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COLLEGE OF COMPUTING AND INFORMATION SCIENCES

ABSTRACT

TITLE:

ONLINE REQUEST OF CREDENTIALS FOR SAINT MICHAEL COLLEGE OF CARAGA

AUTHOR:

Ricel Ada S. Villarin, Angel Mae L. Baguio, Jay A. Bongado, Angelo M. Hinautan, Rom Jones Y. Salem

DEGREE:

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ADVISER:

Jessie S. Mahinay

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DEVELOPMENTAL RESEARCH

I. OBJECTIVES[1]

This study aims to design, develop, and implement a web-based system titled Online Request for Credentials System for the Registrar's Office of Saint Michael College of Caraga. The primary objectives of the project are to streamline the credential request process by allowing students and alumni to submit and track their requests online; to integrate a tracking feature that enables real-time monitoring of request statuses by both users and key personnel such as the Cashier, Head of the LRC, Dean/Principal, and Registrar Staff; and to establish a secure validation process for uploaded identification documents to ensure the authenticity of each request. This system is designed to minimize manual workload, reduce processing time, and enhance academic service delivery's efficiency, transparency, and reliability.

II. METHODOLOGY

The study adopts the Software Development Life Cycle (SDLC) as the primary methodology, specifically utilizing the Waterfall Model to guide each development phase in a linear and structured manner. The process begins with Requirements Gathering, where the researchers conducted interviews and observations with the SMCC Registrar's Office to identify the current challenges in processing credential requests. In the System Design phase, the layout, user interface, and system architecture were planned to ensure user-friendliness and functionality. The Development phase involved coding and system implementation using modern web development technologies. Once developed, the system underwent Testing to identify and correct bugs and validate system features such as online request submission, tracking, and document validation. In the final Deployment phase, the system was launched within a controlled environment in the Registrar's Office to evaluate real-world usability and performance. Feedback was collected for future enhancements.

III. FINDINGS

The Online Request of Credentials System received high ratings across functional suitability, performance efficiency, and usability based on ISO 25010 standards. It earned a total weighted mean of 3.60 in functionality, 3.57 in performance efficiency, and 3.67 in usability, classified as "Very Functional," "Very Efficient," and "Very Usable," respectively. These results confirm the system's effectiveness, reliability, and user-friendliness, with participants recognizing its precision, speed, and intuitive design. Continuous enhancements are recommended to ensure adaptability and maintain high standards.

IV. RECOMMENDATIONS

To enhance the system's effectiveness, future efforts should focus on expanding user access for scalability, integrating advanced data validation and security features, improving the real-time tracking interface, offering user training for seamless navigation, and incorporating analytics for monitoring request trends. These improvements would further strengthen efficiency, reliability, and user satisfaction in processing academic credentials.

KEYWORDS: Online Credential Request, Web-Based System, Real-Time Tracking, System Usability, Functional Suitability

DEDICATION

This capstone research is dedicated with heartfelt appreciation to all individuals who played a meaningful role in the journey and success of this endeavor.

To the families of the researchers, sincere gratitude is extended for their unwavering love, patience, and support. Their constant encouragement and understanding served as a source of strength and inspiration, especially during the most challenging phases of this academic pursuit.

To Mr. Jessie S. Mahinay, the project adviser, the researchers express deep appreciation for his guidance, patience, and insightful contributions. His constructive feedback and steadfast support were crucial in shaping the direction and outcomes of this study. His commitment has greatly influenced the academic growth and confidence of the researchers as emerging professionals.

This project is also the result of collective effort, determination, and collaboration among the research team members. Every contribution, whether large or small, played a vital role in the successful development of a system designed to enhance the institution's academic services and support the needs of the Michaelinian community.

The completion of this capstone research would not have been possible without those who provided support throughout the journey. Their presence and encouragement are deeply appreciated.

ACKNOWLEDGEMENTS

Foremost, the researchers extend their deepest gratitude and praise to Almighty God for His unwavering guidance, wisdom, and strength throughout this capstone project. Through His grace, the completion of this work was made possible, enabling the team to overcome challenges and persevere.

Sincere appreciation is extended to Mr. Jessie S. Mahinay for his outstanding mentorship and continuous support as the project adviser. His expertise, insightful feedback, and encouragement played a vital role in shaping the direction and outcome of this study.

The researchers also thank the instructors and committee members for their valuable input and constructive suggestions. Their guidance significantly contributed to the enhancement of the project's quality.

Gratitude is expressed to the researchers' families for their unwavering love, understanding, and emotional and financial support. Their encouragement was a constant motivation and strength throughout this academic journey.

Acknowledgement is also given to the Tertiary Education Subsidy for the financial assistance provided, which allowed the researchers to focus entirely on their academic responsibilities without added burden.

Special thanks are due to friends, fellow students, and mentors whose advice, support, and encouragement greatly contributed to the progress and completion of this work. Their involvement, whether direct or indirect, is sincerely appreciated.

Lastly, the researchers express heartfelt thanks to all individuals who offered support in any form. Every contribution, regardless of scale, made a meaningful impact on the successful realization of this capstone project.

CHAPTER 1

INTRODUCTION

Project Context

The Office of the Registrar aids students, faculty, staff, and alumni in various academic tasks, such as overseeing academic policies and procedures, managing student records, facilitating student registration, handling transcripts, coordinating course scheduling, providing commencement services, performing degree audits, offering assessment and reporting, and ensuring institutional compliance. The SMCC Registrar's Office continues to process requests for academic credentials; however, it has become increasingly burdensome for the staff, mainly because of the time-consuming manual processing and the high volume of requests they manage. As the number of credential requests grows, the risk of errors and delays also increases, further restraining the resources available.

According to Devikah et al., educational institutions frequently must provide academic transcripts and certificates upon student request, as these documents are essential for applying to new programs and job placements. Doing this manually can be time-consuming and require much work [1]. Also, fulfilling requests on the agency side can be just as frustrating as asking for them on the constituent side [2].

In today's digital era, technological advancements are essential in shaping credential management, as mentioned by I. E. Khairuddin et al. [3]. Additionally, K. I. R. Abang et al. stated that in any bustling institution, it is essential that each accomplished student's request be prompt and efficient [4]. To cope with these challenges, they need to grab the opportunities that technology can offer and test innovations that are not only in response to the global threat challenges but also to the future [5]. Thus, making a system that provides an online requisition of credentials is wiser. In this case, embracing more effective

methods in today's advancing technological landscape can aid in maintaining organization and improving productivity [4].

Throughout the years, manual credential requests have been carried out across most educational institutions, specifically at the Office of the Registrar in Saint Michael College of Caraga. The current system for requesting academic credentials at SMCC heavily relies on manual methods. Students and alumni must submit requests in person or through physical forms, leading to inefficiencies and delays in processing.

To address the issue of inefficient and cumbersome credential requests at the SMCC Registrar, an essential solution is to create a web-based system that simplifies the process of requesting academic credentials. This system can facilitate the quick and secure issuance of credentials in the Registrar's office. Students and alumni could submit requests electronically, track their Status in real time, and experience reduced wait times and increased transparency. The online platform would automate much of the manual processing for administrative staff, reducing paperwork and streamlining workflow. Thus, it makes processes more accessible and convenient for everyone.

The SMCC registrar needs to implement and optimize the online request system to address existing problems in the institution. Implementing an online request system can significantly enhance the efficiency and effectiveness of administrative processes within educational institutions. The system automates the request management process, making tracking and fulfilling requests more streamlined. This transition from a paper-based system to a digital platform not only improves accessibility for students but also fosters a more organized and transparent workflow for administrative staff.

1.2 Objective of the Study

The researchers' study aims to design, develop, and implement an Online Request for Credentials for Saint Michael College of Caraga.

Specifically, it aims to:

1. Generate comprehensive reports on request volumes and processing times for transparency and ongoing process improvements.
2. Develop a tracking feature that enables users to monitor the real-time status of their credential requests while allowing key personnel, such as the Cashier, Head of the LRC, Dean/Principal, and Registrar Staff, to review and confirm requests with incomplete or pending requirements for clearance purposes.
3. Establish a validation process for verifying the validity of the uploaded identification document.

1.3 Scope and Limitations

The Online Request of Credentials System was specifically designed for Saint Michael College of Caraga. The system accommodated a single administrator account (Head of the Registrar's Office), along with designated key personnel, including the Cashier, Head of the LRC, Dean/Principal, and Registrar Staff, all authorized staff members. The admin had full access to all system features, including viewing and verifying the entire process. At the same time, the key personnel verified the requirements for credential requests.

The capstone project did not support credential requests from institutions outside the project. The daily request processing limit was set at 10, deferring additional requests to the following day. Although it incorporated necessary

security features, the system did not include a detailed review or update of institutional data protection practices. Limitations also included specific software and hardware requirements, such as adequate RAM, processor capability, storage, and compatibility with modern web browsers and development platforms. Furthermore, the system's functionality was restricted to processing credential requests, excluding other administrative tasks.

1.4 Definition of Terms

The terms defined below explain the basic concepts and factors discussed during the conceptualization and development of the Online Request of Credentials System and provide contextual information on how the researchers applied these concepts in their study.

Access Control – Mechanisms within the Online Request of Credentials System that regulate who can view, modify, or manage different aspects of the system, ensuring that only authorized personnel have access to sensitive functions and data.

Admin – A user role within the Online Request of Credentials System with comprehensive access to all system features. The admin can view, verify, and manage all aspects of the credential request process, including user management.

Request Tracking — This feature within the Online Request of Credentials System allows users to monitor the status of their credential requests in real time, including progress updates and estimated completion times.

User Validation – This ensures that user inputs are accurate, secure, and complete before processing any request. In ORCSMCC, it includes validating the essential information provided by end-users during the sign-up and log-in processes.

Web-Based System – A platform accessible through internet browsers, enabling users to interact with the system remotely without installing specific software.

Workflow Automation – The use of automated processes within the Online Request of Credentials System to handle repetitive tasks, such as routing requests and updating status, thereby improving efficiency.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter shows the literature related to the researchers' study to address the existing problems encountered. It focuses on the need to implement the researchers' proposed software application, its benefits, and the issues it addresses. The literature comes from electronic materials, e-books, websites, articles, and journals.

Efficiency and Transparency in Credential Request Systems

The shift towards digitizing administrative processes in educational institutions has led to the development of online credential request systems, enhancing the issuance, verification, and management of academic credentials. These systems address the inefficiencies of manual processes, offering improved accuracy and speed. However, they also bring challenges related to data security, system compatibility, and user privacy.

The advancements in online credential request systems have transformed how credentials are created, managed, and verified, enhancing trust and efficiency in various sectors. These systems facilitate the issuance of digital credentials, allowing for interoperability and recognition across borders, which is crucial in a globalized job market [6].

According to K. I. R. Abang et al., the transition from manual to online credential request systems in higher education has notably reduced administrative bottlenecks. For instance, the City College of Tagaytay (CCT) implemented an online credential request system during the pandemic, providing a safer, faster, and more efficient solution for students and administrators [4]. However, M. Chase et al. emphasized that challenges such as ensuring data trustworthiness, managing user privacy, and maintaining usability persist [7], and institutions must address issues related to data security, particularly when handling sensitive information, to prevent potential breaches [8]. Furthermore, G.W. Matkin also concluded that institutions must adapt to these changes, balancing the needs of students and employers while navigating the complexities of digital credentialing [9].

A similar system was developed by Alegado et al. for NUEST, where they introduced a web-based chat box request system to facilitate online document requests. Built using web technologies like HTML, CSS, PHP, and MySQL, this system simplified the request process, reducing the time and effort required for both the user and staff. It garnered positive feedback, with experts and users rating its effectiveness highly [10]. Despite these advantages, the issue of data privacy and security remains crucial, particularly given the increasing dependence on digital platforms in educational settings.

Heather Flanagan's insight on digital identity systems underscores the importance of security in such platforms. Flanagan notes that while digital credentials open opportunities for innovation and efficiency, they also come with inherent risks. Addressing the risks involves implementing comprehensive security and privacy that balance the needs of various stakeholders [11]. Also, ensuring user data privacy during verification processes is crucial, as systems must balance transparency with confidentiality [12]. This highlights the need

for similar security protocols in the online credential request system to protect sensitive student information and comply with evolving digital identity standards [11].

I. Keck et al.'s study further discusses the technical challenges, such as system incompatibilities and the need for specialized personnel to manage the transitions. Their study emphasizes the importance of ensuring that such systems are user-friendly. They propose a framework for evaluating credential systems' effectiveness and ensuring their sustainability in the long term [13].

Rassameeroj et al. explored the impact of online systems on reducing errors and enhancing accuracy in credential processing. They found that automated systems significantly reduced manual errors in document handling and data entry, leading to faster and more reliable services for students. However, they also raised concerns about system downtimes and the need for continuous software updates to maintain reliability [14].

The literature reflects a consensus on the potential benefits of online credential request systems, particularly regarding efficiency, accuracy, and accessibility. However, as Mishra R. et al. noted, these systems also require ongoing investment in infrastructure, security, and training to meet the evolving needs of both institutions and users. Moreover, the study emphasized the importance of ensuring data protection compliance [15].

While online credential request systems offer significant benefits to higher education institutions, including faster processing times and enhanced accuracy, their implementation requires careful consideration of technical, security, and operational challenges. The transition from manual to online systems represents a paradigm shift that can improve academic institutions' overall efficiency. Still, regular updates, proper staff training, and stringent data security measures must accompany it.

Credential Request Processes Through Automation and Real-Time Tracking

The transition to digitized credential request and approval processes has revolutionized administrative workflows in educational and professional institutions. These systems offer increased efficiency, accessibility, and security, enabling users to request, process, and verify credentials seamlessly. It highlights the critical verification steps, eligibility assessment, and the authorities' role in ensuring compliance with institutional standards. The process typically involves multiple steps, including documentation review, verification of qualifications, and recommendations from authorized personnel. According to Gaikwad et al., institutions are moving towards digitizing the credential request systems to streamline administrative processes, thereby increasing convenience for students and alumni. Online platforms allow users to submit requests for academic documents, such as transcripts and certificates, at any time and location, significantly reducing barriers [16]. Gune et al. explained that the approval process for credential requests involves several key steps and methodologies that ensure efficiency and security. Initially, a request is submitted and categorized based on type to determine the appropriate approver. This is facilitated by systems that utilize visual representations of approval elements, allowing users to define their processes effectively [17]. Chiahsin et al. also stated that credential verification may involve multiple service providers, ensuring that the requested credentials are validated securely [18].

Integrating digital certificates and facial recognition technology can streamline verification, reduce administrative burdens, and enhance security against counterfeiting [19]. Furthermore, non-fungible tokens (NFTs) and blockchain technology provide a decentralized, secure method for issuing and validating academic credentials, ensuring compliance with regulations like GDPR [20].

Blockchain solutions can accelerate verification processes by approximately 8% while maintaining data integrity [21]. Countries like China and the U.S. offer valuable insights into competency validation, which can be adapted to improve systems in other regions [22]. Lastly, a design thinking approach to distributed ledger technology can revolutionize credential verification, ensuring transparency and fraud prevention [23].

A web-based system can streamline the approval request process, making it more efficient. While these systems enhance the approval process, challenges such as manual errors and inefficiencies in traditional methods persist, highlighting the need for continuous improvement in approval workflows.

Validation of Uploaded Documents through Admin Review in Online Credential Systems

Document validation is a crucial element in online credential systems. Effective document verification processes ensure that uploaded documents, such as identification cards and receipts, adhere to institutional requirements, safeguarding the integrity and security of transactions. As the rapid development of information sharing and exchange continues, an increasing number of businesses and individual users are adopting digital documents due to their convenience and efficiency [24]. However, while digital documents simplify accessibility, verifying their authenticity remains a significant challenge [25].

The implication arising from the problem of fake documentation is that it is causing serious and alarming impacts and needs to be urgently considered. This technological revolution, while enabling greater flexibility in document handling, has also introduced vulnerabilities. Validating documents remains laborious and time-consuming, further exacerbating concerns about fraudulent documents [26]. The implications of counterfeit documents are severe, posing

risks to security, institutional trust, and transactional integrity. Addressing this issue requires immediate attention and adopting modern, robust methods for issuing and verifying significant documents to safeguard against potential misuse [27].

According to Hamidi, H., inaccurate verification methods can lead to significant security vulnerabilities, allowing unauthorized access to sensitive information and systems. High error rates in scanned identity verification may increase susceptibility to identity theft and other fraudulent activities, underscoring the necessity of precise assessments [28]. However, C. Avram et al. stated that using uploaded IDs and documents for validation enhances security. This process helps reduce identity theft and unauthorized access to sensitive information, creating a safer online environment [29]. Using copies of official documents, such as birth certificates or government IDs, allows organizations to validate users' identities effectively [30].

According to Alsulaiman, A., utilizing user-centric design in credential verification also indirectly supports security. When users find the design intuitive, they are less likely to make errors that could compromise their credentials during the verification process. User-friendly interfaces can guide individuals through complex security steps, ensuring that security protocols are followed without frustrating users [31]. Additionally, the studies of C. Avram et al. and M. Schmitt et al. also stated that uploaded ID validation simplifies the user experience by allowing for quick and easy verification. Users can upload their identification documents directly from their mobile devices, which minimizes the time spent manually entering data. This convenience increases user satisfaction rates as the process becomes hassle-free and efficient [29], [32].

The validation of identification documents, through optimized admin review and advanced technological solutions, is vital for securing online credential systems. Institutions can effectively address challenges like fraudulent documentation and enhance overall system reliability by leveraging robust verification methods, user-centric designs, and emerging technologies. These advancements protect sensitive information and foster user trust and satisfaction, paving the way for more efficient and secure digital transactions in the future.

CHAPTER 3

SOFTWARE REQUIREMENTS AND DESIGN SPECIFICATION

3.1 System Architecture

This chapter presents a detailed analysis of the technical components in designing and developing the proposed system, including software and hardware requirements specifications. Additionally, it provides a thorough overview of the functionality of the Online Request for Credentials System (ORCS).

Figure 1. System Architecture

Figure 1 illustrates the fundamental process of the Online Request of Credentials System (ORCS). This system facilitates user interaction among various roles, including the administrator (Head of the Registrar's Office), users (Registrar Staff, Cashier, Head of the LRC, and Dean/Principal), as well as students and alumni, all of whom can access the platform via the Internet. End-users must create an account to use the leading platform. The Cashier, Head of the LRC, Dean/Principal, and Registrar Staff review student requests seeking credentials by checking their backgrounds and approving clearance. Meanwhile, the administrator manages credential requests by validating user requirements and ensuring all necessary approvals are in place.

3.2 Conceptual Diagram

Figure 2. Conceptual Diagram (DFD Level 0)

Figure 2 illustrates the operational capabilities assigned to different users within the ORCS architecture. The admin has the authority to review and manage the credential requests submitted by students and alumni. Additionally, they can perform functions such as validating requirements. Conversely, the Cashier and other offices are responsible for maintaining a list of individuals who have requested credentials and their associated duties within the ORCS.

Figure 3. Use Case Diagram

Figure 3 outlines the key features available to each type of user and their roles within the system. The administrator is responsible for validating user requirements and creating accounts for system users such as the Cashier, Head of the LRC, Dean/Principal, and Registrar Staff, as they do not have self-registration privileges. Students and alumni must create an account before logging in and are responsible for completing their request forms. The Registrar Staff manages the approval and release of the requested documents. The system also generates a schedule for issuing credentials, with appointments available from Monday to Friday. The Cashier is responsible for verifying clearance and payment for the requested credentials. Similarly, the Head of the LRC and the Dean/Principal are tasked with reviewing and confirming requests that have incomplete or pending requirements for clearance purposes.

3.4 Activity Diagram

Figure 4. Activity Diagram – Students/Alumni

Figure 4 illustrates the series of activities available to students within the system. It begins with the login page. If a user does not have an account, they can create one before returning to the login interface. Once logged in successfully, students and alumni are directed to the ORCS homepage, where they can view and select various forms, including the student/alumni request form, requirements form, and release schedule form (note that only students from SMCC are eligible for the release schedule form). Additionally, users can log out of their accounts from this page.

Figure 5. Activity Diagram - Admin

Figure 5 illustrates the system's administrative functions. After a successful login, the administrator gains access to the dashboard, which provides an overview of key metrics, including the number of users, students, pending requests, and completed requests. The administrator manages user and student accounts, configures the payment account, adds departments and document types, and validates or views user requirements. These functions allow the administrator to maintain and oversee the overall operation of the system efficiently.

Figure 6. Activity Diagram – Head of LRC/Dean and Principal

Figure 6 illustrates the series of activities available to the user. If a user does not have an account, they cannot access the homepage on the login page. The administrator can register accounts for the Head of the LRC, the Principal, and the Deans. Once logged in successfully, the user's capabilities are limited to viewing and managing the list of individuals who have filled out the form. This includes checking backgrounds, approving clearances, and adding comments if the students have not completed the clearance requirements.

Figure 7 illustrates the series of activities available to users, focusing on the cashier's role within the system. On the login page, a user without an account cannot proceed to the homepage or access the system, as only the administrator has the authority to create accounts for personnel such as the cashier. Once successfully logged in, the cashier can approve or disapprove clearance requests. If a request is disapproved, the cashier can provide comments, particularly if the requester has an outstanding balance. The cashier is also responsible for validating student payments during the payment verification. After validation, the cashier uploads the official receipt to confirm that the user has completed the payment.

Figure 8. Activity Diagram – Registrar Staff

Figure 8 illustrates the series of activities available to the user, explicitly focusing on the role of the registrar staff. Users without an account cannot access the homepage on the login page, as only the administrator has the authority to create accounts for registrar staff. Once successfully logged in, the registrar staff can view and manage the list of individuals who have submitted request forms. Their tasks include approving clearances, managing requested documents, and adding comments if students have not completed the necessary clearance requirements. The registrar staff also sets the processing date, and once the document is processed, the request is scheduled for release. The user is then notified that their requested document will be available for pickup as soon as possible.

Figure 9. Sequence Diagram – Students/Alumni

Figure 9 illustrates the procedural steps available to students and alumni. After successfully registering, users can start using the login interface. Once logged in, students and alumni can access various functions, such as submitting

request forms and requirements forms for database storage. Additionally, the system is designed to send mail to inform students that their documents are being processed. After completing the requirements, users are expected to receive their credentials.

Figure 10. Sequence Diagram – Admin

Figure 10 illustrates the procedural steps available to the administrator. They can utilize the login interface to create an account in the SQL database for enhanced system security. Upon successful login, administrators access the dashboard, which displays the number of active users, students, and alumni who have created accounts. The administrator can also manage accounts for students, alumni, and users. Additionally, they can access and manage the list of document types stored in the database, set the payment method, and designate the department responsible for approving student clearances.

Figure 11. Sequence Diagram – Head of LRC/Dean and Principal

Figure 11 illustrates the procedural steps available to users. The user can use the login interface to complete the login process, which an admin-provided account facilitates. Once the login is successful, the user can access the requested list or user information, allowing them to approve the clearance.

Figure 12. Sequence Diagram – Registrar Staff

Figure 12 illustrates the procedural steps available to users. The user can access the login interface to complete the login process, which an account provided by the administrator facilitates. Once logged in successfully, the user can access the dashboard to view the list of pending clearances and approve the requests listed. The registrar staff reviews the requested credentials, processes the document type requests made by students or alumni, and sets a schedule for the release date along with a tracking number. Finally, the

registrar sends an email to inform the user that their document will be available for pickup soon.

Figure 13. Entity Relationship Diagram – Database Design

Figure 13 shows each data processing step and how the data is processed and stored. The attached file is the ERD, which illustrates the contents of each table, as well as the primary key and foreign key. It also illustrates how the tables of the system's database are connected.

Figure 14. Admin/All Users - Login Page (User Interface Design)

Figure 14 displays the login page of the Online Request of Credential System (ORCS), designed for secure and user-friendly access. It includes fields for username and password and a Forgot Password option for account recovery. The system supports role-based access: students and alumni must create their accounts, while staff users, such as Cashiers, Head of LRC, Registrar Staff, and Deans/Principals, receive accounts from the administrator. Upon login, the system automatically identifies the user's role and displays the corresponding interface.

Figure 15. Students/Alumni - Sign-Up Page (User Interface Design)

Figure 15 presents the sign-up page enabling new users (students and alumni) to create an account. The interface includes fields for essential information such as Name (with separate inputs for last, first, and middle names), school year, course, contact number, address, and username, with a confirmation field for added security. The password will be emailed after the admin validates the user's information. A prominent 'Sign Up' button completes the form, leading users to the next step in the registration process.

Figure 16. Students/Alumni- Dashboard (User Interface Design)

Figure 16 displays the dashboard of the SMCC Credentials system, where students and alumni can view the status of their credential requests. The dashboard shows the number of requests pending and completed. It also lists the latest requests with details such as the requester's name, date of request, and current status (e.g., For Processing, Released). Users must fulfill all request requirements to proceed to the following processing stage.

Figure 17. Students/Alumni – Request Clearance (User Interface Design)

Figure 17 displays the 'Request Clearance' interface page. The Request Clearance button opens a clearance form, where the student can request clearance by selecting their department and course, then submitting the form.

Figure 18. Students/Alumni - Payment for Clearance (User Interface Design)

Figure 18 shows the interface page for payment of clearance requirements. This interface is essential for requesters, especially those with outstanding balances at the school. Requesters must complete the payment for clearance requirements before their request can be processed. The system also provides an option to upload proof of payment.

Figure 19. Students/Alumni - Payment for Requested Credentials (Use Interface Design)

Figure 19 illustrates the interface page for the payment of requested documents. Students and alumni must complete the payment for requested credentials before processing can begin. The system allows users to upload proof of payment as part of their application.

Figure 20. Students/Alumni - Clearance Status (User Interface Design)

Figure 20 displays the 'Clearance Status' page, part of the credential request system for students and alumni at Saint Michael College of Caraga. This interface allows users to track the approval status from various departments for their requested documents. If a section is marked as "DISAPPROVED," a comment box appears with additional requirements the requester must comply with. The system uses color-coded indicators, green for "Approved," blue for "Pending," and red for "Disapproved", for easy visual tracking of progress.

Figure 21. Students/Alumni – Application Form (User Interface Design)

Figure 21 displays the 'Application Form' interface that students or alumni use to request credentials. Before submitting the form, requesters can specify whether they are graduates, enter their personal and address details, and select the type of credentials they need, such as certificates or transcripts, along with the purpose for each request.

Figure 22. Students/Alumni – Feedback Form (User Interface Design)

Figure 22 displays the 'Feedback Form' page. This form allows students or alumni to provide feedback on the quality of services received from the institution. Users are asked to rate five key service areas: Staff Appearance, Staff Helpfulness, Speed/Efficiency, Job Knowledge, and Overall Quality of Service. Each criterion can be rated using a four-point scale: Very Satisfied (VS), Satisfied (S), Dissatisfied (D), and Very Dissatisfied (VD) with corresponding radio buttons for easy selection.

The form also includes a text box where users can add comments, suggestions, or complaints for more detailed feedback. Located at the bottom are 'Submit'

and 'Close' buttons, enabling users to either finalize and send their feedback or exit the form without submitting.

Figure 23. All Users – Activity Logs (User Interface Design)

Figure 23 displays the profile interface, where all users can view activity logs showing each action's ID, description, and timestamp. Through this interface, users can identify the actions they have taken along with the corresponding timestamps.

Figure 24. Admin - Dashboard (User Interface Design)

Figure 24 displays the 'Dashboard' interface, where the admin can view summary statistics, including the total number of users, students, pending requests, and completed requests. The 'Latest Request' section shows recent transactions, including the requester's name, date, and current status, such as 'For Processing' or 'Released'.

Figure 25. Admin – Requesters List (User Interface Design)

Figure 25 displays a list of requesters who have created accounts, along with details such as their names, year attended, department, contact information, educational level, and account status. This interface also provides actions for viewing the requirements uploaded by students or alumni during sign-up. Additionally, administrators have the option to activate or disapprove accounts and to reset passwords.

Figure 26. Admin – Users List (User Interface Design

Figure 26 displays the Users List interface, showing roles such as Cashier, Head of LRC, Deans, and Principals responsible for clearance approvals. The admin creates their accounts and can edit users via the "Action" button or add new users using the "Add Users" button.

Figure 27. Admin – Department List (User Interface Design)

Figure 27 displays the 'Department List' page for administrators in the ORCS. This interface allows admins to view and manage department records, including the department name and associated Facebook link. Each department entry is marked with a status (e.g., Active) and includes an Edit button for making changes. An Add Department button at the top-right corner enables the addition of new departments. The page also has a Search bar and pagination controls for easy navigation.

Figure 28. Admin – Course List (User Interface Design)

Figure 28 displays the 'Course List' page for administrators in the ORCS. This interface allows admins to manage courses under various departments. Each entry shows the department, course name, status (e.g., Active), and an Edit button for modifications. A Search bar and an Add Course button are also available for quick access and updates.

Figure 29. Admin – Document Type List (User Interface Design)

Figure 29 displays a list of document types available for student-requested credentials. The admin can manage document types in this section by editing existing entries. The list includes key details such as the document type, name, price, processing time (in days), and status. The 'Add Document Type' button allows admins to add new document categories as needed.

Figure 30. Admin – Payment Account (User Interface Design)

Figure 30 displays a list of available payment account methods within the system. This interface allows the administrator to manage various payment

options efficiently. It includes key details such as the payment name, account number, payment logo, status, and an action button for modifications.

The administrator can use the 'Add Payment Account' button to register new payment methods, providing flexibility in handling transactions. The 'Edit' button enables updates to existing payment details, including account information, status changes, and payment logo replacements. Additionally, the system supports search, sorting, and pagination features to enhance navigation and management of payment accounts.

Figure 31. Admin- ISO Form Code (User Interface Design)

Figure 31 shows the 'ISO Form Code' interface page, where the admin can add and edit ISO form codes for reports or other forms provided by the ISO. Each form entry includes its corresponding form number, issue status, revision number, effective date, and the name of the approving authority.

Figure 32. User (Cashier) - Dashboard (User Interface Design)

Figure 32 shows the 'Dashboard' interface, which enables the Cashier to view credential requests, including pending clearances, completed requests, and recent request transactions, along with their statuses.

Figure 33. User (Cashier) – Clearance List (User Interface Design)

Figure 33 shows the clearance approval section for the cashier, which enables authorized users to review, approve, or disapprove clearance requests. Each request includes an action button that allows staff to take appropriate action. Upon approval, a message prompt notifies the requester of any outstanding requirements, such as institutional balances, ensuring transparency and proper processing. Once a student fulfills the requirements, the interface provides an action button that allows the cashier to approve the request again.

The system also features a searchable and sortable table for efficient management of clearance requests.

Figure 34. User (Cashier) – Clearance Disapproved List (User Interface Design)

Figure 34 shows the 'Cashier Clearance Disapproved List' interface. This page displays clearance requests that have been disapproved and are pending student compliance with specific requirements.

Figure 35. User (Cashier) – Payment Verification (User Interface Design)

Figure 35 shows the Payment List's 'Payment Verification' interface, which allows the cashier to manage and validate students' credential payments efficiently. This ensures students have paid the required amount by reviewing the uploaded proof of payment. The interface features a six-column table displaying each student's ID number, name, course and year, date requested, status, and actions. In the Action column, the 'View Payment' button lets the cashier verify the payment. Once validated, the cashier can send the official receipt to confirm and approve the payment of the student's credentials.

Figure 36 shows the completed clearance report interface designed for the cashier. The interface allows the cashier to monitor and manage clearance requests that have been reviewed and approved. Users can filter the report based on a specific date range and department to locate particular records easily. Additionally, it features a "View Receipt" button, enabling the cashier to view the uploaded payment receipt submitted by the requester, especially when an outstanding balance needs verification.

Figure 37. User (Dean/Principal / Head of LRC) – Dashboard (User Interface Design)

Figure 37 illustrates the dashboard for the Head of LRC, Dean, or Principal, which displays pending clearance requests and the number of students seeking clearance. This dashboard interface is consistent across all users in

these roles and specifically highlights pending requests to notify them that students are awaiting clearance approval.

Figure 38. User (Dean/Principal / Head of LRC) – Clearance List (User Interface Design)

Figure 38 shows the clearance list for the Head of LRC, Dean, or Principal, displaying a list of students requesting clearance. All users in these roles share the same interface, which includes columns for ID, Name, Date Submitted, Is Cleared, Comments, Status, and an Action column with Approve and Disapprove buttons. If the student or alumni has completed all requirements and there are no issues, the clearance can be approved following validation. However, the clearance request will be disapproved if there are pending requirements.

Figure 39. User (Dean/Principal / Head of LRC) – Clearance Disapprove List (User Interface Design)

Figure 39 illustrates the 'Disapproved Clearance' requests interface, where the Head of LRC, Dean, or Principal can review clearance requests previously disapproved due to incomplete compliance with requirements. This interface provides a clear overview of requests that require further action, particularly for students or alumni who have chosen to fulfill their requirements online. The Disapproved Clearance Requests list includes the same columns as the Approved Clearance Requests list: ID #, Name, Date Submitted, Is Cleared, Comment, and Status, but also features an additional Action column with an Approve button. Once the student or alumnus has fulfilled all requirements, the Head of LRC, Dean, or Principal can approve the clearance request following a validation process.

Figure 40. User (Dean/Principal / Head of LRC) – Report for Clearance (User Interface Design)

Figure 40 shows the completed clearance report interface for Deans, Principals, or Heads of LRC. It allows users to filter approved clearance records by date and department, revealing key details like name, department, course, approval date, and status for easy monitoring.

Figure 41. User (Registrar Staff) – Dashboard (User Interface Design)

Figure 41 shows the registrar's 'Dashboard' interface, providing an overview of credential requests, including pending clearances, submitted requests, and recent transaction activity.

Figure 42. User (Registrar Staff) – Clearance List (User Interface Design)

Figure 42 illustrates the registrar's clearance list, displaying students requesting clearance along with their ID, name, date submitted, clearance status, comments, and overall status. The Action column includes Approve and Disapprove buttons. Clearances can be approved after validation if all requirements are met; otherwise, they will be disapproved.

Figure 43. User (Registrar Staff) – Clearance Disapprove List (User Interface Design)

Figure 43 illustrates the 'Disapproved Clearance' requests interface, where the registrar reviews requests initially disapproved due to incomplete requirements. The list displays the same columns as the Approved Requests: ID #, Name, Date Submitted, Is Cleared, Comment, and Status, with an additional Action column for approval. Once students or alumni fulfill the requirements, the registrar can validate and approve the request.

Figure 44. User (Registrar Staff) – Request Details (User Interface Design)

Figure 44 illustrates the 'Request Details' interface, where the registrar can view the details and types of documents requested by students or alumni. By clicking the 'Save' button, the registrar notifies them to proceed with the payment for the total amount of the requested credentials. The registrar also has the right to deny the request if the credential is unavailable in the registrar's office.

Figure 45. User (Registrar Staff) – Processing of Documents (User Interface Design)

Figure 45 illustrates the 'Processing Documents' interface, where the registrar can view document requests from students or alumni after payment has been made. The interface displays the request details and student information. The registrar can use the action button to notify the requester that their credentials are being processed.

Figure 46. User (Registrar Staff) – Schedule Release Date (User Interface Design)

Figure 46 illustrates the list of scheduled release dates for the documents interface, where the registrar can view the details and types of documents requested. The registrar can also check the official receipt to verify that the student or alumni has completed the payment for the requested credentials. A modal input form opens by clicking the action button, allowing the registrar to inform the student or alumni that their request is in transit. Once the process is complete, the registrar can email the tracking number and courier details.

Figure 47. User (Registrar Staff) – Feedback List (User Interface Design)

Figure 47 illustrates the 'Feedback List' interface, where the registrar can view and print the feedback form of the requesters after the credentials have been released.

Figure 48. User (Registrar Staff) – Report for Clearance (User Interface Design)

Figure 48 displays the 'Clearance Report' page for registrar staff. The registrar can filter clearance records by date and department and generate a printable report. The table shows relevant details such as Name, Department, Course, Date Approved, and Status. A search bar and pagination controls support easy navigation.

Figure 49. User (Registrar Staff) – Report for Requested Credentials (User Interface Design)

Figure 49 shows the 'Requested Credentials Report' page used by registrar staff. It enables users to generate reports by filtering requests through date range, department, document type, and student name. The table displays key information, including the requester's name, course, type of document requested, mailing address, approval date, and current status. A "Print Report" button is provided for quick printing, search, and pagination features for efficient navigation.

Figure 50. User (Registrar Staff) – Request History Report (User Interface Design)

Figure 50 shows the 'Request History Report' interface, where the registrar can filter and view records of document requests submitted by students or alumni. The list displays the requester's name, mailing address, date released, and status. Each entry allows viewing the corresponding application form containing the requester's information and request details.

3.10 Ethical Standard

This research, entitled "Online Request of Credentials for Saint Michael College of Caraga," addressed several ethical considerations to ensure that the study met the required standards for research integrity and participant protection.

A. Protection of Intellectual Property Rights (IPR)

The "Online Request of Credentials for Saint Michael College of Caraga" system incorporated innovative processes to streamline the credential request procedure. All materials produced during this project, including system documentation, source code, and technical designs, were safeguarded through copyright protection to ensure proper attribution and prevent unauthorized use. The logo of Saint Michael College of Caraga was used in the system to represent the institution and was protected under applicable trademark and copyright laws to prevent misuse. Proper permissions were secured to ensure compliance with intellectual property standards.

B. Informed Consent

The capstone project involved conducting interviews with key stakeholders including office heads such as the Registrar, Cashier, LRC personnel, Deans, and Principals, as well as students and alumni, to gather relevant feedback for the development of a web-based system aimed at enhancing the online credential request process at Saint Michael College of Caraga. The interview guide was carefully designed based on the study's objectives and the specific data required to achieve them. It focused on key themes such as existing workflows, encountered challenges, user experiences, and confidentiality practices. Participants were informed about the study's objectives, procedures, minimal risks, and potential benefits, particularly how their feedback would improve the system's functionality. Before conducting the interviews, a letter of consent was provided and secured to ensure that participants fully understood the purpose of the study and voluntarily agreed to participate. Participants were also informed of their right to withdraw from the study at any time without facing any consequences. All information collected during the interviews was treated with strict confidentiality and used solely for system development and academic research.

C. Data Privacy and Confidentiality

The system ensured data protection by implementing strong security measures, including encryption and Role-Based Access Control (RBAC). Access to sensitive information, such as student credentials and request statuses, was restricted to authorized personnel only. User data was safeguarded and not disclosed to any unauthorized individuals. For performance analysis, anonymized and aggregated data were utilized while maintaining strict confidentiality for all users, upholding privacy and ethical standards throughout system operations.

D. Voluntary Participation and Freedom to Withdraw

Participation in developing and testing the Online Request of Credentials System was entirely voluntary. Participants were fully informed of their right to withdraw from the project without impacting their professional roles or standing. To uphold the integrity of the research process, no coercion, undue influence, or financial incentives were employed, ensuring that participation remained completely voluntary and free from bias. Clear and transparent communication regarding the study's objectives, procedures, and participants' rights was consistently provided. This approach fostered mutual respect and understanding, promoting ethical engagement and cooperation throughout the project.

E. Minimization of Harm and Risk Management

The research team remained committed to ensuring the safety and well-being of all participants by minimizing potential risks throughout the development and implementation of the Online Request of Credentials System. Careful consideration was given to addressing technical, emotional, or social concerns that could arise during system testing or user feedback collection. If participants encountered difficulties, the research team and designated

support personnel were readily available to provide assistance and user guidance to help them navigate the system effectively. Furthermore, all collected data, including user inputs and records, were securely stored and handled with strict confidentiality to prevent unauthorized access. These measures ensured that no participant experienced adverse consequences due to their involvement in the project. As the study did not involve animal subjects, applying the 3Rs principle (Replacement, Reduction, and Refinement) was not applicable.

F. Beneficence and Contribution to Knowledge

The development of the Online Credential Request System aimed to improve the efficiency of requesting and processing academic records at Saint Michael College of Caraga, benefiting students, alumni, and the Office of the Registrar. By reducing processing time and minimizing errors, the system enhanced service delivery. It provided a more user-friendly and accurate experience, aligning with the institution's commitment to technological innovation and modernized administrative processes.

Upon request, participants were provided with a summary of the findings and improvements to the system. The project was presented through a comprehensive dissemination strategy, including demonstrations and informational materials, to raise awareness of the system's purpose and benefits and address concerns.

G. Justice and Fair Participant Selection

Participants were selected through a fair and transparent process that promoted inclusiveness and diversity. Selection was based on predefined criteria and focused on individuals from key stakeholder groups, including students, alumni, and staff from the Office of the Registrar, Office of the Learning Resource Center, Office of the Cashier, and the offices of the Deans or

Principals. This ensured that participants could provide valuable insights for system development. The process avoided discrimination and included individuals from various backgrounds, giving all stakeholders an equal opportunity to contribute meaningfully.

H. Data Integrity and Accuracy

All data related to the design, testing, and evaluation of the Online Request of Credentials System were collected with high standards of accuracy and integrity. Standardized procedures ensured that feedback and performance data were documented correctly and interpreted. ChatGPT was used during the preliminary analysis to organize ideas and summarize insights, while Grammarly helped ensure clarity and grammatical accuracy. All AI-generated content was reviewed and validated by the research team. No potential biases, errors, or limitations were identified or documented, as the tools were used only to support the study's accuracy and reliability.

I. Transparency and Honesty in Reporting

All findings, including system performance data and user feedback, were accurately reported without manipulation to preserve the study's credibility. Any potential conflicts of interest were openly disclosed to ensure transparency. Third-party sources, such as research papers, tools, and frameworks, were properly cited to maintain academic integrity and uphold ethical standards in reporting. Furthermore, the documentation process was supported by using artificial intelligence tools to enhance clarity, consistency, and accuracy. This comprehensive approach helped ensure the results remained objective, reliable, and informative for all stakeholders.

J. Use of Patented or Copyrighted Materials

The project did not involve using any patented technologies, so no clearance from patent holders was required. It focused on developing a web-based

system to enhance the credential request process using open-source and standard technologies that did not require proprietary rights. Additionally, the study utilized copyrighted materials, such as literature and previous research, all of which were cited correctly to ensure due credit was given to the original authors, thereby upholding intellectual property rights and ethical research standards.

K. Ethical Considerations for Animal and Human Trials

The project involved human participants, specifically teachers, students, and alumni, who were fully informed about their rights, the minimal risks involved, and the benefits of their participation. Ethical clearance for the use of animals was not applicable, as no animals were involved in the study. To ensure confidentiality and protect the professional standing of the participants, all feedback provided by teachers, students, and alumni was anonymized, upholding ethical standards throughout the research process.

L. Responsible Use of AI and Other Related Technologies

AI tools like Grammarly, paraphrasing tools, and ChatGPT were used to improve the quality of the written content. Grammarly helped correct grammar and syntax errors, ensuring accuracy throughout the text. Paraphrasing tools enhance readability by rephrasing sentences for better clarity. ChatGPT contributed by generating ideas, refining wording, and suggesting alternative content presentations. Together, these tools ensured the paper was clear, professional, and well-organized, allowing the research team to focus more on the technical aspects of the study.

M. Ethical Clearance and Institutional Approval

The capstone project was granted ethical approval by the Institutional Review Board of Saint Michael College of Caraga. This approval process ensured that the study complied with recognized ethical standards by safeguarding the

rights of participants, maintaining data confidentiality, and protecting intellectual property. The necessary clearance was secured before the project began, ensuring that all research activities were conducted responsibly and complied with institutional policies and ethical guidelines.

CHAPTER 4

SOFTWARE DEVELOPMENT AND TESTING

This chapter describes the main activities regarding the design and testing of the Online Request of Credentials System (ORCS). It sets forth the strategies used in the system's developmental process, defines the specific steps taken during its construction, and mentions activities done to preserve the system throughout its lifecycle.

Input

The input "User Accounts," "Requested Credentials," and "Students Information" represent the data that is provided to a system for processing. User Accounts refer to unique profiles or identities created for individual users in the system. The requested credentials are the authentication details, usernames, and passwords that should be user-specific and would verify and allow entry to the system. Alongside the data about students, such as names, grades, or courses specific to students, they are entered or retrieved for many purposes. The above inputs thus authenticate users, manage access, and process student-related data for the system.

Process

Various actions are involved in the system's processes depending on user roles. For the User, the process consists of Requesting Documents, where he/she can ask for necessary files, and Upload Payment, wherein he/she inputs payment particulars. Admin processes include several functions: logging in to verify access rights, monitoring system data on a dashboard to view system

performance, managing students by viewing their information, managing payment methods to make payment options available, managing requests to respond to user requests, and generating reports on the performance and insights from the data thereof. These processes help the system function smoothly and manage itself.

Pop-up alert for success or a different message for failure. If an error occurs, it logs the details to the console for debugging.

Figure 52. Admin/All Users – Login Page

Figure 52 shows the first thing Users see when they access the system. To access the system, users enter the username and password of their respective accounts.

Figure 53. Admin/All Users – Login Error Notification

Figure 53 displays a modal dialog box (pop-up window) over a login or sign-in screen. It alerts users when they input incorrect login credentials.

Figure 54. Code Snippet for Admin/Users – login.php

Figure 54 illustrates a PHP backend code snippet that handles user authentication by validating email and password credentials provided via GET parameters. This script is initiated by including two essential external files: connection.php for database connectivity and functions.php, likely for utility functions such as log_action. The session_start() function initializes a session, enabling the script to store and retrieve user-specific data throughout the session lifecycle.

Key to the login mechanism is the data sanitization step using mysqli_real_escape_string() on both the email and password inputs ($_GET["email"] and $_GET["password"]), protecting against SQL injection vulnerabilities. These sanitized inputs are then used in a SELECT SQL query, which fetches the user details from the users table and joins the

ref_departments table to retrieve associated department data. Notably, the condition u.status != 'Verify Email' ensures that users without email verification are excluded from the login process.

If a matching user record is found, the script proceeds to extract user information into session variables such as $_SESSION["id"], $_SESSION["fname"], $_SESSION["lname"], and more, which are essential for maintaining state across the application. An additional check determines if the user's role is not 'Client', and if so, it performs a secondary query to retrieve the department name from the ref_departments table using the department_id, then stores it in the session as $_SESSION["department"].

Following session initialization, the script performs two critical validations: first, it checks if the user's status is 'Active', ensuring that only active accounts can proceed. Second, it uses password_verify($password, $row['password']) — a crucial security function — to compare the entered password with the hashed password stored in the database. If successful, the log_action() function logs the login activity, and the string 'success' is echoed back, signaling the frontend that the login was successful.

If any stage fails, such as an incorrect password, inactive account, or no matching user, the script responds with a meaningful error message like "Incorrect Email or Password entered" or "User account deactivated!", which is likely displayed to the user, as shown in the modal alert from the earlier image.

Figure 55. Students/Alumni – Sign Up Page

Figure 55 shows the signup page, where students can input all the necessary information to create an account

Figure 56. Code Snippet for Students/Alumni – register.php

Figure 56 illustrates a comprehensive user registration form developed using HTML, PHP, JavaScript (with jQuery), and SweetAlert2 for interaction feedback. This form is structured using Bootstrap's grid system, ensuring responsive behavior across devices, and is divided into multiple sections to collect detailed user information.

The form begins with a series of personal input fields such as First Name, Middle Name, Last Name, and Name Extension. A notable feature is the <input type="checkbox" id="editMname" /> paired with JavaScript logic that toggles the readonly attribute of the middle name field (mname), ensuring users only provide a middle name if applicable — a small but impactful enhancement to usability and data accuracy.

The dynamic population of address fields demonstrates robust interaction with backend data. Upon changing the Province dropdown (select[name="province"]), an AJAX call ($.get) fetches related City/Municipality options via get_city_by_province.php. Similarly, choosing a city triggers another AJAX call to populate the Barangay options through get_barangay_by_city.php. This technique ensures location consistency by only displaying options relevant to the user's previous selections.

Another significant portion of the code is handling file uploads, where users are required to submit both a valid ID and a photo of themselves holding it. Each file input is constrained to specific MIME types (e.g., .png, .jpg, .jpeg, .pdf) using the accept attribute, enforcing file type compliance at the client level.

The JavaScript code block at the bottom of the form adds interactivity and asynchronous functionality. The form submission is handled using $('#register-form').on('submit'), where a Swal.fire loading modal is shown while the form data using FormData is sent via AJAX POST to save.php. This decouples the

form from a traditional page reload and provides a modern, user-friendly interface.

Upon successful form submission, the user[25] is prompted to enter a One-Time Password (OTP) through a SweetAlert2 modal. The[1] function askForInput() encapsulates this loop, where the user's[25] OTP input is validated via the checkInput() function, which performs a POST request to verify_email.php. This[1] OTP-based verification adds a crucial security layer before the account is finalized.

1.	*. OBJECTIVES; . The; . This; . METHODOLOGY; . In; . Once; . Feedback; . FINDINGS; . It; . These; . Continuous; . RECOMMENDATIONS; . Their; . His; . Every; . Through; . As; . Doing; . Also; . Additionally; . To; . Thus; . Students; . Implementing; . At; . Although; . Limitations; . Furthermore; . Ho...*	Text inconsistencies	Correctness
2.	~~system titled~~	Wordy sentences	Clarity
3.	the Online	Determiner use (a/an/the/this, etc.)	Correctness
4.	~~alumni~~ → alums	Potentially sensitive language	Delivery
5.	*This system is designed to minimize manual workload, reduce processing time, and enhance academic service delivery's efficiency, transparency, and reliability.*	Unclear sentences	Clarity
6.	*Testing; testing*	Text inconsistencies	Correctness
7.	*To the families of the researchers, sincere gratitude is extended for their unwavering love, patience, and support.*	Paragraph can be perfected	Clarity
8.	*To Mr. Jessie S. Mahinay, the project adviser, the researchers express deep appreciation for his guidance, patience, and insightful contributions.*	Paragraph can be perfected	Clarity
9.	~~greatly~~ → dramatically	Word choice	Engagement
10.	*Their*	Intricate text	Clarity
11.	~~the completion of~~ → completing	Wordy sentences	Clarity
12.	*Their guidance significantly contributed to the enhancement of the project's quality.*	Paragraph can be perfected	Clarity

13.	~~alumni~~ → alums	Potentially sensitive language	Delivery
14.	the organization	Determiner use (a/an/the/this, etc.)	Correctness
15.	~~alumni~~ → alums	Potentially sensitive language	Delivery
16.	*Registrar's; registrar; registrar's*	Text inconsistencies	Correctness
17.	~~alumni~~ → alums	Potentially sensitive language	Delivery
18.	*Status; status*	Text inconsistencies	Correctness
19.	explicitly designed, designed explicitly	Word choice	Engagement
20.	~~and~~ → . They also	Hard-to-read text	Clarity
21.	*sign-up; Sign-Up; signup*	Text inconsistencies	Correctness
22.	*log-in; login; Login*	Text inconsistencies	Correctness
23.	*User Validation – This ensures that user inputs are accurate, secure, and complete before processing any request. In ORCSMCC, it includes validating the essential information provided by end-users during the sign-up and log-in processes.*	Paragraph can be perfected	Clarity
24.	~~existing~~	Wordy sentences	Clarity
25.	*user; user's; User*	Text inconsistencies	Correctness
26.	~~balance~~ → balances	Faulty subject-verb agreement	Correctness
27.	*This*	Intricate text	Clarity

28.	*I. Keck et al.'s study further discusses the technical challenges, such as system incompatibilities and the need for specialized personnel to manage the transitions.*	Ungrammatical sentence	Correctness
29.	*Their study emphasizes the importance of ensuring that such systems are user-friendly. They propose a framework for evaluating credential systems' effectiveness and ensuring their sustainability in the long term [13].*	Paragraph can be perfected	Clarity
30.	~~R.~~	Incorrect noun number	Correctness
31.	~~alumni~~ → alums	Potentially sensitive language	Delivery
32.	from any location	Incorrect phrasing	Correctness
33.	*This is facilitated by systems that utilize visual representations of approval elements, allowing users to define their processes effectively [17].*	Paragraph can be perfected	Clarity
34.	~~an increasing number of~~ → many	Wordy sentences	Clarity
35.	~~serious~~ → severe	Word choice	Engagement
36.	*This technological revolution, while enabling greater flexibility in document handling, has also introduced vulnerabilities. Validating documents remains laborious and time-consuming, further exacerbating concerns about fraudulent documents [26].*	Unclear sentences	Clarity
37.	*The validation of identification documents, through optimized admin review and advanced technological solutions, is vital for securing online credential systems.*	Paragraph can be perfected	Clarity
38.	~~alumni~~ → alums	Potentially sensitive language	Delivery

39.	~~alumni~~ → alums	Potentially sensitive language	Delivery
40.	*Cashier; cashier's; cashier*	Text inconsistencies	Correctness
41.	~~alumni~~ → alums	Potentially sensitive language	Delivery
42.	*payment; Payment*	Text inconsistencies	Correctness
43.	~~alumni~~ → alums	Potentially sensitive language	Delivery
44.	~~alumni~~ → alum	Potentially sensitive language	Delivery
45.	*This*	Intricate text	Clarity
46.	~~alumni~~ → alums	Potentially sensitive language	Delivery
47.	~~alumni~~ → alums	Potentially sensitive language	Delivery
48.	~~alumni~~ → alums	Potentially sensitive language	Delivery
49.	~~alumni~~ → alums	Potentially sensitive language	Delivery
50.	*The user can access the login interface to complete the login process, which an account provided by the administrator facilitates.*	Ungrammatical sentence	Correctness
51.	~~alumni~~ → alums	Potentially sensitive language	Delivery
52.	, along	Incorrect punctuation	Correctness
53.	and foreign keys	Wordy sentences	Clarity

54.	~~illustrates~~ → describes, demonstrates	Word choice	Engagement
55.	, and	Incorrect punctuation	Correctness
56.	~~alumni~~ → alums	Potentially sensitive language	Delivery
57.	, enabling	Incorrect punctuation	Correctness
58.	~~alumni~~ → alums	Potentially sensitive language	Delivery
59.	*Name; name*	Text inconsistencies	Correctness
60.	~~alumni~~ → alums	Potentially sensitive language	Delivery
61.	~~alumni~~ → alums	Potentially sensitive language	Delivery
62.	the requested	Determiner use (a/an/the/this, etc.)	Correctness
63.	that the	Pronoun use	Correctness
64.	~~that~~ students	Wordy sentences	Clarity
65.	~~alumni~~ → alums	Potentially sensitive language	Delivery
66.	the 'Submit'	Determiner use (a/an/the/this, etc.)	Correctness
67.	~~alumni~~ → alums	Potentially sensitive language	Delivery
68.	*This*	Intricate text	Clarity
69.	~~and~~ → ,	Incorrect phrasing	Correctness

70.	*Users can filter the report based on a specific date range and department to locate particular records easily.*	Unclear sentences	Clarity
71.	*If the student or alumni has completed all requirements and there are no issues, the clearance can be approved following validation.*	Unclear sentences	Clarity
72.	~~alumni~~ → alumnus	Incorrect noun number	Correctness
73.	~~alumni~~ → alums	Potentially sensitive language	Delivery
74.	~~alumni~~ → alums	Potentially sensitive language	Delivery
75.	~~alumnus~~ → alum	Potentially sensitive language	Delivery
76.	~~registrar's~~ → Registrar's	Confused words	Correctness
77.	~~alumni~~ → alums	Potentially sensitive language	Delivery
78.	~~alumni~~ → alumnus	Incorrect noun number	Correctness
79.	~~alumni~~ → alums	Potentially sensitive language	Delivery
80.	~~alumni~~ → alums	Potentially sensitive language	Delivery
81.	*This research, entitled "Online Request of Credentials for Saint Michael College of Caraga," addressed several ethical considerations to ensure that the study met the required standards for research integrity and participant protection.*	Unclear sentences	Clarity
82.	~~alumni~~ → alums	Potentially sensitive language	Delivery

83.	~~at any time~~	Wordy sentences	Clarity
84.	~~alumni~~ → alums	Potentially sensitive language	Delivery
85.	~~alumni~~ → alums	Potentially sensitive language	Delivery
86.	*Selection was based on predefined criteria and focused on individuals from key stakeholder groups, including students, alumni, and staff from the Office of the Registrar, Office of the Learning Resource Center, Office of the Cashier, and the offices of the Deans or Principals.*	Ungrammatical sentence	Correctness
87.	*This*	Intricate text	Clarity
88.	~~alumni~~ → alums	Potentially sensitive language	Delivery
89.	~~alumni~~ → alums	Potentially sensitive language	Delivery
90.	*The capstone project was granted ethical approval by the Institutional Review Board of Saint Michael College of Caraga.*	Passive voice misuse	Clarity
91.	*This chapter describes the main activities regarding the design and testing of the Online Request of Credentials System (ORCS).*	Paragraph can be perfected	Clarity
92.	*It sets forth the strategies used in the system's developmental process, defines the specific steps taken during its construction, and mentions activities done to preserve the system throughout its lifecycle.*	Unclear sentences	Clarity
93.	~~Students~~ → Student	Incorrect noun number	Correctness

94.	*For the User, the process consists of Requesting Documents, where he/she can ask for necessary files, and Upload Payment, wherein he/she inputs payment particulars.*	Ungrammatical sentence	Correctness
95.	~~he/she~~ → they	Potentially sensitive language	Delivery
96.	~~he/she inputs~~ → they input	Potentially sensitive language	Delivery
97.	account.	Closing punctuation	Correctness
98.	~~are required to~~ → must	Wordy sentences	Clarity
99.	. fire	Improper formatting	Correctness
100.	*This*	Intricate text	Clarity