while QR codes enable quick data retrieval and substantial storage, making them ideal for wayfinding. Though alternatives like A*-based pathfinding algorithms and Acoustic Local Positioning Systems were considered, they were ultimately deemed less practical for this application due to deployment complexity and cost. This QR code solution addresses the limitations of traditional signage, which often becomes outdated as campuses expand, and could also be beneficial in environments like hospitals, where efficient navigation is essential.

(Reddy, et al., 2023) system aims to address the challenges of accurately recording attendance during online classes, particularly in the wake of the pandemic, which shifted many educational activities to a virtual format. Traditionally, attendance was taken manually, leading to issues such as proxy attendance, where one student marks another's presence. By implementing a QR code-based system, students can scan a QR code displayed by the instructor during class, significantly reducing the time spent on attendance while enhancing accuracy and accountability.

This method utilizes technologies like OpenCV for image processing, along with libraries such as MYQR for generating QR codes, PYbase64 for encoding, and Pyzbar for decoding, creating a seamless and efficient attendance process. This approach not only modernizes the attendance system but also aligns with current trends in educational technology that prioritize automation and efficiency, thereby allowing educators to focus more on teaching and less on administrative tasks. Studies have highlighted the effectiveness of QR code systems in improving attendance accuracy and user engagement in educational settings.

Document Management

The university is required to store documents for a minimum of five years, in accordance with ISO standards. To address issues with misplacing documents, a prototype for an IoT-based file tracking system was developed. It utilizes RFID technology, an Arduino Uno, and a mobile application to efficiently track and locate university documents (Abidin, Abas, Ghazali, & Hamid, 2020).

Recently, various institutions have implemented the use of two-dimensional barcodes, commonly known as Quick Response (QR) Codes, for information dissemination. These codes can be scanned using smartphones, digital tablets, and other electronic devices. One of the key advantages of utilizing QR codes is their ability to facilitate library services and asset tagging within institutions. This paper proposes the integration of QR codes into the current library system of a private higher education institution in Malaysia to enable swift data retrieval at a minimal cost. The proposal includes conducting random Functional Acceptance Tests (FAT) and implementing necessary improvements. By incorporating QR codes into the library system, this initiative aims to enhance the ease of locating library assets, facilitate quick information retrieval, and minimize unnecessary time consumption (Din & Fazal Fazla, 2021).

Document Management Systems (DMSs) should be recognized as green technology and an essential part of green digital transformation. The importance of sustainability is growing for both organizations and society, and DMSs, along with paperless business practices, can help organizations become more sustainable. However, a common issue with DMS implementations is that they often fail, and users tend to use DMSs at a basic level, which means they still prefer printing documents instead of using electronic ones. An effective framework is needed to improve DMS implementation and encourage more advanced usage, which will in turn contribute to a greener digital transformation for the organization. This reflects the organization's maturity in this area (Zabukovsek, Jordan, & Bobek, 2023).

According to (Udvaros J. , Forman, Tasic, & Szabo, 2024) this research explores the integration of QR code technology in order tracking and logistics within the e-business sector. QR codes are utilized to improve the efficiency of managing and tracking orders as they progress through various logistics stages, enhancing transparency and real-time access to shipment information. This improves customer satisfaction by offering immediate updates on deliveries and order status. The study highlights the cost-effectiveness of QR codes compared to more expensive technologies like RFID, making them an accessible solution for both small and large businesses. Furthermore, the automation of logistics processes is enhanced by QR codes, reducing manual input and errors while allowing businesses to optimize supply chain management. By automating tasks like inventory updates, order fulfillment, and shipment status notifications, businesses can reduce operational costs and improve efficiency. However, the study also addresses challenges such as the potential for fraud and the need for widespread adoption of QR code scanning technology among stakeholders.

The Records Tracking Management System (RTMS) developed for Surigao del Norte State University is a comprehensive solution designed to efficient the management and tracking of

documents within the institution. It features role-based access for Super Admins, Secretaries, Staff, and Faculty, allowing users to perform essential tasks such as logging in, uploading scanned documents, creating and viewing document trails, generating QR codes for easy tracking, and sharing documents. The system was meticulously designed using Unified Modeling Language (UML) diagrams to enhance user experience and communication among stakeholders. Rigorous testing, including System Testing and User Acceptance Testing (UAT), ensured the system's functionality and usability met the expectations of end users. Evaluation results, derived from user feedback using a Likert scale, indicated a high level of satisfaction across various quality characteristics, with an overall Grand Weighted Mean score of 4.44, denoting excellence. The RTMS not only fulfills the specific needs of its users but also aligns with ISO 25010 standards, positioning it as a reliable and efficient tool for effective records management in the university (Piloton, Gamboa, Jr., Dela Cerna, & Reyna, 2023).

The Document Management System (DMS) described in the study employs a combination of Optical Character Recognition (OCR), clustering, watermarking, and QR coding algorithms to enhance document security and retrieval for the Department of Budget and Management Regional Office VI (DBM RVI). This stand-alone desktop application allows users to scan official documents, which are then converted to text using OCR, facilitating easier searching through a clustering mechanism that uses the Term Frequency-Inverse Document Frequency (TF-IDF) algorithm. By integrating watermarking and QR codes, the system ensures document authenticity and security, allowing users to verify the legitimacy of each document quickly. The project follows the Evolutionary Prototyping model, allowing for continuous evaluation and refinement based on user feedback. The implementation addresses several critical challenges faced by DBM RVI, such as the physical deterioration of paper documents and the inefficiencies of manual document retrieval. Overall, this

DMS not only digitizes and organizes the vast amount of paperwork but also enhances accessibility, security, and the overall management of vital government documents (Censoro, 2021).

The study by (Kwon, Son , & Lee, 2023) presents a novel approach to copyright distribution management using a holographic multi-channel QR code system. This method importance the advanced capabilities of QR codes to ensure secure, efficient, and tamper-resistant distribution of copyrighted materials. By utilizing a multi-channel encoding mechanism, the system enhances data storage and access while providing a robust framework for copyright protection. The authors emphasize the importance of incorporating holographic technology to mitigate risks associated with data forgery and duplication, a critical issue in digital copyright management. Furthermore, their design aligns with the increasing demand for secure digital distribution methods in the modern era, where intellectual property faces diverse challenges, including piracy and unauthorized reproduction. This study is relevant to systems focusing on secure document tracking and data management, such as the one proposed for Eastern Visayas State University (EVSU). The integration of advanced QR code features could improve data classification, retrieval efficiency, and the overall integrity of a document tracking system. Additionally, the focus on multi-channel encoding offers a potential avenue for further exploration in enhancing digital security within institutional frameworks.

Digitalization

Small and medium-sized enterprises (SMEs) play a significant role in the South African industry, contributing to economic development and innovation. However, creating digital systems tailored for SMEs is difficult due to constraints such as time, skills, and finances. Our research offers valuable insights into the digital system priorities of 200 South African SMEs and details the development of four out of the 10 identified systems (Telukdarie, Dube, Matjuta, & Philbin, 2022).

Concept of the Study

The conceptual framework for this project outlines the proposed Document Tracking System using QR code technology and GD function for Eastern Visayas State University (College of Engineering). It depicts the relationship between the current manual document management system's problems, the proposed system's functionalities, and the anticipated outcomes.

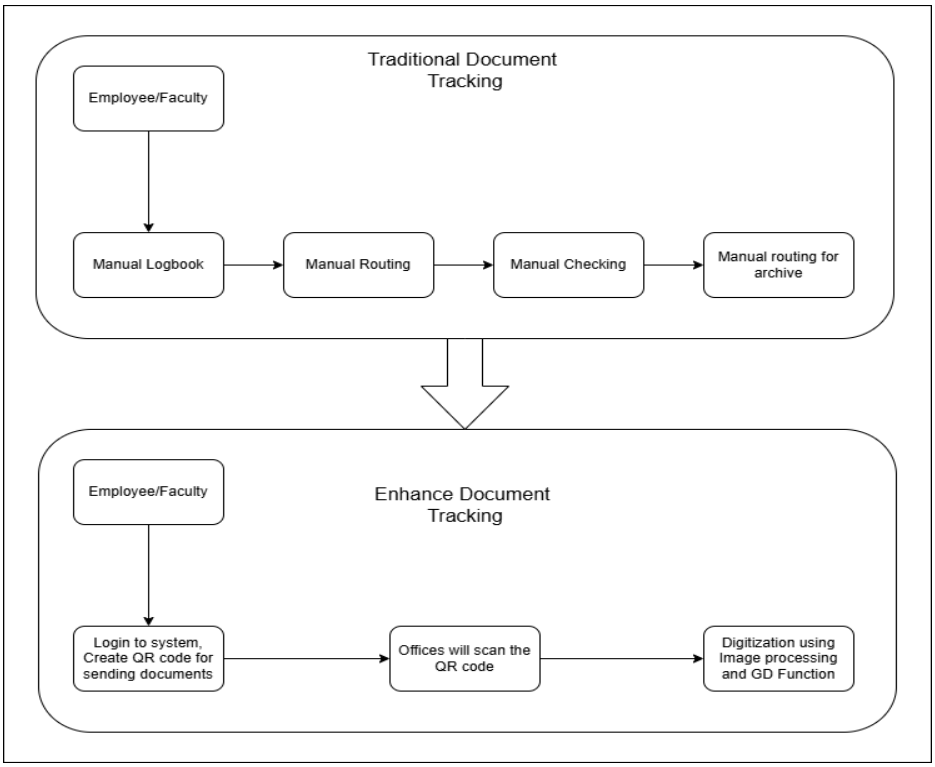


Figure 2-1. Conceptual Framework

Traditional document trucking involves manually tracking documents. An employee or faculty member would first log the document in a manual logbook. Then, they would manually route the document to the recipient. Once received, the recipient would manually check the document and encode it for archiving. The proposed Document Tracking System (DTS) at Eastern Visayas State University (College of Engineering) aims to enhance organizational efficiency by utilizing digitization, real-time document tracking, image processing, and QR code technology. Digitization involves

converting physical documents into digital formats, such as PDFs, which are then stored securely within the DTS. The manual routing and document tracking process takes 3 to 5 days, whereas the DTS completes it in just 1 to 2 hours. This transformation facilitates easier access and retrieval of documents, improving time management by reducing the time required to locate and handle documents. Additionally, digitized documents are less prone to loss and damage, further contributing to the reliability and efficiency of document management.

Definition of Terms

This paper introduces a suite of innovative technologies designed to transform document management at Eastern Visayas State University (College of Engineering). By embracing digitization, document management systems, document tracking, image processing, and QR codes, COE can create an accessible, and efficient system for all its document needs.

Digitization. The process of converting physical documents (paper) into digital formats (electronic files) for storage and retrieval using computers or electronic devices. The process of converting paper documents at Eastern Visayas State University (College of Engineering) into digital formats (e.g., PDFs) for secure storage within the proposed document tracking system, enabling easy access and retrieval.

Document Management System. A software application or system used to electronically store, organize, track, and manage the lifecycle of documents within an organization. The existing paper-based system at Eastern Visayas State University (College of Engineering) for managing the flow and status of documents, which relies on logbooks for manual tracking.

Document Tracking. The process of monitoring the movement and status of documents throughout their lifecycle within an organization. The functionality within the proposed system that

tracks the movement and status of documents in Eastern Visayas State University (College of Engineering) in real-time using QR code scans and system updates.

GD Function. The GD Function helps generate a QR Code by encoding text into an image format, such as PNG or JPEG, and provides the capability to manipulate the image before saving or embedding it into a PDF file archiving or sharing purposes.

Image Processing. The application of computer algorithms to analyze and manipulate digital images for various purposes, such as object recognition and classification. Image processing scripts integrated within the proposed system to automatically categorize documents based on their type through image analysis upon upload.

QR Code. A two-dimensional barcode that stores information and can be scanned by smartphones or dedicated scanners to access the encoded data. Unique QR codes assigned to each document within the proposed tracking system, allowing for quick identification, status updates, and information retrieval through scanning.

Chapter III

OPERATIONAL FRAMEWORK

This chapter outlines the operational framework of the proposed Document Tracking System (DTS) for Eastern Visayas State University (College of Engineering). It details the necessary materials, including software, hardware, and data required for successful system implementation.

Materials

This section displays and specifies the resources required for the system development.

Software

DTS rely on a variety of software for different components. For the mobile application, Android Studio is used for development. The web application utilizes a combination of technologies for both structure and presentation, including HTML, CSS, and Bootstrap. On the server-side, PHP handles dynamic content, while MySQL stores and manages the system's data.

Table 3-1. Software Material Used

Software	Description
Visual Studio	It's a comprehensive integrated development environment (IDE) that you can use to write, edit, debug, and build code
Bootstrap	Front-end web framework for creating responsive and Use-friendly interfaces for the web-based application of the DTS
CSS	The visual presentation of the web application's user interface.
HTML	For creating web pages and structuring the application's content.
MySQL	For storing and managing document data within the DTS.

PHP	For server-side development, used to create dynamic web pages and interact with the database.

Hardware

To develop the system, a variety of hardware components will be utilized, including a laptop computer, and Android device. The table below details the specific models and specifications of these components.

Table 3-2. System Hardware

Hardware Used	**Specifications**
Laptop Computer	Windows 11 Home AMD Ryzen 5 5500U 8.00 GB RAM 512 GB SSD
Android Device	Android 12 8GB RAM 128GB ROM Helio G99 6000mAh

Data Source

This section presents an overview of the data sources used in this project, highlighting their significance and the methodologies employed for data collection.

Table 3-3. Data Source

Data Source	Description	Collection Method
Office Interviews	Gather process flow on current document management practices, challenges, and needs.	Process flow interview

System Environment

Locale. The study and implementation of the Document Tracking using QR code with GD Function are centered at Eastern Visayas State University (College of Engineering). Encompasses all the department and faculty to simplify the tracking and updating of document statuses.

Figure 3-1. Map of EVSU (College of Engineering)

The map view shows the boundaries of Tacloban City where the system will be implemented, EVSU (College of Engineering) is Located at Salazar St, Downtown, Tacloban City, Leyte.

Population of the Study

The study population for the document tracking system at Eastern Visayas State University (College of Engineering) main will include key stakeholders such as administrators and the President's Office, faculty and staff, clients and external stakeholders like alums and partner institutions, and the IT department along with project proponents. We chose the Engineering Department because both the Records and HR offices are located there. The issue with manual routing and tracking is that it is time-consuming and prone to errors. The Document Tracking System (DTS) addresses these problems by making the process faster, more reliable, and easier to manage. By focusing on these groups, the study aims to gather comprehensive feedback to ensure the system effectively meets the needs of its primary users, enhancing document management and operational efficiency at Eastern Visayas State University (College of Engineering).

Description of the Present System

The current document management system at Eastern Visayas State University (College of Engineering) is predominantly manual, relying on physical documents stored in filing cabinets and tracked using paper logs or basic spreadsheets. This method is time-consuming, prone to human error, and inefficient, requiring significant document retrieval and management effort. Accessibility is limited, as documents can only be accessed during office hours and must be physically transferred for sharing, leading to delays and inconvenience. The system faces security challenges, with physical documents vulnerable to unauthorized access, damage, or loss. Overall, the present system is resource-intensive, requiring substantial time, effort, and storage space, highlighting the need for a more efficient, secure, and accessible document management solution.

Limitations and Drawbacks of the Present System

The current document management system at Eastern Visayas State University (College of Engineering) faces several limitations. It relies on manual processes, which are inefficient and time-consuming, requiring significant effort for filing, searching, and retrieving documents. The system is prone to human errors, such as misfiling or incorrect logging, leading to lost or misplaced documents. Accessibility is restricted, as documents can only be accessed during office hours and at specific locations, causing inconvenience and delays. Reliance on physical storage requires substantial space and resources, making managing an increasing volume of documents difficult.

The system also has several drawbacks. Security vulnerabilities are a significant concern, as physical documents risk unauthorized access, theft, or damage from environmental factors like fire or water. Ensuring the confidentiality and integrity of sensitive information is challenging with manual handling. The lack of real-time tracking and updates also hampers efficient workflow management and timely decision-making. The resource-intensive nature of the current system, with high operational costs and environmental impact due to paper usage, further underscores the need for a more efficient, secure, and accessible document management solution.

Methods

The GD function and the Agile model both significantly enhance document management systems, although in different ways. The GD function generates QR codes by encoding text into scannable images, which can be easily fixed into documents for efficient archiving and sharing. It also allows for manipulation of the image, such as adjusting size and color, to meet specific needs. In parallel, the Agile model improves document tracking by promoting iterative development and continuous feedback, ensuring that the system remains flexible and adapts to the needs of its users, such as administrators, faculty, and staff. For an institution like the College of Engineering (COE),

this approach results in a more secure, user-friendly, and efficient system. When combined, these methods enable a dynamic document management solution where QR codes provide quick access to resources, and the Agile framework ensures continuous improvements to meet evolving requirements.

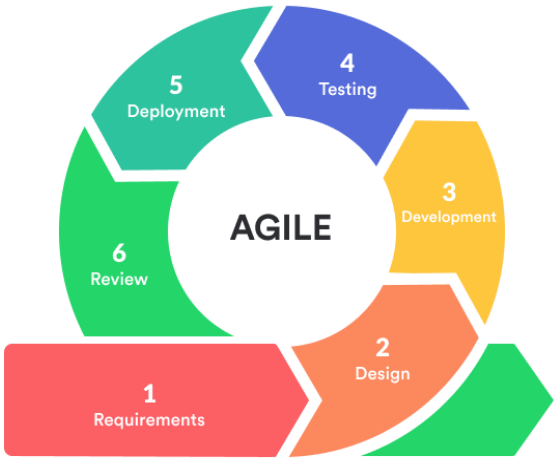


Figure 3-2. Agile Model

The Document Tracking System (DTS) with QR Code Technology at Eastern Visayas State University (EVSU) follows the Agile Methodology, ensuring continuous improvement and adaptability. This approach allows for incremental development, continuous user feedback, rapid issue resolution, and adaptability to change, making the system more efficient and user-friendly. Through Agile, the system is developed in small, manageable phases, incorporating feedback from faculty, staff, and students to enhance document tracking and retrieval. Bugs and inefficiencies are quickly addressed, and new features, such as enhanced QR code functionalities, can be seamlessly integrated. This collaborative and flexible approach ensures that the DTS remains efficient, secure, and aligned with the evolving needs of EVSU.

Gantt Chart

The Gantt chart outlines the timeline and key tasks involved in the project's development process. It provides a visual representation of the various phases, including requirements, design, development, testing, and deployment, ensuring a structured approach to achieving project goals.

Table 3-4. Gantt Chart

ACTIVITIES	2024																							
	July				August				September				October				November				December			
Requirements																								
Design																								
Development																								
Testing																								
Deployment																								
Review																								

Table 3-4 Indicates the duration of activities planned for the proposed system development. This phase will serve as the proponents' activity guide for the requirements, design, development, testing, and deployment stages.

Requirements

In this stage the proponents outlined the key features and goals of the Document Tracking System (DTS) for Eastern Visayas State University (College of Engineering). It involves defining the project's scope, identifying stakeholders, and gathering requirements through interviews at EVSU.

Design

In this stage, the system’s architecture was designed, including the user interface (UI) and database schema. Wireframes and mockups were created to visualize how the system would function and appear. The integration of QR code technology and the GD function was planned

in detail to ensure seamless implementation. Feedback from stakeholders was considered to refine the design.

Data and Process Modelling

Context Diagram. A System Context Diagram (SCD) depicts the entities that interact with a system and defines the boundary between the system and its environment.

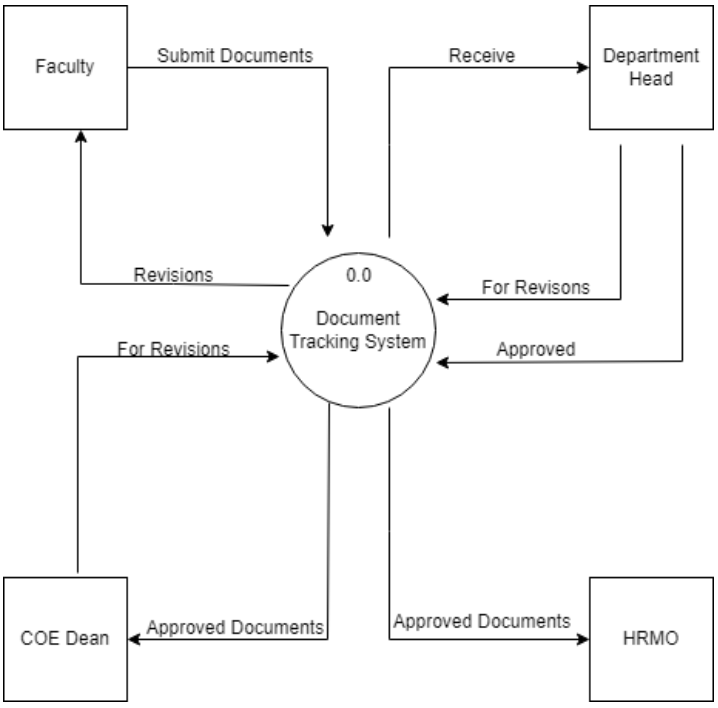


Figure 3-4. Context Diagram

Figure 3-4 shows a basic Document Tracking System. Users start by sending a document and requesting the status of a document, which the system retrieves from the database and displays to them. This key feature ensures users are kept updated on the progress of their documents. Moreover, the diagram highlights the administrative functions. Administrators can manage documents via a specialized interface, where they can access a list of documents and make updates or changes as needed. The database acts as the central repository for document information, supporting both user inquiries and administrative tasks.

Data Flow Diagram (DFD). It illustrates how data flows within Eastern Visayas State University (College of Engineering) proposed document tracking system, detailing interactions between users (administrators, faculty, staff, clients) and core system functionalities (document scanning, QR code generation, classification, storage, retrieval). It visualizes the integration of user inputs and system operations to enhance document management efficiency, security, and accessibility.

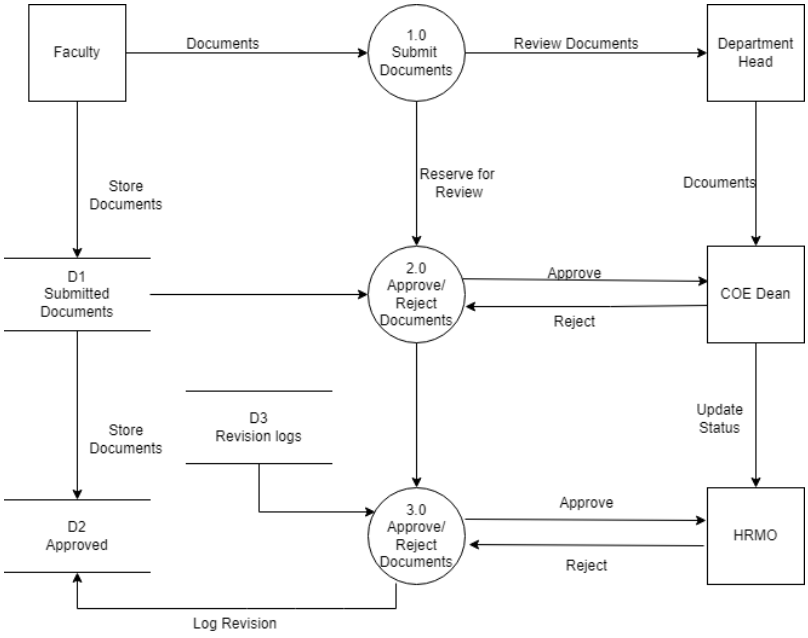


Figure 3-5. Data Flow Diagram

Figure 3-5 outlines a basic workflow for a Document Tracking System. Users can input documents into the system, which then stores and manages the information. This centralized repository allows for efficient tracking and retrieval of documents.

System Flowchart. A system flowchart outlines the sequential processes within COE's proposed document tracking system, from document scanning and QR code generation to classification, storage, and retrieval. It demonstrates how user actions and system functions are coordinated to ensure efficient, secure, and accessible document management.

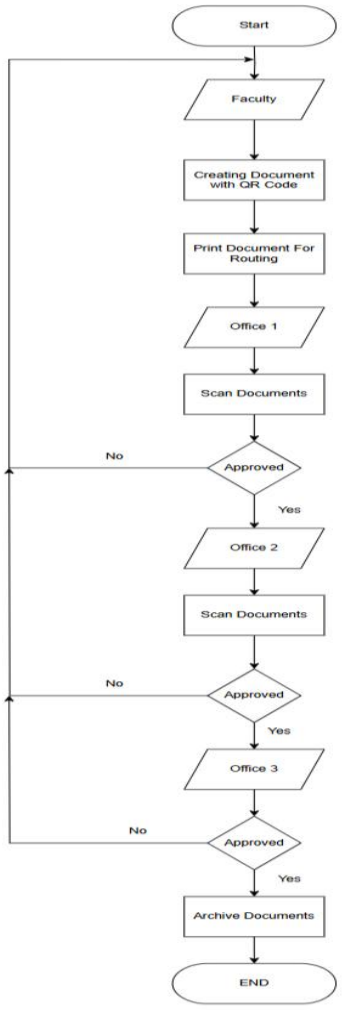


Figure 3-6. System Flowchart

This system flowchart represents the approval process for documents as they pass through multiple offices. The process begins with an initial submission at Office 1, where the document is reviewed. After verification, the document is forwarded to Office 2 for further checking. Each subsequent office, such as Office 3 and beyond, continues the review process based on their designated role.

At a decision point, an approval check is conducted. If the document is approved, it proceeds to the final office for signing and validation. Once signed, the document is officially recorded. If the

document is declined at any stage, it is sent back for corrections or rejected based on the given conditions. The process ensures proper validation before completion, improving document tracking and accountability.

Use Case Diagram. The use case diagram illustrates the interactions between users (administrators, faculty, staff, and clients) and the document tracking system at Eastern Visayas State University (College of Engineering). It identifies critical functions such as document scanning, QR code generation, classification, and retrieval, showing how users use the system to achieve efficient document management.

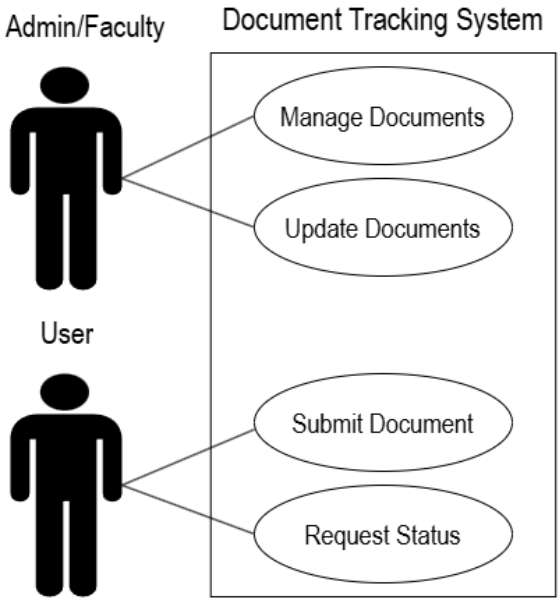


Figure 3-7. Use Case Diagram

Figure 3-7 The Use Case diagram illustrates a Document Tracking System with two primary user roles: Admin/Faculty and User. Admin/Faculty members can Manage and Update documents within the system. Users, on the other hand, can Submit documents and Request Status updates on their submissions. This system facilitates document handling and tracking for both administrative personnel and end-users.

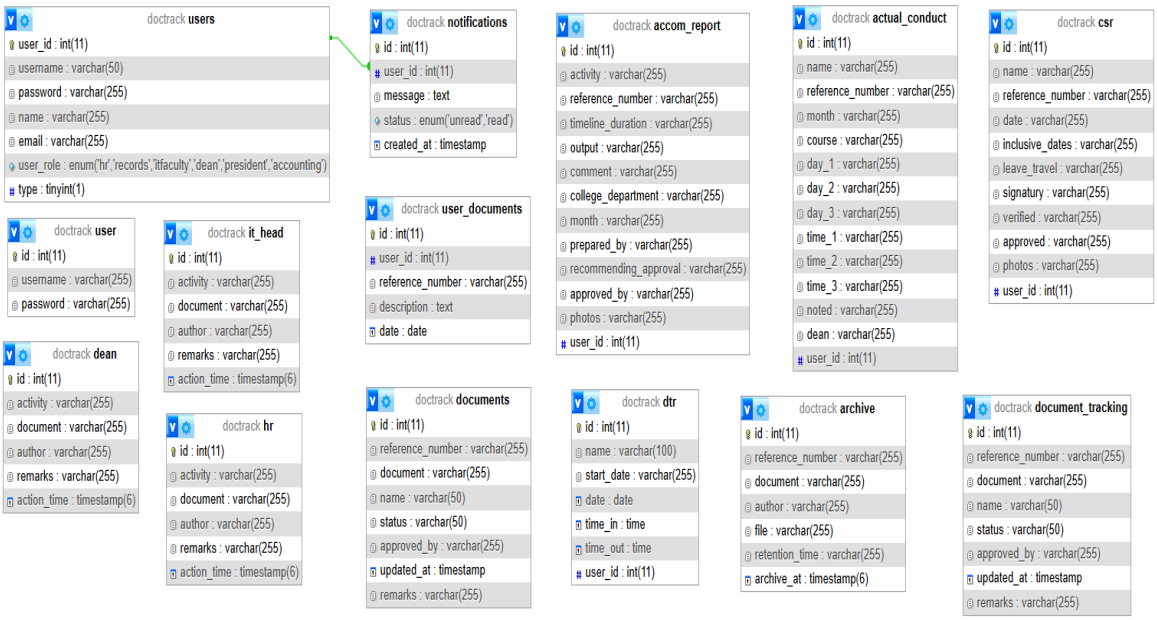


Figure 3-8. Database Schema

This database schema outlines a document tracking system, likely for an institution with various user roles Faculty, IT Head, COE Dean, and HR. It manages users, documents, and their relationships, tracking document progress and approvals. Tables like doctrack accomplishment report and doctrack actual conduct suggest tracking for specific activities. The system aims to efficient document management and enhance accountability, though clearer naming conventions and foreign key constraints would improve it.

System Architecture. The system architecture diagram provides a high-level overview of the components and their interactions within Eastern Visayas State University (College of Engineering) document tracking system. It highlights integrating hardware and software elements, including the QR code scanning devices, the document management server, and the user interface, to create a cohesive and efficient document management solution.

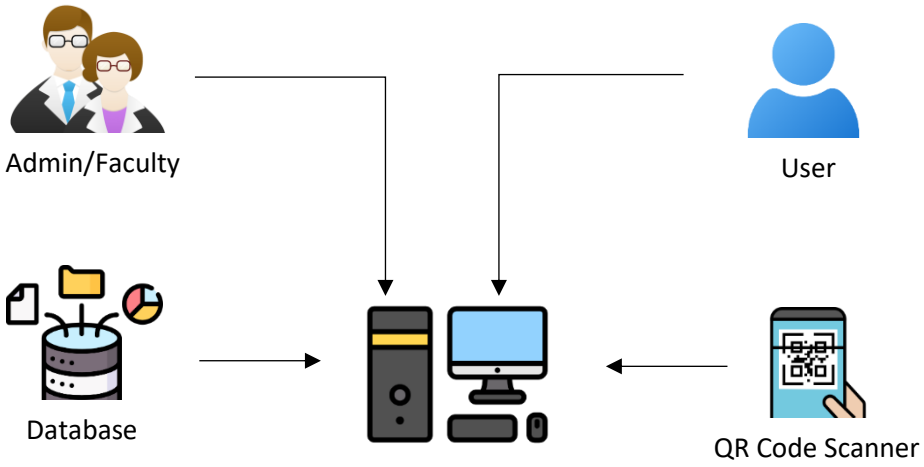
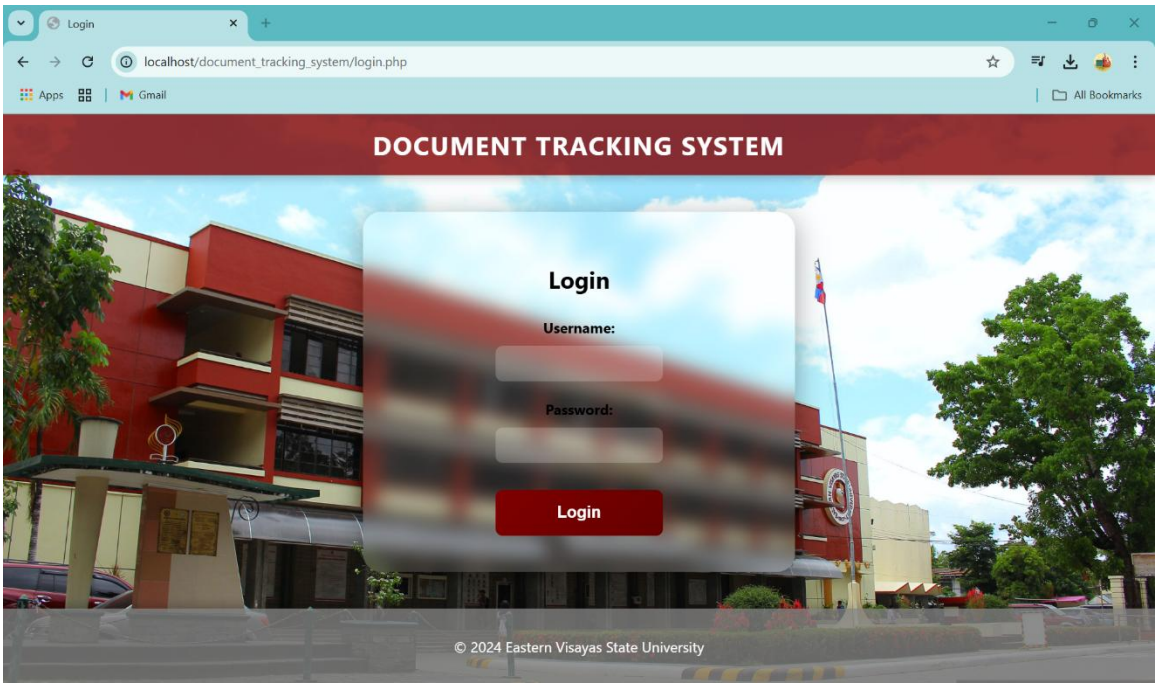
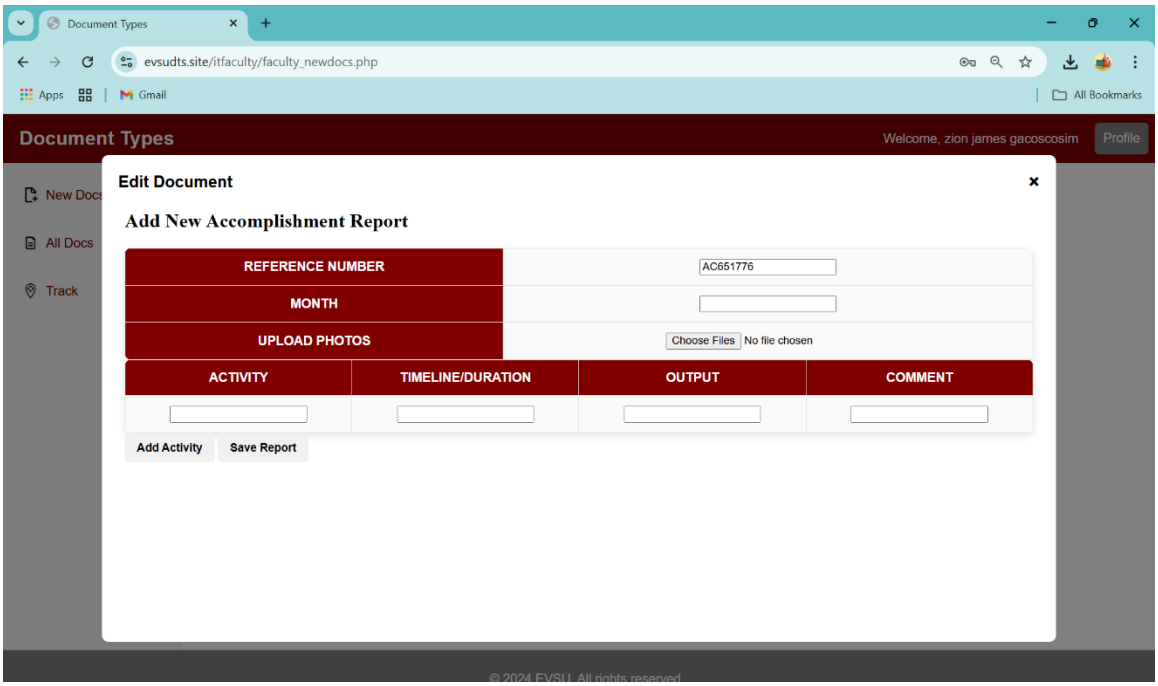


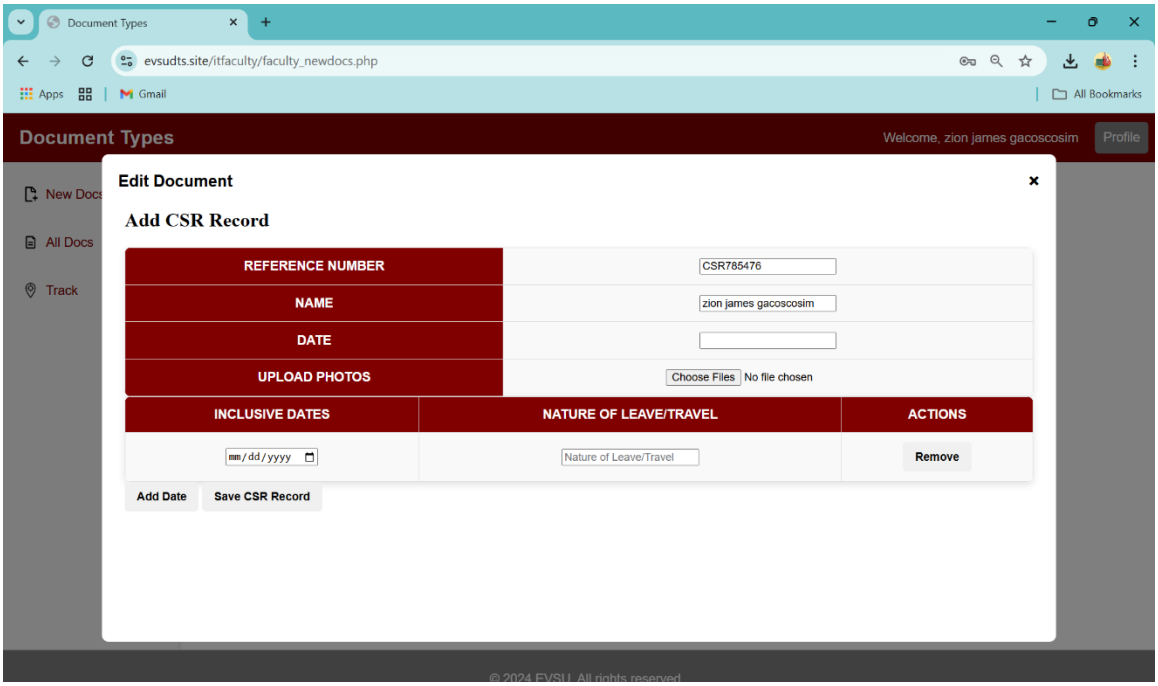
Figure 3-9. System Architecture

Figure 3-9 diagram depicts a system architecture involving a QR code scanner, a database, and user roles: User and Admin/Faculty. At the center of the system is a central server or PC, which serves as a connection point for Admin/Faculty, Users, the Database, and a QR Code Scanner. Admins or faculty members are granted high-level access to manage, monitor, and update document statuses, while users engage with the system to submit or track documents. The Database plays a critical role as it stores all document-related data, including reference numbers, sender details, and status updates, making it the foundation for data management. The QR Code Scanner is utilized to simplify document identification and retrieval, enabling users to scan a QR code for quick access to document details or to record updates.

Output and User-Interface Design. The result of creating efficient software system interfaces is that users with no prior experience can quickly learn how to use the system.



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All Bookmarks
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Choose Files
No file chosen
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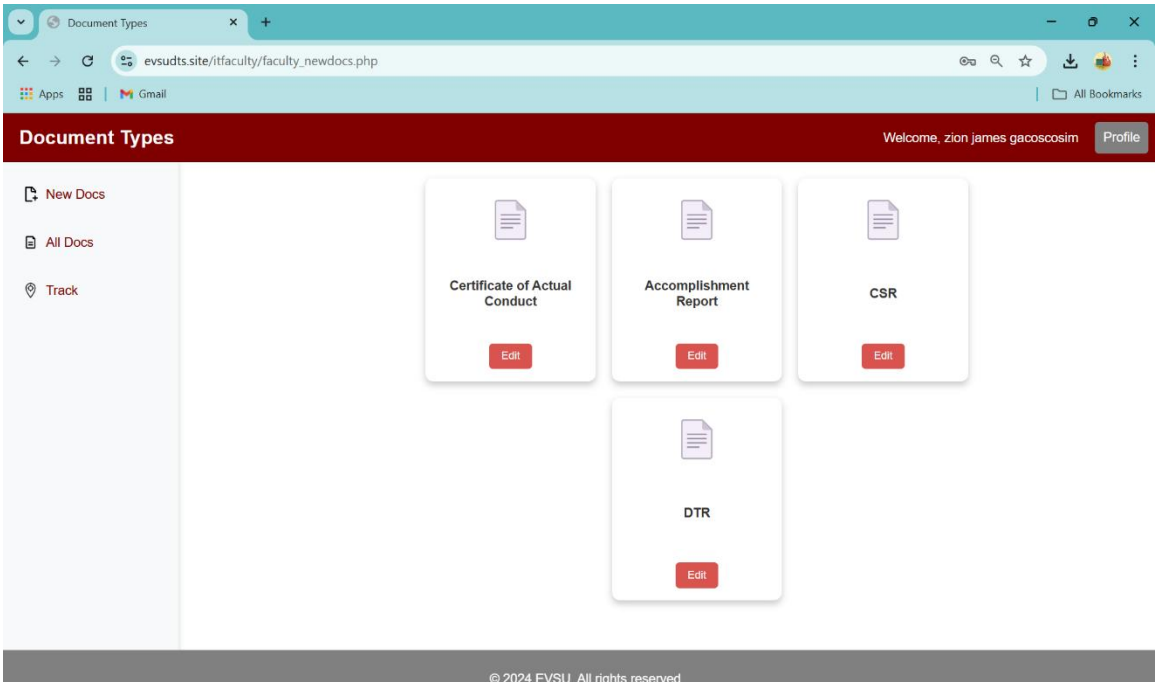
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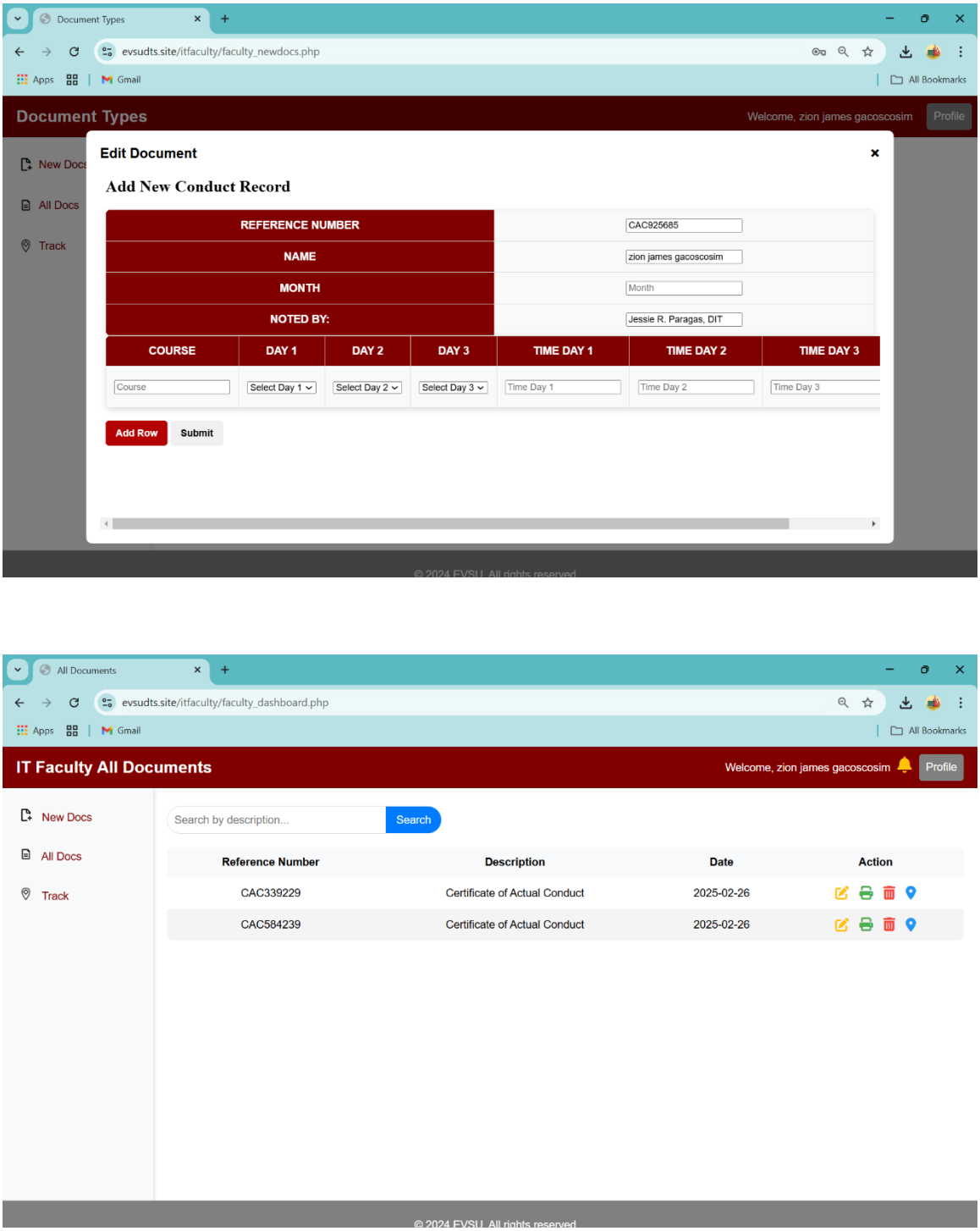


Figure 3-10. Output and User-Interface Design

This figure illustrates the login page, all documents, creating documents and tracking documents.

Development

The development stage focused on coding and implementing the core features of the DTS. The team followed an iterative approach, building the system in small phases and incorporating feedback from stakeholders after each update. Key functionalities, such as QR code generation, document tracking, and automatic digitization, were developed and tested during this phase.

Testing

During this stage, the system underwent rigorous testing to ensure it met the requirements. Unit testing, integration testing, and system testing were conducted to identify and fix bugs. The proponents also employed usability testing with selected EVSU staff to gather feedback on the system's interface and functionality. The system's performance was evaluated using ISO/IEC 9126 criteria.

Testing is essential for ensuring the success and quality of software. The primary goal of software testing is to identify defects, enhance overall quality, reliability, and performance, and confirm that the application functions as intended based on its requirements. In this project, we implemented Usability Testing as our testing approach. This involves releasing the software to a select group of users, allowing for additional testing to identify and address any issues or defects. After this phase, the program was made available to the public to gather user feedback and assess its performance. Additionally, we conducted further usability assessments to evaluate the user experience.

Deployment

The Document Tracking System (DTS) using QR Code Technology with GD Function at EVSU (College of Engineering) ensures a smooth and efficient implementation. It begins with final testing and bugs fixes to resolve any identified issues before full-scale deployment. Once the system

is stable, it is installed and configured, ensuring accessibility for administrators and users. An initial rollout is then conducted in a controlled environment to monitor performance and gather user feedback. Based on this feedback, necessary adjustment and improvements are made to optimize system functionality. This structured deployment approach enhances efficient, security, and ease of Document Tracking within the university.

Review

The Document Tracking System (DTS) using QR Code Technology with GD Function at EVSU (College of Engineering) ensures that the system meets its intended objectives through continuous evaluation and improvement. It involves assessing the sytems's functionality, reliability, usability, efficiency, maintainability, and portability based on ISO/IEC 9126 software quality standard. User feedback from faculty, staff, and students is gathered to identify areas for enhancement, ensuring that the system effectively smooth-running document tracking and retrieval. Performance evaluation help in identifying and resolving ant issues, leading to improved efficiency and security. The Agile approach allows for iterative refinements, ensuring, that the system remains adaptable to the evolving needs of the university.

Chapter IV

RESULTS AND DISCUSSIONS

This chapter shows the results of the study's objective and how implementing a web-based services for Eastern Visayas State University (EVSU) has significantly improved the document tracking and archiving system.

Incorporating QR Code Technology

Document tracking procedures are improved by the system's efficient integration of QR Code technology. By scanning a distinct QR code attached to each document, users can utilize this functionality to monitor and update the status of documents in real-time. With the use of QR Code technology, users may find and access document information in three seconds, as opposed to the traditional system that needed physical logbooks and human entries, which were laborious and prone to mistakes. This invention offers a more dependable and effective solution by doing away with the inefficiencies connected to conventional document tracking.

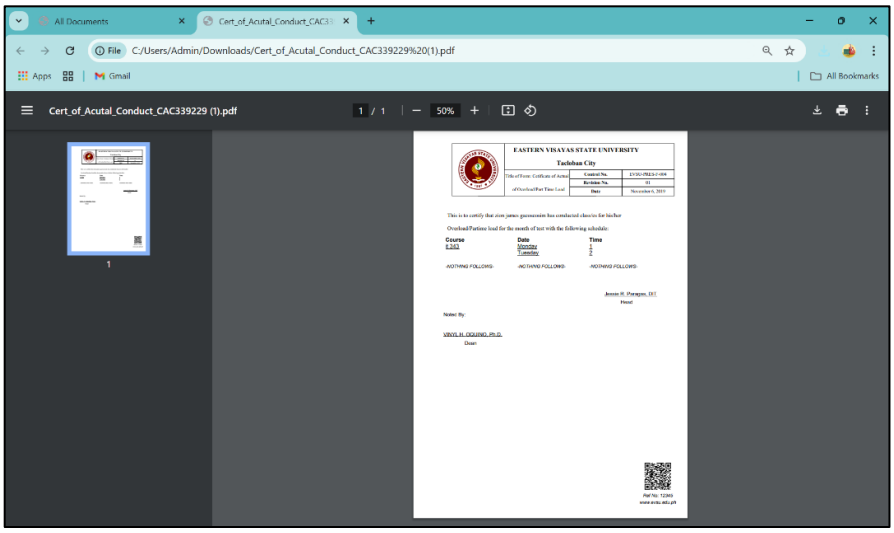
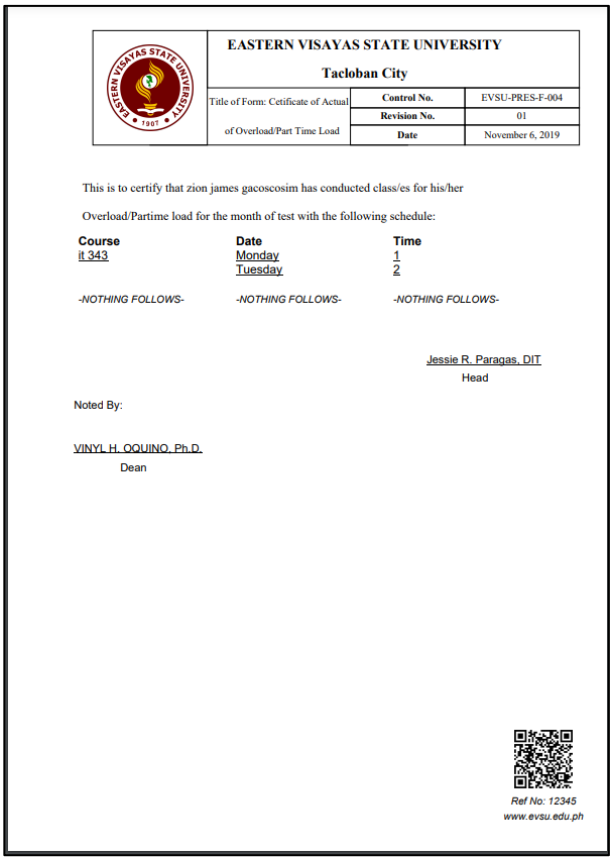


Figure 4-1. QR Code Integration

Digitizing Documents for Quick Retrieval and Filing

By automating the digitization process, the GD Function transforms paper documents into safe, organized digital representations. This guarantees that files may be retrieved quickly and accurately using filtering options or keyword searches. The DTS makes it possible to retrieve digital files instantly, in contrast to the traditional approach were doing so could take minutes or even hours because storage files had to be manually searched. By drastically cutting down on paper use, this feature lessens the need for physical storage, lowers the possibility of document loss or damage, and encourages ecologically friendly behavior.



EASTERN VISAYAS STATE UNIVERSITY

Tacloban City

Title of Form: Cetificate of Actual of Overload/Part Time Load	Control No.	EVSU-PRES-F-004
	Revision No.	01
	Date	November 6, 2019

This is to certify that zion james gacoscosim has conducted class/es for his/her

Overload/Partime load for the month of test with the following schedule:

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Jessie R. Paragas, DIT
Head

Noted By:

VINYL H. OQUINO, Ph.D.
Dean

Ref No: 12345
www.evsu.edu.ph

. **Figure 4-2**. Digitization

By significantly cutting down on the time and effort needed to track and recover documents, the Document Tracking System (DTS) with QR Code Technology and GD Function transforms

document management at Eastern Visayas State University (EVSU). Finding a document in the manual system usually required searching through physical logbooks and storage files, which may take several minutes or even hours, particularly when there were a lot of papers or records that were misfiled. On the other hand, by using a smartphone or other suitable device to scan a document's unique QR code, users can use the DTS to track a document's position and status in as little as three seconds. Users may now obtain vital information instantly thanks to this instant retrieval, which does away with the time-consuming and error-prone manual searching process.

Evaluation

To evaluate the performance of the Document Tracking System using QR code technology and digitization (DTS), the proponents conducted an evaluation with stakeholders in the College of Engineering offices at EVSU Tacloban City. This evaluation assessed the system's functionality, reliability, usability, efficiency, maintainability, and portability, utilizing the ISO 9126 criteria as a framework for evaluation. The insights gathered were systematically organized and analyzed, providing a comprehensive understanding of stakeholder experiences and perceptions. This qualitative approach aimed to yield valuable feedback on the effectiveness of in addressing the needs of the university community.

Table 4-1. Five-Point Likert Scale

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

Table 4-1 shows the five-point Likert scale, which was used to interpret the system evaluation's mean average into a qualitative description.

Evaluate the system using ISO/IEC 9126. This evaluation result assessed the system's functionality, dependability, usefulness, efficiency, maintainability, and portability by ISO/IEC 9126.

Table 4-2. ISO/IEC 9126 Evaluation Result

ISO Characteristics	Mean	Qualitative Description
Functionality	4.40	Strongly Agree
Reliability	4.52	Strongly Agree
Usability	4.71	Strongly Agree
Efficiency	4.50	Strongly Agree
Maintainability	4.57	Strongly Agree
Portability	4.45	Strongly Agree
OVERALL GRAND MEAN:	4.53	Strongly Agree

Table 4-2 shows the evaluation result, implies that the proponents met the specific objectives of the study.

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains the summary of the study, the conclusions based on the findings, and recommendations for future improvements. It highlights the effectiveness of the Document Tracking System using QR Code Technology with GD Function in addressing document management challenges at Eastern Visayas State University (EVSU) - College of Engineering.

Summary

The Document Tracking System using QR Code Technology with GD Function was developed to enhance document tracking, digitization, and archiving processes at EVSU. Traditional manual methods of managing documents, such as physical logbooks and paper-based systems, led to inefficiencies, delays, and difficulties in retrieving files. These challenges impeded the seamless operation of the Records Office and other departments handling large volumes of documents. The proposed system addresses these challenges by integrating QR Code Technology for real-time tracking and the GD Function for automatic document digitization and classification. The project followed the Agile development model, allowing for iterative improvements based on continuous stakeholder feedback. This ensured that the system was tailored to meet the needs of its end-users.

Quality assurance was performed using the ISO/IEC 9126 framework, which evaluates software on six dimensions. The system received high marks in functionality, reliability, usability, efficiency, maintainability, and portability, underscoring its capability to deliver its intended purpose effectively. The system's deployment significantly improved document tracking and storage, reduced manual tasks, and enhanced overall productivity for administrators, faculty, staff, and other stakeholders. The evaluation results confirm that the system successfully addressed the document

management issues at EVSU, providing a secure, reliable, and efficient solution that aligns with the institution's operational goals.

Conclusions

The proponents successfully developed and implemented the Document Tracking System using QR Code Technology with GD Function, achieving the following key outcomes:

The challenges associated with manual document management procedures at Eastern Visayas State University (EVSU) - College of Engineering have been effectively resolved by the deployment of the Document Tracking System (DTS) utilizing QR Code Technology with GD Function. Real-time document tracking is made possible by the system's integration of QR Code Technology, which gives users accurate and rapid access to document information. Delays and mistakes that were common in the old system are greatly decreased by this.

The GD Function's automatic document digitalization has changed the process of storing and retrieving files, guaranteeing speedy access to them while lowering the need for physical storage. By reducing the amount of paper used, this innovation not only increases efficiency but also encourages environmentally friendly habits.

The system's strong functionality, dependability, usability, efficiency, maintainability, and portability were proven by an evaluation of its performance using the ISO/IEC 9126 framework. The system's mean score of 4.53 indicates that it is a reliable and efficient solution that supports the operational objectives of the organization.

Overall, the DTS offers a cutting-edge, safe, and dependable document management solution that raises efficiency, accountability, and transparency. Its effective deployment shows how technology may revolutionize institutional processes and support the university's operational excellence goal.

Recommendations

For future researchers who will conduct this type of study and are seeking to enhance and advance the system, the recommendations listed below are provided:

1. Automated Notifications: Incorporate automated SMS and email notification features to alert users about important updates, such as document status changes, pending actions, or deadlines. This will improve communication and keep users informed in real-time.
2. Integrate Advanced Reporting and Analytics: Add reporting and analytics tools to generate insights into document trends, processing times, and workflow efficiency. These tools will support data-driven decision-making and allow administrators to identify areas for improvement.
3. It is recommended to use a framework in system development as it provides a structured and efficient approach, ensuring better code organization, security, scalability, and faster development compared to building applications from scratch.

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Appendix A

LETTER TO CLIENT

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

BAGONG PILIPINAS

June 21, 2024

VINYL H. OQUIÑO ,Ph.D
Dean of College of Engineering
Eastern Visayas State University
Tacloban City

Dear Sir OQUIÑO

We would like to request permission to conduct a survey in your good office regarding the document workflow, which will help us initiate our capstone project, titled "Document Tracking System Using QR Code Technology with Digitization." The purpose of this project is to enhance the efficiency of document management within Eastern Visayas State University Main Campus through the integration of QR code technology, digitization, and Generalized Data (GD) function for Image Processing.

Here are the key features of this capstone project:

1. **QR Code Integration**:
    - **Unique Identification**: Each document will be assigned a unique QR code, allowing for precise tracking and management.
    - **Easy Access**: QR codes enable quick access to digital versions of documents using smartphones or QR scanners.
2. **Digitization of Documents**:
    - **Paperless Environment**: Transitioning from paper-based documents to digital formats will reduce physical storage needs and enhance document security.
    - **Enhanced Searchability**: Digitized documents can be easily searched and retrieved using QR code.

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

BAGONG PILIPINAS

3. **GD (Generalized Data) Function for Image Processing:**

- **Image Creation and Manipulation:** GD functions will be used to create and manipulate image files in various formats including GIF, PNG, JPEG, WBMP, and XPM.
- **Advanced Image Handling:** This includes resizing, cropping, and applying various filters to ensure high-quality digital document images.
- **Format Versatility:** Support for multiple image formats allows for flexible integration and use in different applications.

We kindly request your approval to proceed for the survey and for the capstone project with your support in its implementation. We believe that this effort will significantly improve our document management processes, leading to increased efficiency and reliability.

Should you have any questions or require further information, please do not hesitate to contact us at 09563746243 or zionjames.gacoscosim@evsu.edu.ph

Sincerely yours,

Zion James P. Gacoscosim
Paulo S. Caperiña
Jenny Rose A. Delos Santos

Noted:

JUDE ALLAN A. URMENETA, MSIT
Capstone Project 1 Adviser

JESSIE B. PARAGAS, DIT
Head, Information Technology Department

VINYL H. OQUIÑO, PhD
Dean, College of Engineering

Appendix B

EVALUATION TOOL

SURVEY QUESTIONNAIRE

(BASED ON ISO 9126 SOFTWARE QUALITY STANDARD)

Title of System: Document Tracking using QR Code Technology with Digitization

Name: (Optional):		Date:	
Designation:			

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

FUNCTIONALITY	**Rating Scale**				
	1	2	3	4	5
1.The system provides effective tracking of documents from submission to approval.					
2. The documents retrieved or submitted are accurate, accessible, and complete.					
3. The system properly limits access according to user roles (e.g., administrators, faculty, staff).					
4. The system follows the established document management formats and practices used at EVSU's College of Engineering.					

RELIABILITY	Rating Scale				
	1	2	3	4	5
1. The system consistently performs well without frequent downtimes or interruptions, supporting efficient document tracking.					
2. Document tracking and status updates are reliable, accurately reflecting real-time data in the system.					
3. The system has a low occurrence of bugs or errors during usage.					

USABILITY	Rating Scale				
	1	2	3	4	5
1. The system interface is easy to use for tracking and managing documents.					
2. Learning to use the system was straightforward and simple.					
3. The system's layout and navigation are user-friendly and intuitive.					

EFFICIENCY	Rating Scale				
	1	2	3	4	5
1. The system efficiently handles document uploads, QR code scanning, and data processing.					
2. The system remains efficient with multiple simultaneous users.					
3. The system handles large document uploads or high data volumes effectively.					

MAINTAINABILITY	Rating Scale				
	1	2	3	4	5
1. The system can be easily updated or modified to accommodate new requirements.					
2. System issues or errors are promptly addressed and resolved.					
3. The system's documentation and user guides are clear and useful for troubleshooting.					

PORTABILITY	Rating Scale				
	1	2	3	4	5
1. The system works seamlessly on various devices (e.g., laptops, mobile phones) and across multiple platforms.					
2. The system's design adjusts effectively to different screen sizes, maintaining usability and readability across devices.					
3. System access and functionality are reliable regardless of the device or network environment being used.					

Appendix C

EVALUATION RESULT

FUNCTIONALITY	MEAN	QUALITATIVE DESCRPTION
1. The system provides effective tracking of documents from submission to approval.	4.50	Strongly Agree
2. The documents retrieved or submitted are accurate, accessible, and complete.	4.40	Strongly Agree
3. The system properly limits access according to user roles (e.g., administrators, faculty, staff).	4.45	Strongly Agree
4. The system follows the established document management formats and practices used at EVSU's College of Engineering.	4.25	Strongly Agree
GRAND MEAN	4.40	Strongly Agree

RELIABILITY	MEAN	QUALITATIVE DESCRPTION
1. The system consistently performs well without frequent downtimes or interruptions, supporting efficient document tracking.	4.50	Strongly Agree
2. Document tracking and status updates are reliable, accurately reflecting real-time data in the system.	4.60	Strongly Agree
3. The system has a low occurrence of bugs or errors during usage.	4.45	Strongly Agree
GRAND MEAN	4.52	Strongly Agree

EFFICIENCY	MEAN	QUALITATIVE DESCRPTION
1. The system efficiently handles document uploads, QR code scanning, and data processing.	4.50	Strongly Agree
2. The system remains efficient with multiple simultaneous users.	4.55	Strongly Agree
3. The system handles large document uploads or high data volumes effectively.	4.45	Strongly Agree
GRAND MEAN	450	Strongly Agree

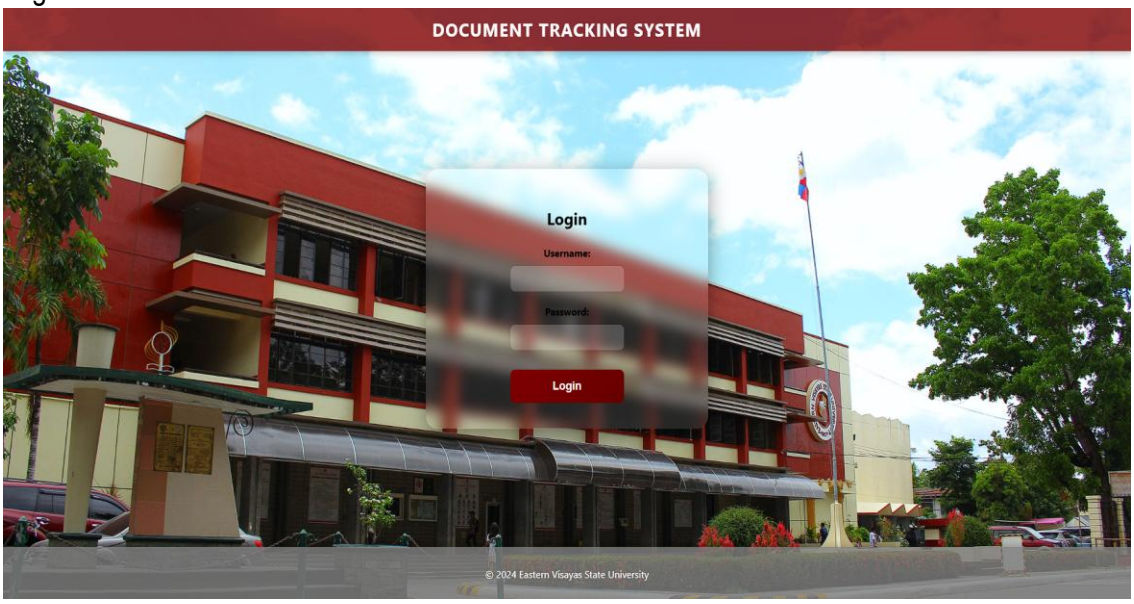
MAINTAINABILITY	MEAN	QUALITATIVE DESCRPTION
1. The system can be easily updated or modified to accommodate new requirements.	4.50	Strongly Agree
2. System issues or errors are promptly addressed and resolved.	4.55	Strongly Agree
3. The system's documentation and user guides are clear and useful for troubleshooting.	4.55	Strongly Agree
GRAND MEAN	4.47	Strongly Agree

PORTABILITY	MEAN	QUALITATIVE DESCRPTION
1. The system works seamlessly on various devices (e.g., laptops, mobile phones) and across multiple platforms.	4.50	Strongly Agree
2. The system's design adjusts effectively to different screen sizes, maintaining usability and readability across devices.	4.40	Strongly Agree
3. System access and functionality are reliable regardless of the device or network environment being used.	4.45	Strongly Agree
GRAND MEAN	4.45	Strongly Agree

Appendix D

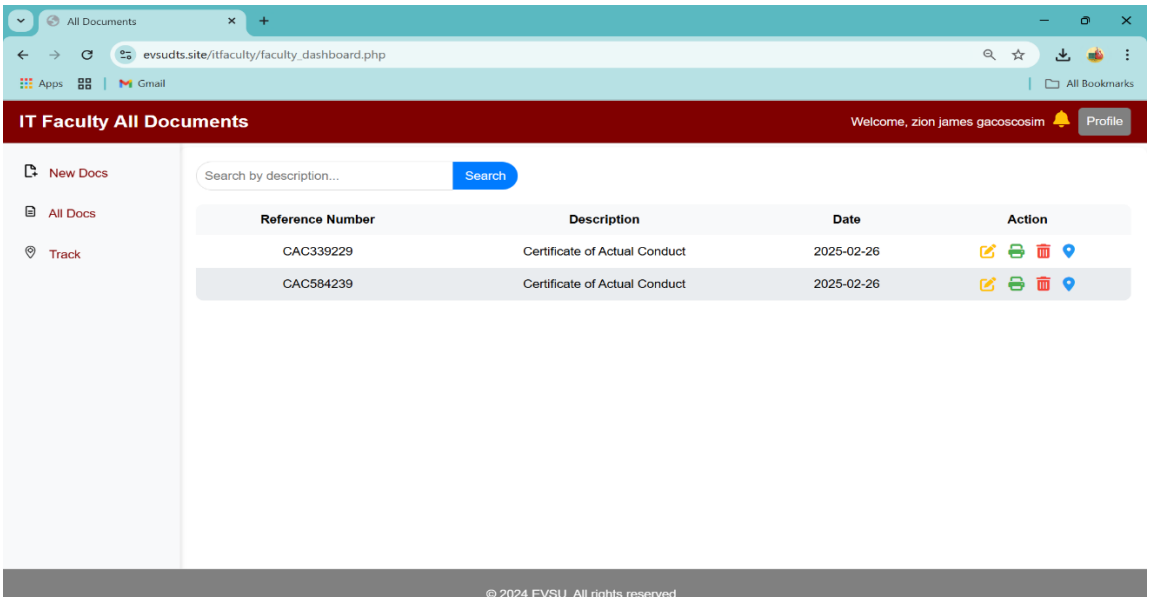
User Guide/Manual

Login



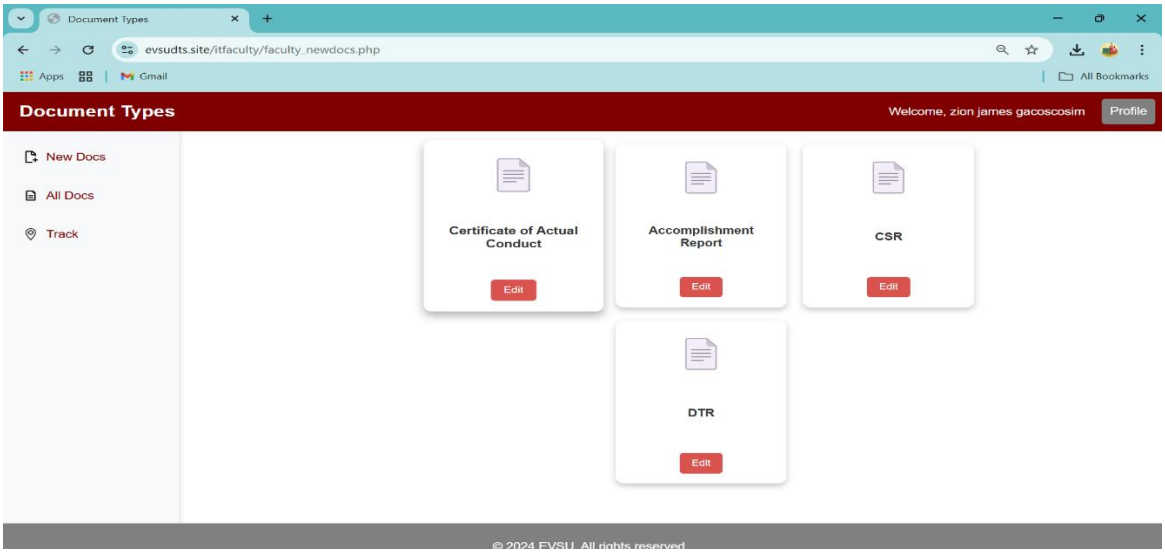
Input the assigned username and password.

Dashboard



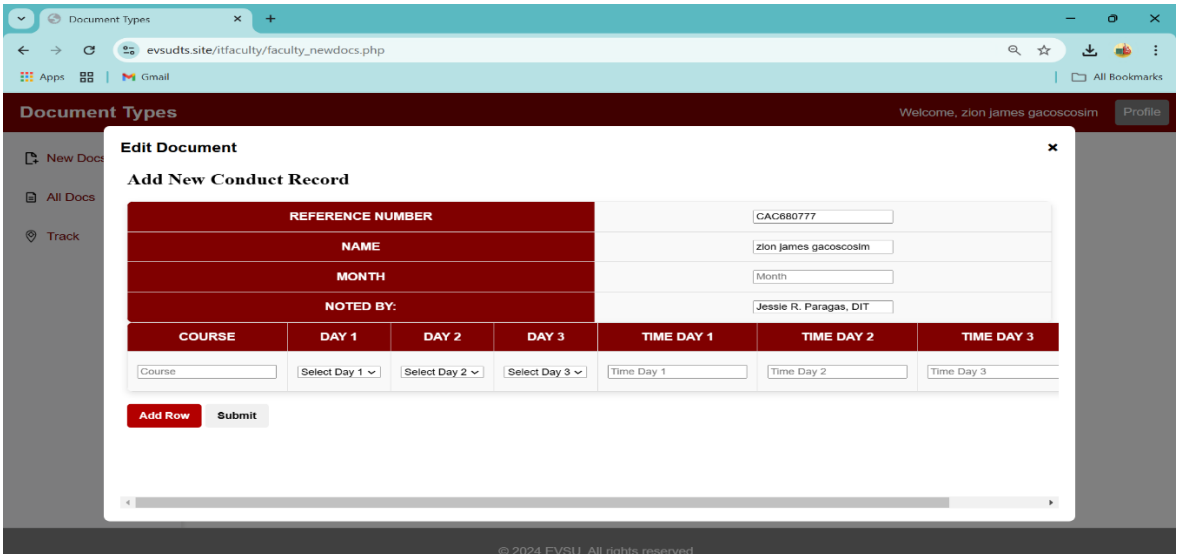
The user's dashboard is where they can see all the documents they have created.

New Docs



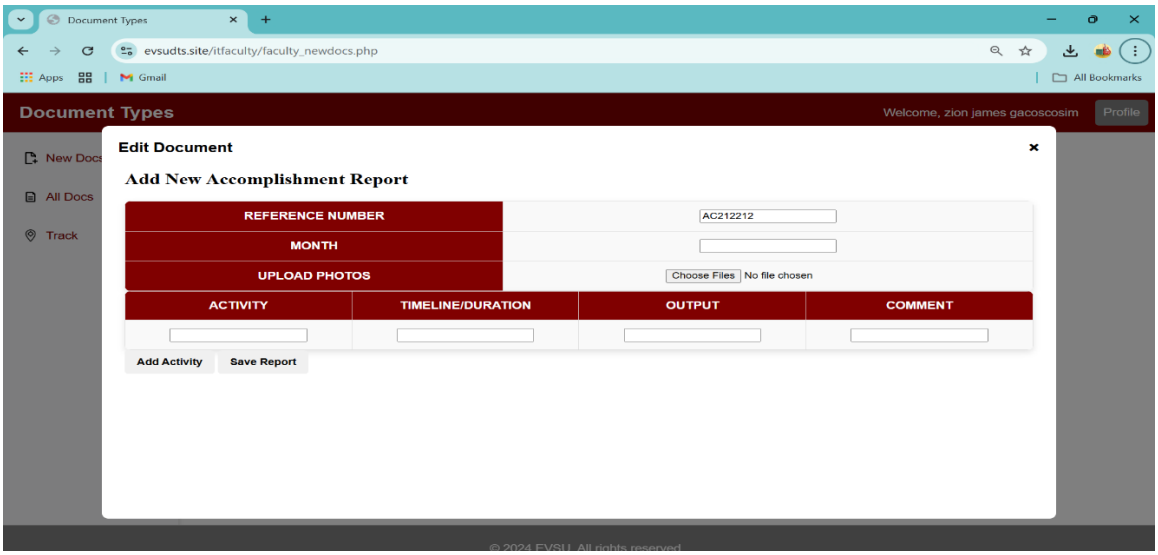
The New Docs section is where they can create the documents they need.

Certificate of Actual Conduct Form



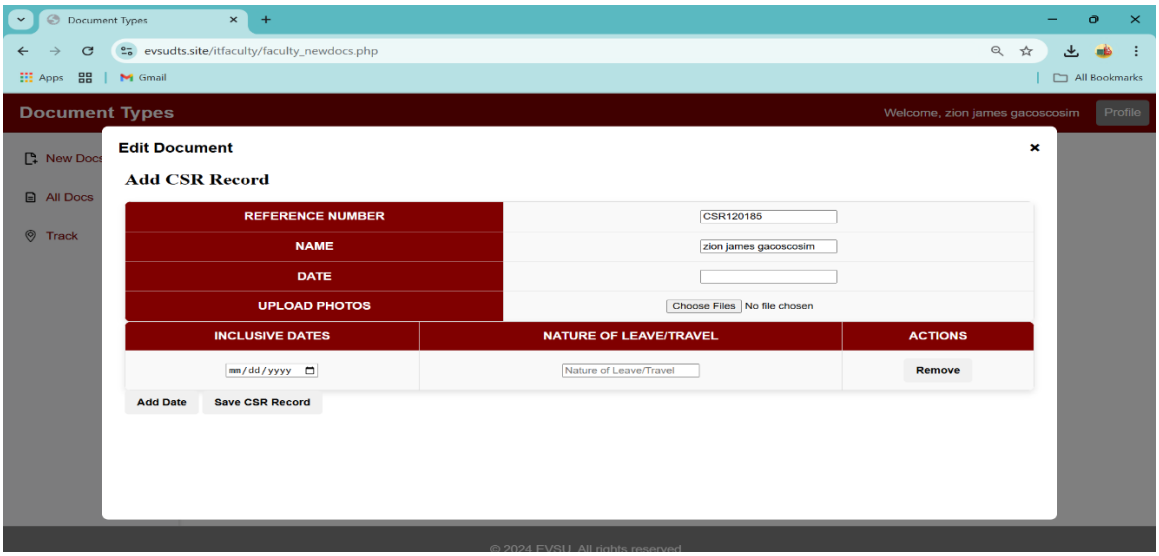
In this form, user' will input the needed to data to create the Actual of Conduct Certificate.

Accomplishment Report Form



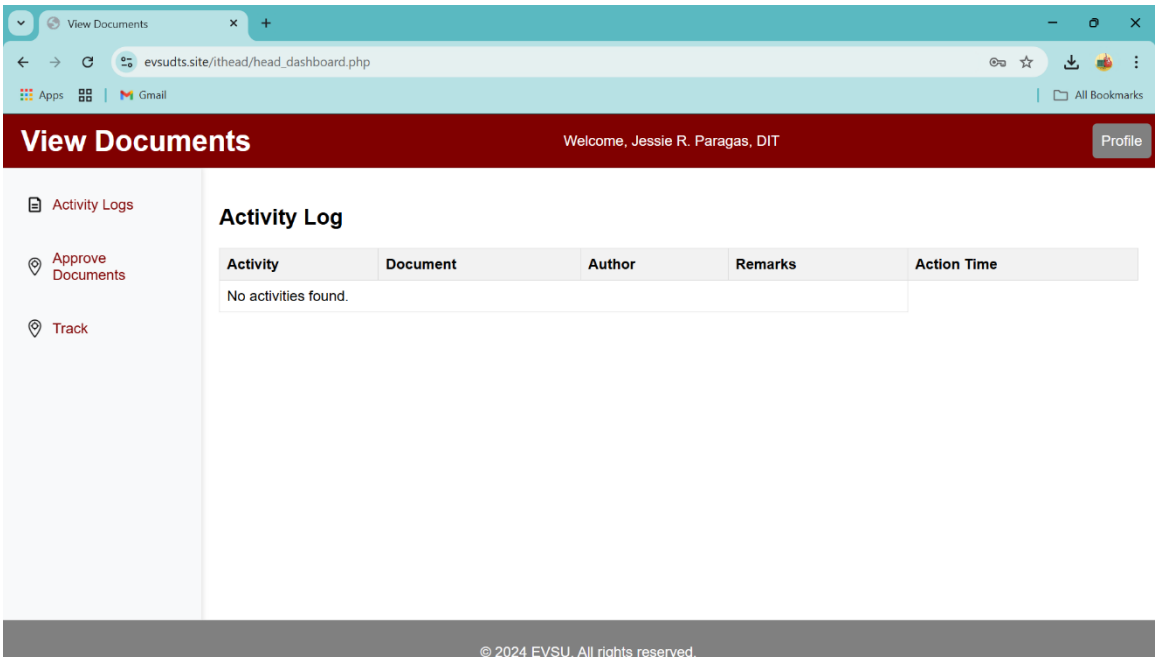
In this form, user' will input the needed to data to create the Accomplishment Report document.

CSR Form



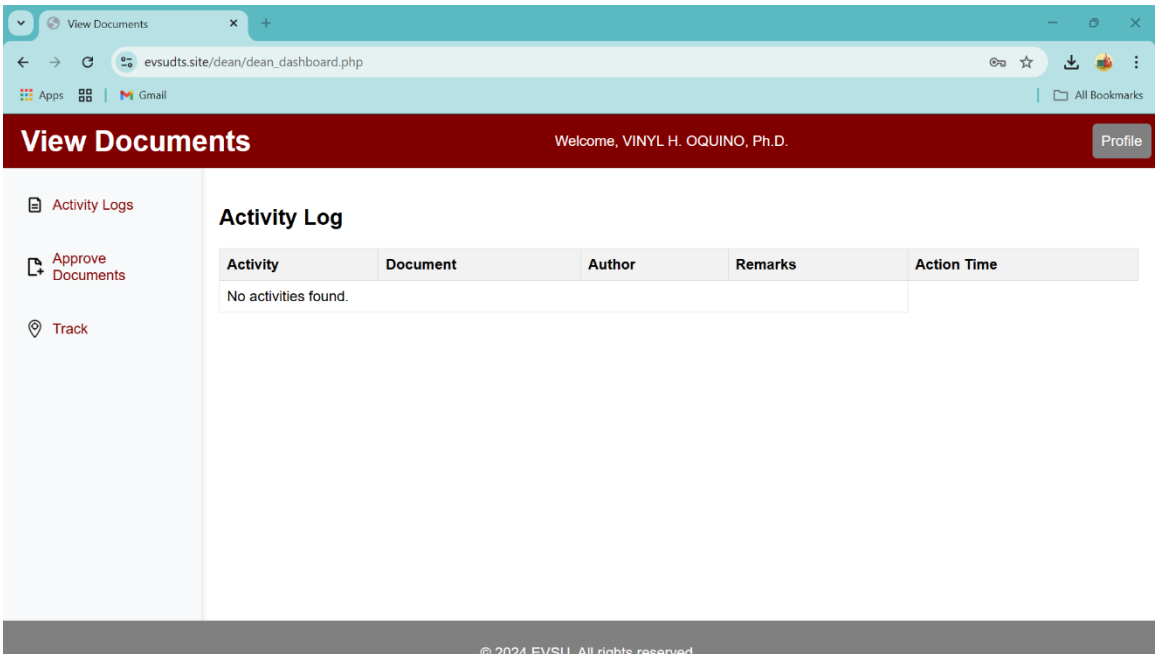
In this form, user' will input the needed to data to create the CSR document.

Faculty Head Dashboard



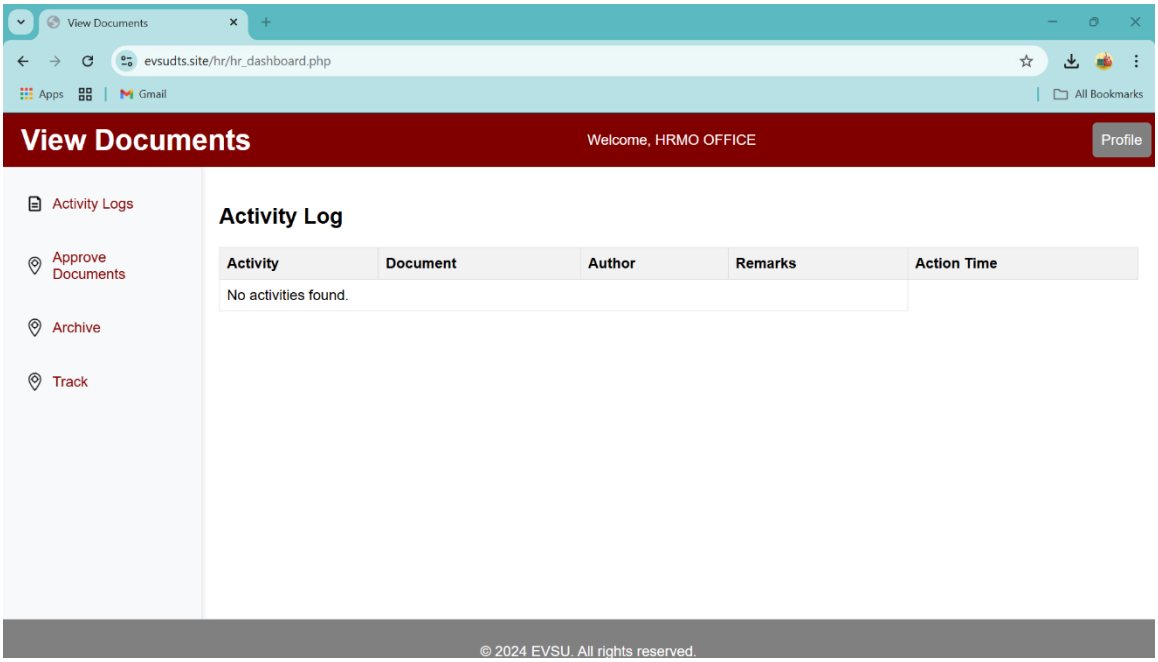
In this section the document created from the user will appear here after scanning the document. The faculty will change the status if approved or decline with a remark.

Dean Dashboard



In this section the document from the faculty Head will appear here after scanning the document. The Dean account will change the status if approved or decline.

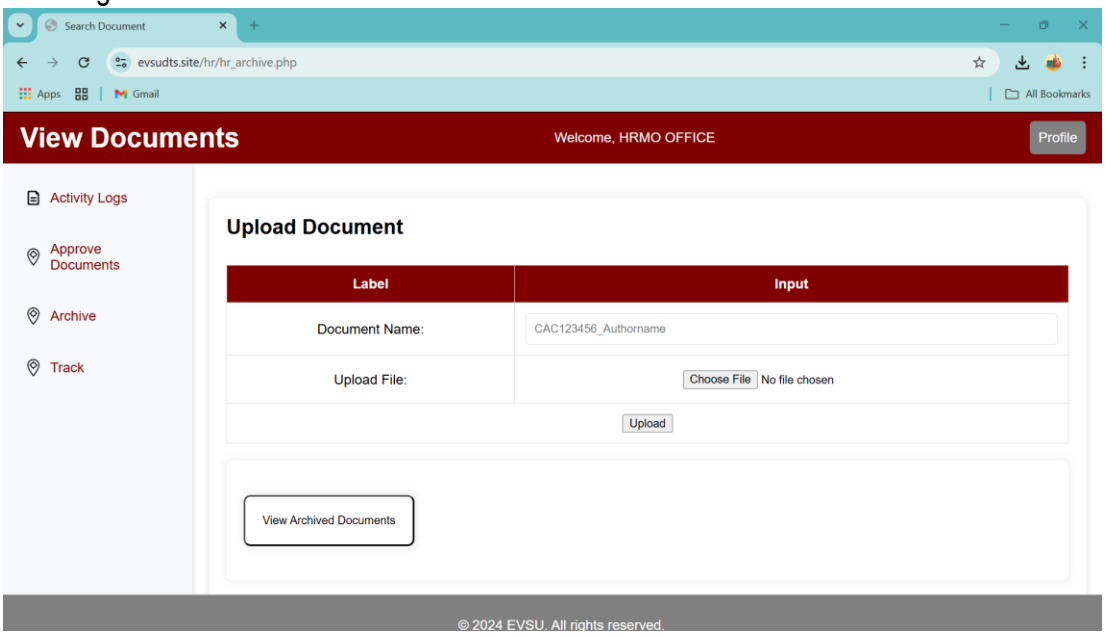
HR Dashboard



In this section the document from the dean will appear here after scanning the document.

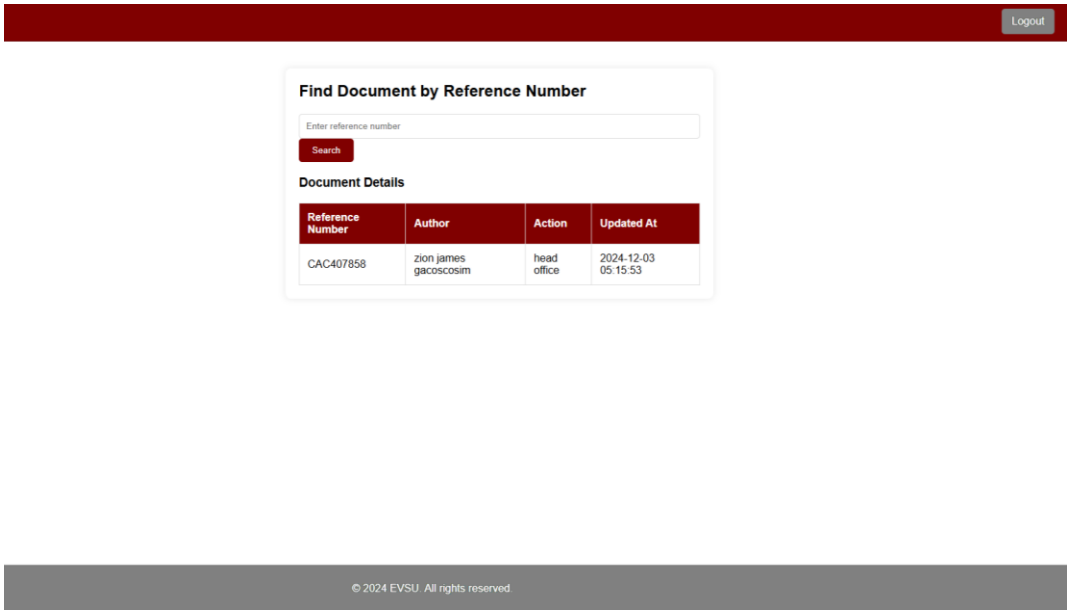
The HR account will change the status if approved or decline.

Archiving Section

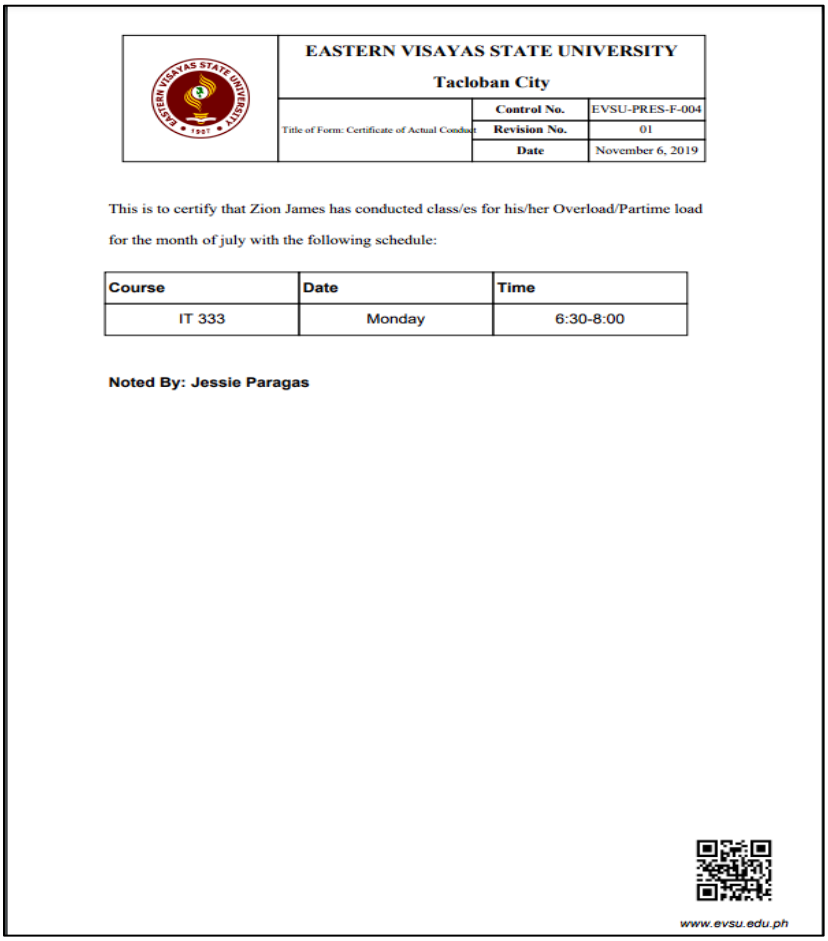


This is the archiving section where the finished document is stored in a maximum duration of 5 years.

Track



The 'Track' section is where you can monitor the status and location of the document.



EASTERN VISAYAS STATE UNIVERSITY
Tacloban City

Title of Form: Certificate of Actual Conduct	Control No.	EVSU-PRES-F-004
	Revision No.	01
	Date	November 6, 2019

This is to certify that Zion James has conducted class/es for his/her Overload/Partime load for the month of july with the following schedule:

Course	Date	Time
IT 333	Monday	6:30-8:00

Noted By: Jessie Paragas

www.evsu.edu.ph

APPENDIX E

TURNITIN CERTIFICATE

Republic of the Philippines
EASTERN VISAYAS STATE UNIVERSITY
Tacloban City

INFORMATION TECHNOLOGY DEPARTMENT

Certificate of Similarity Index

This is to certify that the Capstone Project entitled:

Document Tracking using QR Code technology with Digitization

authored by:

Gacoscosim, Zion James P.
Caperiña, Paulo S.
Delo Santos, Jenny Rose A.

Bachelor of Science in Information Technology
has been subjected to similarity check on <date>
with a generated Similarity Index of **9%**

Certified true and correct:

Jude Allan A. Urmeneta, MSIT
Capstone Project Adviser

Noted:

Lyra K. Nuevas, PhD
Capstone Project Instructor

CURRICULUM VITAE

PAULO S. CAPERIÑA

Address: Brgy. Guintuiguin-an Babatngon Leyte

Contact No. 09525825985

E-mail Address: paulo.caperina@evsu.edu.ph

PERSONAL DATA

Birthdate: June 26, 2001 Age: 23

Sex: Male Religion: Born Again Christian

Civil Status: Single

SKILLS

- HTML CSS
- PHP
- JAVA

EDUCATIONAL BACKGROUND

TERTIARY	Eastern Visayas State University
	Tacloban City
	Bachelor Of Science in Information Technology
SECONDARY	Leyte National High School
	Tacloban City
PRIMARY	Kapangian Central School
	Babatngon Leyte

CURRICULUM VITAE

ZION JAMES P. GACOSCOSIM

Address: Lastrilla St. Jaro Leyte

Contact No. 09563746243

E-mail Address: zionjames.gacoscosim@evsu.edu.ph

PERSONAL DATA

Birthdate: September 6, 1997 Age: 27

Sex: Male Religion: Roman Catholic

Civil Status: Single

SKILLS

- HTML CSS
- PHP
- DJANGO
- JAVA

EDUCATIONAL BACKGROUND

TERTIARY Eastern Visayas State University

Tacloban City

Bachelor Of Science in Information Technology

SECONDARY Notre Dame High School

Jaro, leytes

PRIMARY Jaro I Central School

Jaro, Leyte

CURRICULUM VITAE

JENNY ROSE A. DELOS SANTOS

Address: Tutubigan Paranas Samar

Contact No. 09950032338

E-mail Address: jennyrose.delossantos@evsu.edu.ph

PERSONAL DATA

Birthdate: August 8, 2002 Age: 22

Sex: Female Religion: Roman Catholic

Civil Status: Single

SKILLS

- PHP
- PHOTOSHOP

EDUCATIONAL BACKGROUND

TERTIARY	Eastern Visayas State University
	Tacloban City
	Bachelor of Science in Information Technology
SECONDARY	Casandig National High School
	Paranas Samar
PRIMARY	Tutubigan Elementary School
	Paranas Samar