

SAINT MICHAEL COLLEGE OF CARAGA

WEB-BASED THESIS ROUTING SYSTEM FOR SAINT MICHAEL COLLEGE OF CARAGA

A Capstone Project To
The Faculty of
College of Computing and Information Sciences

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



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ABSTRACT

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I. OBJECTIVES

This study aims to design, develop, and implement a digital Thesis Routing System (TRS) for Saint Michael College of Caraga, with the specific objectives of digitizing the thesis submission and review process to enhance operational efficiency, minimize paperwork, and improve the overall organization and accessibility of documents; providing real-time tracking of thesis submission statuses to promote transparency and enable efficient monitoring of progress and feedback; and facilitating the secure storage of all thesis-related documents—including drafts, comments, and approvals—while also enabling the generation of certificates of endorsement.

II. METHODOLOGY

The Thesis Routing System (TRS) was developed using SDLC methodology with a three-tier architecture for scalability and security. System design employed UML diagrams (use case, activity, sequence) and an ERD for database structure. Built with PHP, MySQL, and front-end technologies (HTML/CSS/JS), the system features role-based access control and was tested for performance and usability.



III. FINDINGS

The system received high ratings in functionality, performance efficiency, and usability based on ISO 25010 standards—reflected in a strong total weighted mean of 3.50—demonstrating its effectiveness, reliability, and user-friendliness, with recommendations for further enhancement in capacity handling and continuous refinement to ensure long-term adaptability and user satisfaction.

IV. RECOMMENDATIONS

To enhance the system's effectiveness and user experience, the following improvements are recommended: (1) Add relevant announcement on the homepage; (2) Integrate AI system to review and analyze the paper or manuscript, providing suggestions, feedback, or comments similar to how Google Docs displays comments on the right side for easier tracking and collaboration; (3) Integrate other services in research office;(4) Implement a comprehensive student communication system that includes voice calls, video conferencing, and scheduled consultation capabilities.

KEYWORDS: Web-based system, Thesis routing, Feedback, Email Notification, Role-based Access Control.



DEDICATION

This capstone research is a reflection of the heartfelt gratitude of the researchers to the individuals who have supported and inspired them throughout this journey.

To their families, thank you for your unwavering love, patience, and encouragement. Your support gave them the strength to face every challenge and continue pushing forward, even in the most difficult moments.

To their adviser, Ms. Rea Mie A. Omas, they offer their deepest appreciation for your guidance, dedication, and support. Your insightful feedback and encouragement played a crucial role in shaping this study and helping them grow both academically and personally.

This research is also the result of their collective effort, collaboration, and shared commitment. Every contribution, no matter how big or small, helped turn their vision into a functional and meaningful system.

This accomplishment would not have been possible without the people who stood beside them from beginning to end. Thank you for being part of their journey.



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A special thanks goes to their friends, classmates, and mentors who stood by them with encouragement, collaboration, and thoughtful advice. Your presence and support made a meaningful impact on this journey.

Lastly, to everyone who contributed in any way, whether directly or indirectly, the researchers offer their heartfelt appreciation. This accomplishment is a shared success, and they humbly dedicate this thesis to all of you.



TABLE OF CONTENTS

	Pages
TITLE PAGE	i
CERTIFICATE OF RESEARCH APPROVAL	ii
ABSTRACT	iii
DEDICATION	vi
ACKNOWLEDGEMENT	vii
TABLE OF CONTENTS	viii
LIST OF TABLES	vii
LIST OF FIGURES	ix
 CHAPTER	
1 INTRODUCTION	1
1.1 Project Context	1
1.2 Objective of the Study	2
1.3 Scope and Limitations	3
1.4 Definition of Terms	3
2 REVIEW OF RELATED LITERATURE	6
3 SOFTWARE REQUIREMENTS AND DESIGN SPECIFICATION	11
3.1 System Architecture	11
3.2 Conceptual Diagram	12
3.3 Use Case Diagram	13
3.4 Activity Diagram	14
3.5 Sequence Diagram	18
3.6 ERD (Database Design)	25
3.7 User Interface Design (Prototype)	26
3.8 Software Platforms, Development Environments and Tools	39
3.9 Hardware Requirements	41
4 SOFTWARE DEVELOPMENT AND TESTING	43
4.1 Development Process	43
4.2 Testing Process	81
- Accuracy Test	
- Functionality Test	
- Performance Test	
5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	89
5.1 Summary of Findings	89
5.2 Conclusion	90
5.3 Recommendations	90
 REFERENCES	
CURRICULUM VITAE	
APPENDICES	
CERTIFICATE OF TECHNOLOGY BASED ASSESSMENT	
PUBLISHABLE JOURNAL	



LIST OF FIGURES

Figure No.	Title	Pages
1	System Architecture	11
2	Conceptual Diagram	12
3	Use Case Diagram	13
4	Activity Diagram – Students	15
5	Activity Diagram - Panel	16
6	Activity Diagram – Admin	17
7	Activity Diagram – Adviser	17
8	Sequence Diagram – Student	18
9	Sequence Diagram – Panel	20
10	Sequence Diagram – Adviser	22
11	Sequence Diagram – Admin	24
12	Entity Relationship Diagram – Database Design	25
13	Landing Page	26
14	Login Page – Student	27
15	Student Registration Page	28
16	Route 1 – Student	29
17	View Comments	29
18	Endorsement Certificate	30
19	Login Page - Panel	31
20	Student Submitted Files	31
21	Comment for Panel	32
22	Login Page – Adviser	32
23	Students Document Submitted	33
24	Adviser Comment	33
25	Login Page – Admin	34
26	Student Submitted Documents	34



27	Department and Course Management	35
28	Panel Registered Accounts	36
29	Adviser Registered Accounts	36
30	Panel Registration	37
31	Adviser Registration	37
32	List of Registered Students	38
33	Input-Process-Output Diagram	42
34	Landing Page	43
35	Code Snippet for Landing Page	44
36	Login Page – Student	45
37	Code Snippet for Login Page – Student	45
38	Student Registration Page	46
39	Code Snippet (Query) for Registration Page	47
40	Route 1 - Student	48
41	Code Snippet for Documents – Student	49
42	View Comments	50
43	Code Snippet for Monitoring Form	51
44	Endorsement Certificate	52
45	Code Snippet for Endorsement	53
46	Login Page – Panel	53
47	Login Page – Panel	54
48	Student Submitted Files	55
49	Code Snippet (Query) for Documents	56
50	Comment for Panel	57
51	Code Snippet (Query) for Comment of Panel	58
52	Login Page – Adviser	59



53	Code Snippet for Adviser	59
54	Students Document Submitted	60
55	Code Snippet for Document	61
56	Adviser Comment	62
57	Code Snippet for adviser routing form	62
58	Login Page – Admin	63
59	Code Snippet for Admin	63
60	Student Submitted Documents	64
61	Code Snippet for Documents	65
62	Department and Course Management	66
63	Code Snippet for Department and Course	67
64	Panel Registered Accounts	68
65	Code Snippet for Registered Panel	68
66	Adviser Registered Accounts	69
67	Code Snippet for Registered Adviser	70
68	Panel Registration	71
69	Code Snippet for Panel Registration	72
70	Adviser Registration	73
71	Code Snippet for Adviser Registration	73
72	List of Registered Students	74
73	Code Snippet for Registered Students	75



LIST OF TABLES

Table		Pages
1	Software Requirements	39
2	Hardware Requirements	41
3	Functional Suitability	76
4	Performance Efficiency	76
5	Usability	77
6	Respondent's Distribution	77
7	Functional Suitability	78
8	Performance Efficiency	79
9	Usability	80
10	Summary Table of the Overall Mean and Grand Distribution of the Acceptability Level	82

SAINT MICHAEL COLLEGE OF CARAGA

CHAPTER 1

INTRODUCTION

1.1 Project Context

The Thesis Routing System (TRS) is a systematic procedure for managing an academic thesis submission, evaluation, and endorsement. A TRS is pertinent as education becomes increasingly research-oriented and time-constrained for degree completion. It eases the panel's workload by minimizing their workload on handling the thesis and enhancing openness through manual checks. The Research Office at Saint Michael College of Caraga faces a significant challenge in routing research papers, as the process is time-consuming and requires printing multiple copies of each document. This results in delays and inefficiencies, as staff must manually distribute and manage numerous physical copies for review and approval, creating unnecessary workload and contributing to excessive paper usage.

F. L. R. Geanne et al., state that managing thesis processes can be complex. Students, advisers, and panels must be wisely coordinated for document and requirement submissions, defense scheduling, and other associated activities involving the needs of identifiable entities in the thesis process [1]. From this problem, E – thesis Management System (ETMS) is designed to solve difficulties using an online search to al [2]. The coordinator can handle the thesis data and update its availability [2].

According to Q. B. Joseph, several hurdles surfaced in online thesis supervision during emergency remote teaching, including challenges in transitioning from offline to online thesis supervision, ineffective communication between advisors and students, limited time for consistent online access, hindered field data collection, decreased thesis completion rates among students, difficulties in communicating with group mates, and overall thesis writing [3].



Submitting a thesis at Saint Michael College of Caraga (SMCC) is costly and time-consuming, as multiple copies must be printed. Conventional methods are expensive and inefficient, primarily due to the time spent on document processing and handling. This results in high costs and delays, while also limiting the overall efficiency of the submission and review process.

To address the problem, the proposed TRS would enable online review of these documents so that their quality can be maintained during the reviewing process while following up on thesis progress live. This will ensure transparency and accountability throughout, where students and panel can keep track of submission statuses. Additionally, TRS will securely store all drafted thesis submissions and comments for easier management and retrieval purposes when needed.

The Thesis Routing System (TRS) is designed to streamline the thesis submission and review process. By eliminating the need for printed copies, the system reduces costs and promotes sustainability, aligning with the institution's eco-friendly initiatives. Through the TRS, thesis reviewers and faculty members can provide feedback and comments electronically, enabling real-time tracking and ensuring secure storage of all documents. This modernized system enhances transparency, efficiency, and accountability, while meeting the research office's requirements for a seamless and contemporary approach to thesis management.

1.2 Objective of the Study

The researchers' study aims to design, develop, and implement a digital Thesis Routing System (TRS) for Saint Michael College of Caraga.

Specifically, it aims to:

1. Digitizing the thesis submission and review process enhances efficiency, reduces paperwork, and improves organization and accessibility.



-
2. Provide real-time tracking of thesis submission statuses to enhance transparency and enable efficient monitoring of progress and feedback.
 3. Facilitate secure storage of all thesis-related documents, including drafts, comments, approvals, and generate certificates of endorsement.

1.3 Scope and Limitations

The online-based Thesis Routing System (TRS) focuses on the improvement of the whole thesis submission and evaluation process in the Research Office of Saint Michael College of Caraga. The System includes user login authentication, thesis submission, route tracking, and status update (Submitted, pending, approved). It supports access for administration, advisers, panels, and students with role-based permissions. Panel members and advisers evaluate submissions, provide feedback, and approve or request revisions, ensuring an organized and accessible evaluation process.

The web-based system was explicitly meant for SMCC and may only be easily adjusted for other institutions with drastic changes. Furthermore, although it allows digital submission and tracking, manual assessment is still required, making it time-consuming since faculty members and supervisors must look into and offer suggestions.

The system is limited to users who are directly involved in the research processes across all departments. It handles official research-related documents as proposals, endorsement certificates, and final documents. It doesn't offer types of institutional documents or non-research transactions.

1.4 Definition of Terms

The terms defined below explain the basic concepts and factors discussed during the conceptualization and development of TRS and contextual information on how the researchers apply these concepts in their study.



Access control—The TRS system has access control mechanisms that allow only authorized personnel access to certain functionalities and data. Various hierarchies of access are granted to students, faculty, and superusers to safeguard delicate information and preserve the system's integrity.

Administrator—An Administrator has the highest level of control over the TRS. He or she has the overall operation of the system, manages user accounts and their permissions, maintains data integrity, and changes or updates the system according to the institution's needs. Administrators would act as the main enforcers of access control and cybersecurity to keep sensitive information safe and ensure reliability within the system.

Attack Vectors—in this case, are the methods or paths that promote unauthorized access to TRS by malicious actors. They refer to the ways or routes bad people can use to enter the TRS system unauthorized. Knowing attack vectors is about identifying potential threats like phishing scams involving fake websites, malware for sending spam messages, and some SQL injections, among other cybercrimes. Therefore, the TRS should have strong cybersecurity measures because all these intruders depend on the same known techniques.

Database-Oriented Management System—It is used to save and modify databases. It may also be used to create TRS since the data-keeping process is user-friendly software built to suit specific needs in various scenarios. End-users, including the Research office, may readily access the database without considering the underlying schema.

End-user – refers to individuals involved in the research process who utilize the TRS within SMCC. This includes students, panels, advisers, and administrators overseeing the entire process. Each user has specific rights and responsibilities to ensure secure and appropriate access to the system.



Thesis Routing System (TRS) - is a platform where students can submit their title proposals and final documents for routing through predefined stages (Route 1, Route 2, Route 3), ensuring a systematic review and approval process.

User Interface (UI)- The component of the TRS through which users interact with the system. A good UI is able to present ease of use, clarity, and, most of all, accessibility to all roles, from student to administrator.

Version control—managing and recording making changes in documents and data within the TRS. it enables users to revise, restore a previous version, and keep a history of updates.



CHAPTER 2

REVIEW OF RELATED LITERATURE

This literature review discusses types of web-based thesis routing systems. These systems facilitate the submission and reviewing action together with the approval of various academic papers. Such systems promote the online submission of these documents, thereby eliminating the printing costs, among other expenses. This also helps monitor the process of reviewing in a way that increases accountability and transparency. In other words, the systems of a very varied nature allow the panelists to circulate the documents within themselves for comments and to mark them for different levels of review. This review looks at existing literature on the effectiveness of technologies on academic processes, such as the review of thesis, to find the challenges with the current practices and make recommendations on how to enhance the management of academic papers through web-based systems.

Web-based Thesis Management System

According to M. Bagoes et al., the primary aim of the web-based thesis management system is to enable the sharing of information regardless of the distance or time between the panel and students using an internet connection [5]. One of the most significant stages of college is the thesis stage, which is the last major project a student must undertake before they can graduate [4], [6], [30]. In academia, the essential role of thesis writing can be challenging. It is so important that it is a prerequisite for students to graduate [3]. Moreover, the problem with conducting research-based work offline or manually, such as evaluating the papers, providing feedback, and other remarks, is that it takes a lot of hassle, which might cause a lack of productivity and waste of time [14], [20]. A web-based thesis management system can help mitigate the problems posed by the conventional, manual thesis processes by promoting effective communication and sharing of information among students, advisers, and panels. It helps manage the evaluation of the works,



the provision of feedback, and coordination in general, which eliminates the bottlenecks associated with works of research in an offline mode. Ultimately, this system helps enhance workability and ensures that thesis writing is done within the deadlines, assisting students to graduate on time.

Managing and coordinating thesis processes could take a lot of work. The Student, adviser, and panel must be appropriately coordinated for document and requirement submissions and related activities concerning the needs of identified entities in the thesis process [1]. Web-based online thesis guidance application facilitates the processing of student thesis data and enhance thesis guidance for better completion of the final thesis task [31]. This system offers a portal that will make it simpler to follow and finish the thesis cycle [7]. According to P. Putra, the thesis Monitoring Information System is expected to be used in circumstances that allow thesis guidance to be carried out indirectly on campus or in situations where the Supervising Lecturer needs to re-examine the thesis of the Student, then this thesis Monitoring Information System can be utilized because it allows students to upload thesis which is to be examined by lecturers [32], [33]. This project will contribute to better thesis management in the future [2]. A thesis supervision management program that operates on the web can address the problems associated with the management and coordination of the thesis processes. This is done by simplifying document exchanges and related activities between students, advisers, and panels. This system provides web-based monitoring systems to track progress and complete the thesis cycle, eliminating distance barriers in the guidance and evaluation process. In essence, this system is designed to improve the overall management of a learner's thesis and fast-track the thesis submission process.

Documents Submission Management System

According to A. M. Samuel, Document Management System (DMS) is described as the use of a computer system or software to store, manage, and track electronic documents [15], [21].



Nowadays, human life has shifted to the life of persuasive computing, which makes information technology a part of human life anytime and anywhere [22]. Moreover, document management systems support the life cycle management of document-based information [9], [17]. A Document Management System (DMS) is software for capturing, managing, and tracking electronic documents. This indicates the advancement of persuasive computing that embeds information technology in people's lives, thereby improving the management of document-laden information.

Document submission management systems have become an essential topic regarding digital transformation in organizations because they enable paperless businesses, speed up processes, lower business costs, and support organizational sustainability activities [10], [23]. Online submissions and approvals of official documents are ways in which computerized networks have made document management and submission simple through quick transformation and exchange between several entities [8], [35]. The design elements include ease of use, accessibility, and the ability to produce downloadable and printable [34]. The use of document submission management systems is essential to the digital transformation of any organization as they assist in creating a paperless work environment, speeding up processes, cutting down expenses, and availing eco-friendliness in a given organization; they enhance document management via submission and approval of documents online with emphasis being placed on ease of use, accessibility and ability of the documents to be printed as well as downloaded.

Effectiveness of Providing Feedback for Students

According to W. Yong, research has shown that engaging students in peer feedback can help them revise documents and improve their writing skills [11]. Peer review, especially online peer review, has several advantages over teacher feedback regarding timeliness, convenience, volume, and learner autonomy [12]. Moreover, promptly delivering input and ensuring students can use it to improve learning is fundamental to its success [26]. More importantly, giving feedback



during the writing process is essential to enhance students' writing skills [18]. Peer review contributes to developing enhanced writing competence, with online evaluations possessing several benefits over instructor feedback in terms of time, ease, quantity, and independence. Giving prompt input during the writing process is vital, positively affecting learning.

Findings of B. A. Mamoon, Feedback is difficult in this area. However, it is essential in improving the students' learning process [13], [19]. Self-efficacy is also believed to mediate between a teacher's feedback and a student's academic performance [24]. Therefore, teachers must provide students with good feedback to assist them in accessing and implementing knowledge through practices [25], [27]. At the same time, feedback is one of the things that students most want [28]. As a result, students who receive feedback gain experience in problem detection, may become more aware of writing problems and may discover different revision strategies [29]. Feedback is an essential factor in increasing the learning of students, and it is self-efficacy in its relationships between the teacher's feedback and academic performance; purposeful feedback facilitates students' knowledge, is very important, and helps students detect and correct problems.

Role-Based Access Control

According to C. Arnab, Access control defines and constrains what a user can do in a system. In other words, it authorizes the user for certain activities that the user wishes to perform [36]. Today, security is recognized as an absolute need in application development [37]. Access control refers to an organization's policy for an authorizing process for access, the mechanisms that provide and enforce the policy, and the model on which the policy and process are based [38]. As defined by C. Arnab, access control determines and enforces what users can do within a system based on organizational policies, reflecting the critical role of security in modern application development.



Today's rapidly developing communication technologies and dynamic, collaborative business models have made data security and resources more crucial than ever, especially in multi-domain environments like Cloud and Cyber-Physical Systems (CPS) [39]. Activating appropriate roles for a session in the role-based access control (RBAC) model has become challenging because of the so-called role explosion [40]. Access control, a critical feature of any secure system, encompasses subject-to-object segregation based on a security policy and involves three phases: identification, authentication, and authorization [41]. The rapid advancement of communication technologies and dynamic business models has heightened the importance of data security, particularly in multi-domain environments like Cloud and Cyber-Physical Systems, where challenges such as role explosion complicate the activation of roles in role-based access control (RBAC).



CHAPTER 3

SOFTWARE REQUIREMENTS AND DESIGN SPECIFICATION

This chapter analyzes the technical aspects of the proposed system's construction, including the software and hardware requirements. In addition, it provides an extensive description of the Thesis Routing System (TRS) and its merits, including its construction, design requirements, and other components requisite for its deployment and maintenance.

1.4 System Architecture

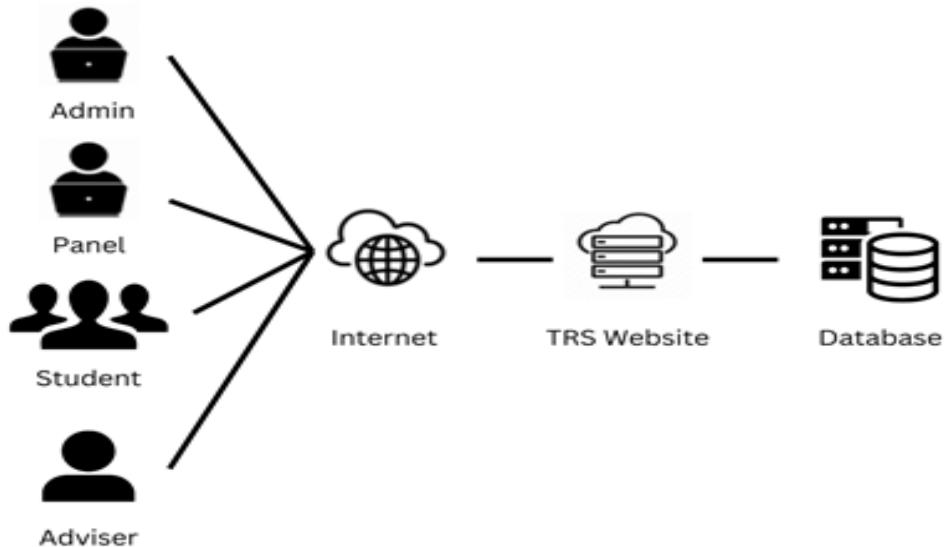


Figure 1. System Architecture

Figure 1 represents the structure of the Thesis Routing System where various users, namely, Admin, Panel, Student, and Adviser, are interconnected to the TRS system through the Internet. Each user utilizes the TRS according to their assigned roles. For instance, the Admin has complete authority over the system, manages the user's access, and system settings. the Panel members evaluate and provide feedback, and Students upload their thesis documents in the



research proposal (Route1, Route2, Route3, Final document) and Final defense (Route1, Route2, Route3, Final document).

The TRS website serves as the primary communication channel. It facilitates user access to the system and a database containing vital information, including the user list, thesis documents, and reviews. In such a manner, routing, controlling, and retaining all the information concerning thesis processes is much more effective and orderly.

1.5 Conceptual Diagram

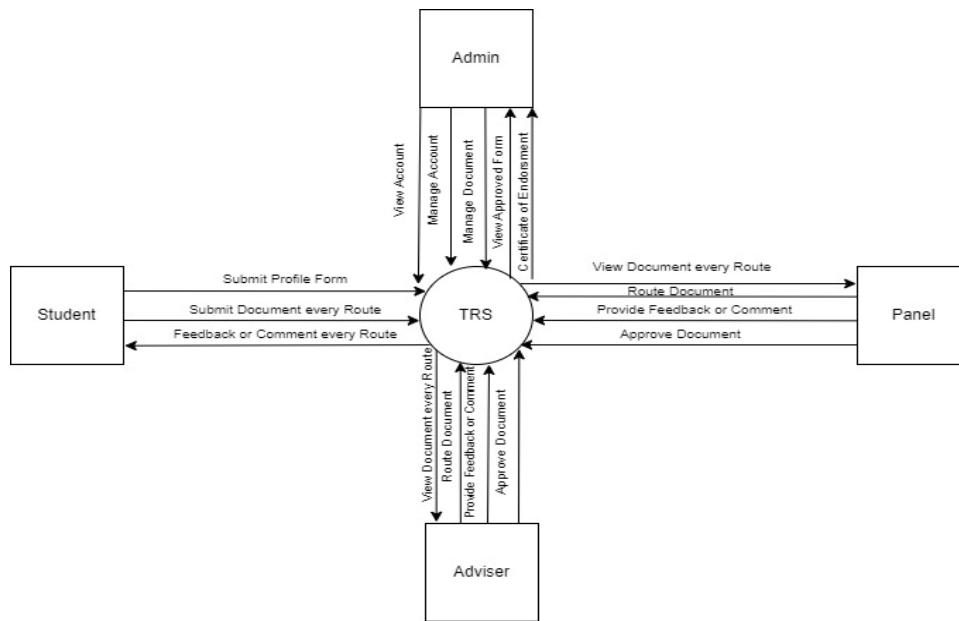


Figure 2. Conceptual Diagram

Figure 2 describes how all the user roles interact in the TRS: Student, Admin, Panel, and Adviser. This depicts how students submit profile forms and thesis documents based on the feedback at each routing stage. Admin handles the account handling of the users and gives follow-up on the document handling. The members of the panel check and route the documents, provide feedback, and approve the submissions. While advising students, offers comments and approvals. Overall, this diagram represents a collaborative workflow intent to make processes for submitting, reviewing, and approving theses more easily undertaken.



1.6 Use Case Diagram

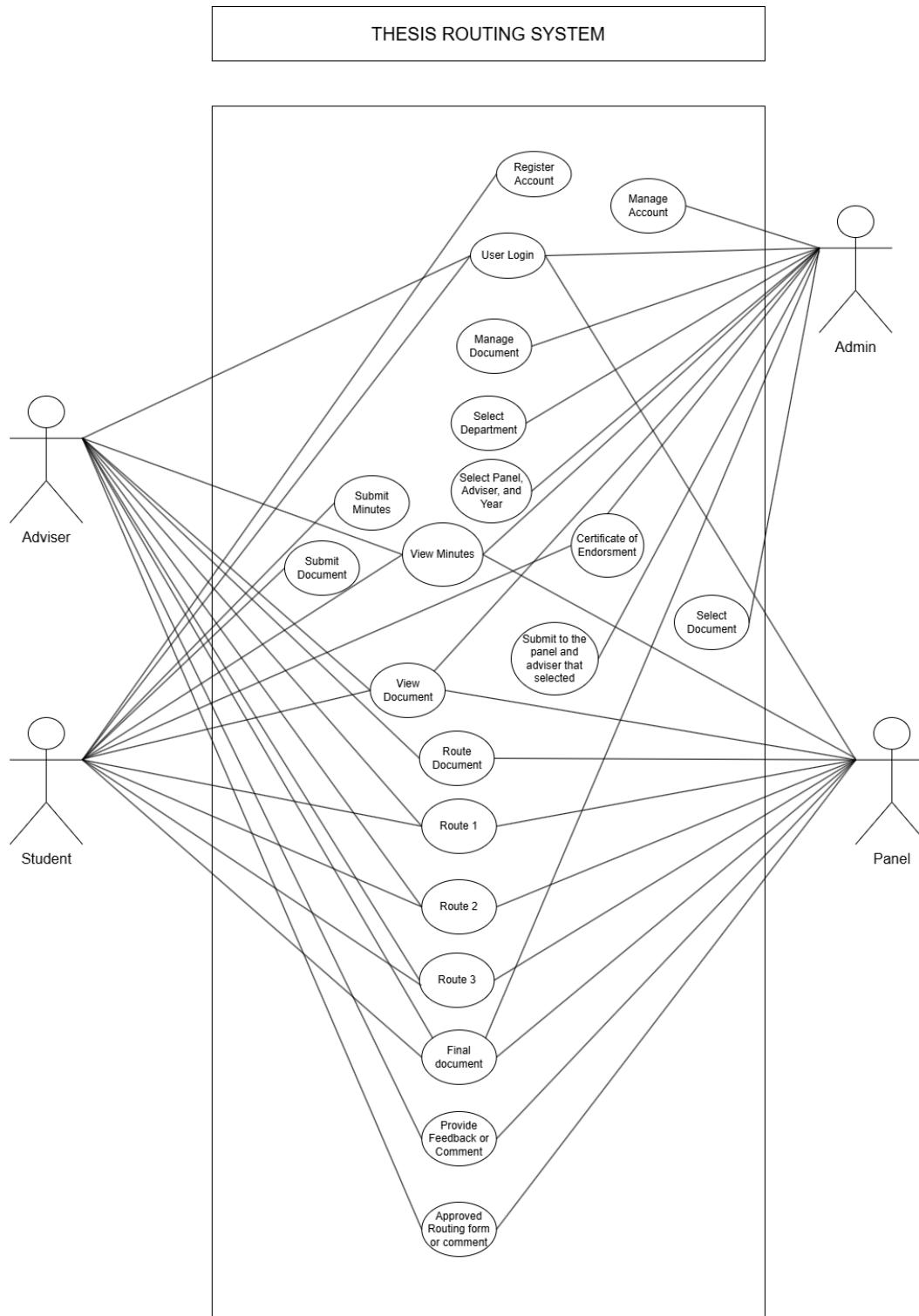


Figure 3. Use Case Diagram



Figure 3 explains the stages of the processes involved in the Thesis Routing System and mentions the interactions and processes with the students, panel, adviser, and Admin. It starts with user registration and login, providing full access to the other system functionalities. After logging in, the student will submit the thesis document using the given paths. After the submission, the advisers are the first to receive and review the submission and provide feedback. The panel members evaluate and endorse the thesis and give a recommendation. After the adviser and panel submit a routing monitoring form in route 1, the student can be processed in route 2. If the routing monitoring form from route 1 is approved, then the student can be processed in route 3 same as the final document.



3.4 Activity Diagram

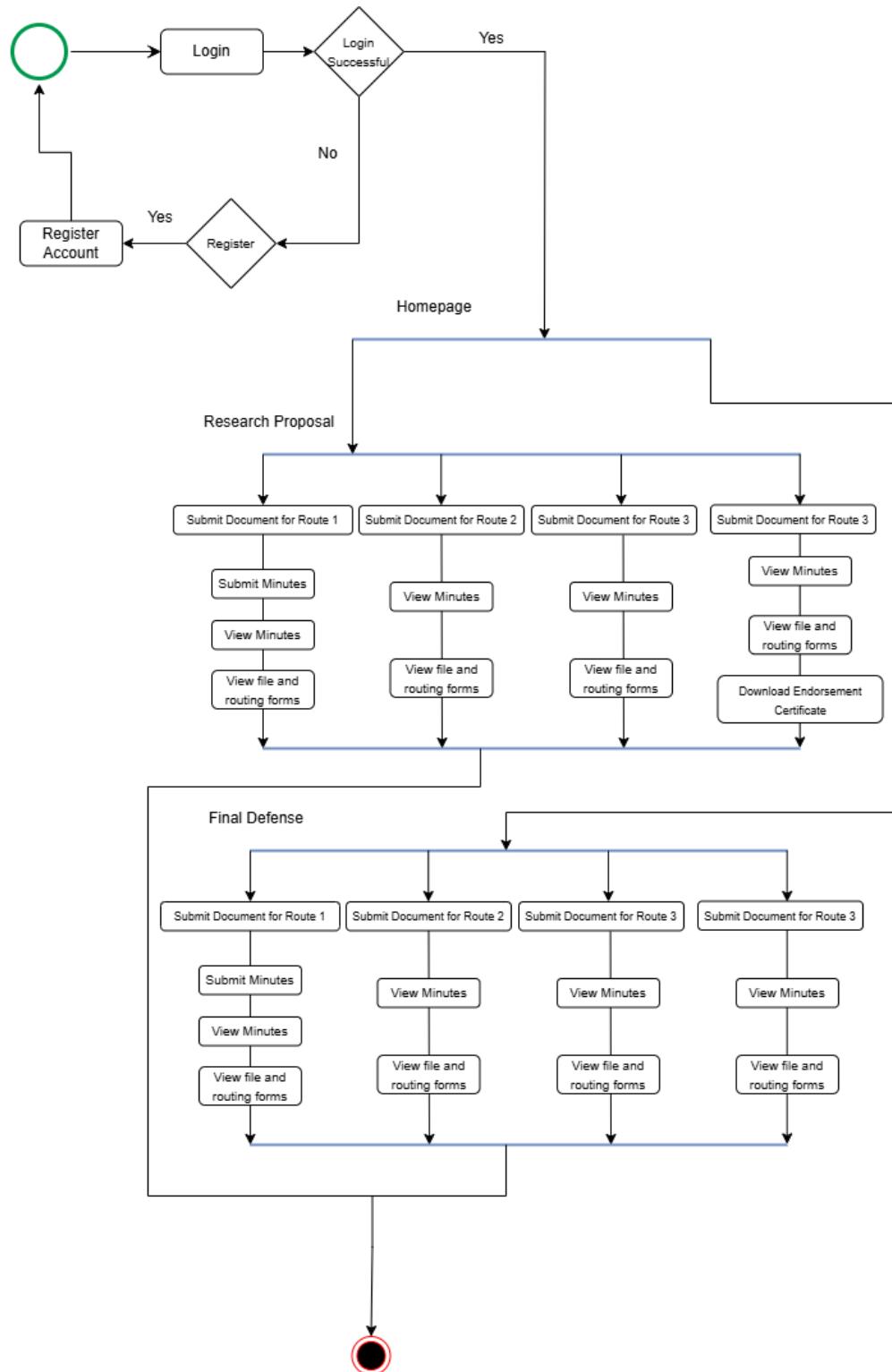


Figure 4. Activity Diagram – Students



Figure 4 illustrates the processes of registration, logging in, and uploading documents only in the PDF format. To a user, the option to log in or register is presented. If the user has not registered, the registration procedure will be undertaken. After the user registers or follows a successful login, he is taken to the homepage. He can submit thesis documents on Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document). The process ends when the documents are filed. If the user fails to log in, the user is brought back to the beginning with the expectation that the user will be able to try again.

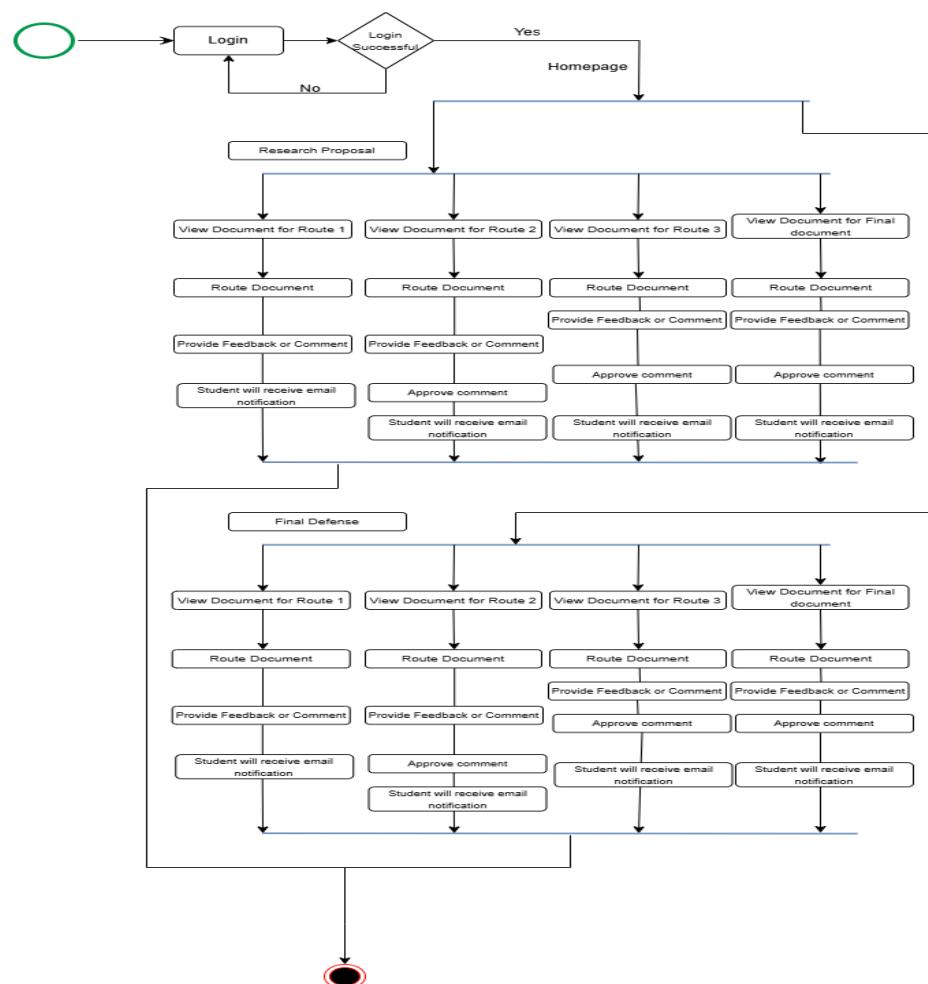


Figure 5. Activity Diagram - Panel



Figure 5 the process flow chart presented here applies to the panel. It shows the panel's mechanism for auditing and ratifying documents for different routes. After signing in, the panelists can access the documents of the Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document). Each document is then sent for evaluation to the panel, which reviews it and gives its comments before approving the documents.

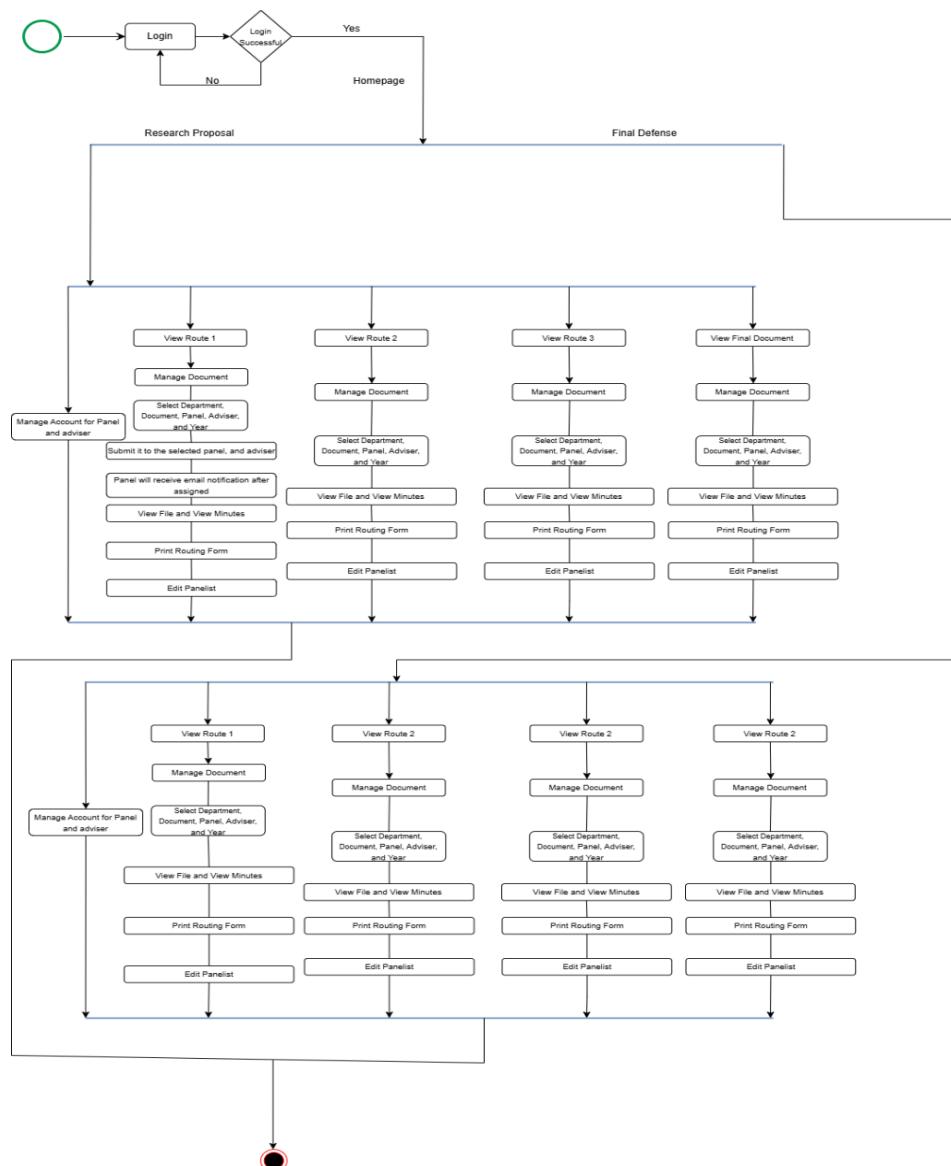


Figure 6. Activity Diagram – Admin



Figure 6 This flowchart is designed so the admin can manage routes and documents. She logs in, gets to her homepage, and views documents of every Route of Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document). She will manage documents for every Route by filling out all the relevant details, such as department, document, panel, adviser, and year. Then, this document is sent to the selected panel and adviser, and the approval of the panel will show if they have completed routing, so they can be processed to the following routing. The Admin can also manage the account.

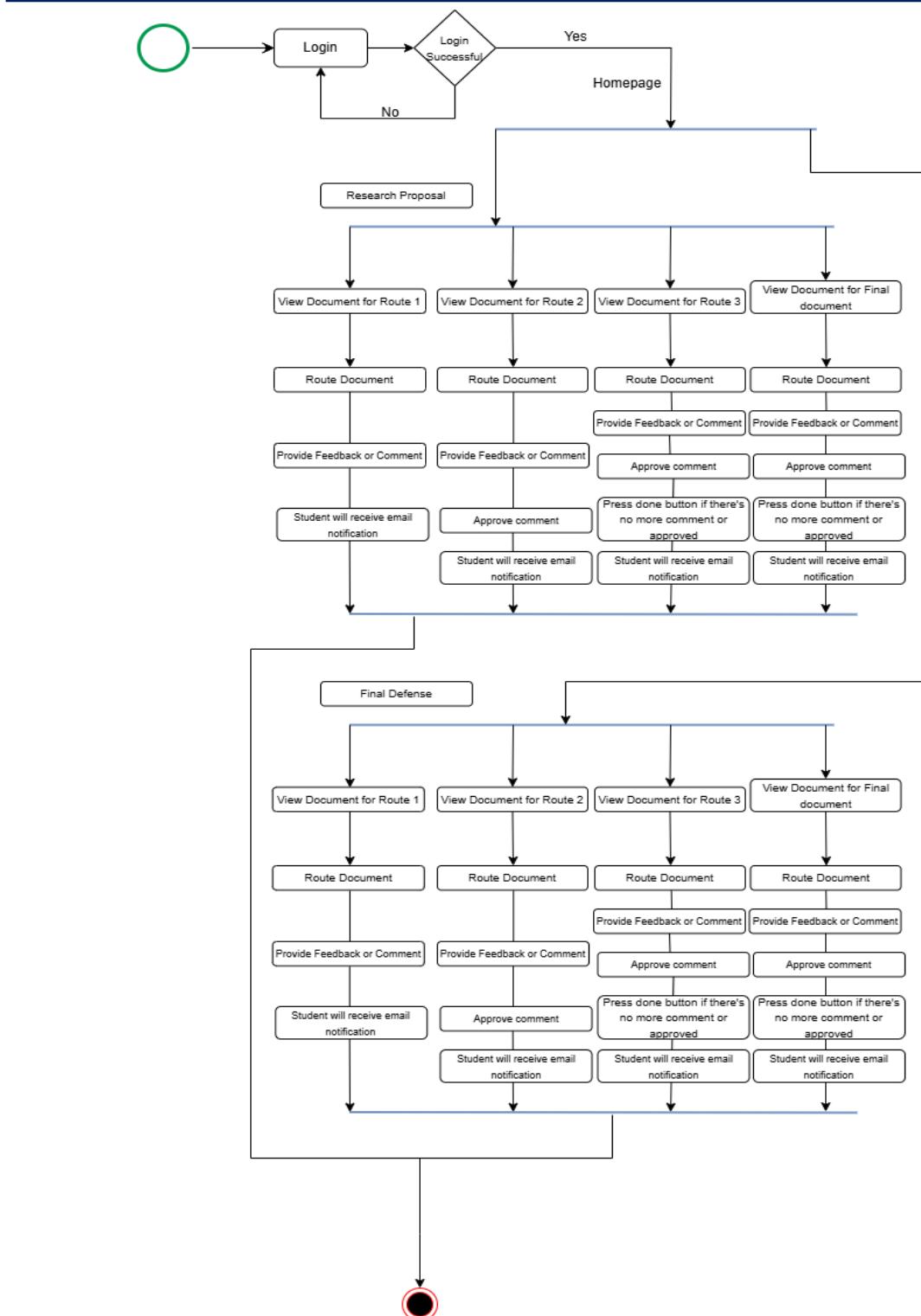


Figure 7. Activity Diagram – Adviser



Figure 7 This flow chart applies to the adviser. After the adviser logs in, it will direct him to the homepage, where he can view the Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document). Every time the adviser routes a document, he can provide feedback or comments and approve the document so it can proceed to the next Route.

3.5 Sequence Diagram

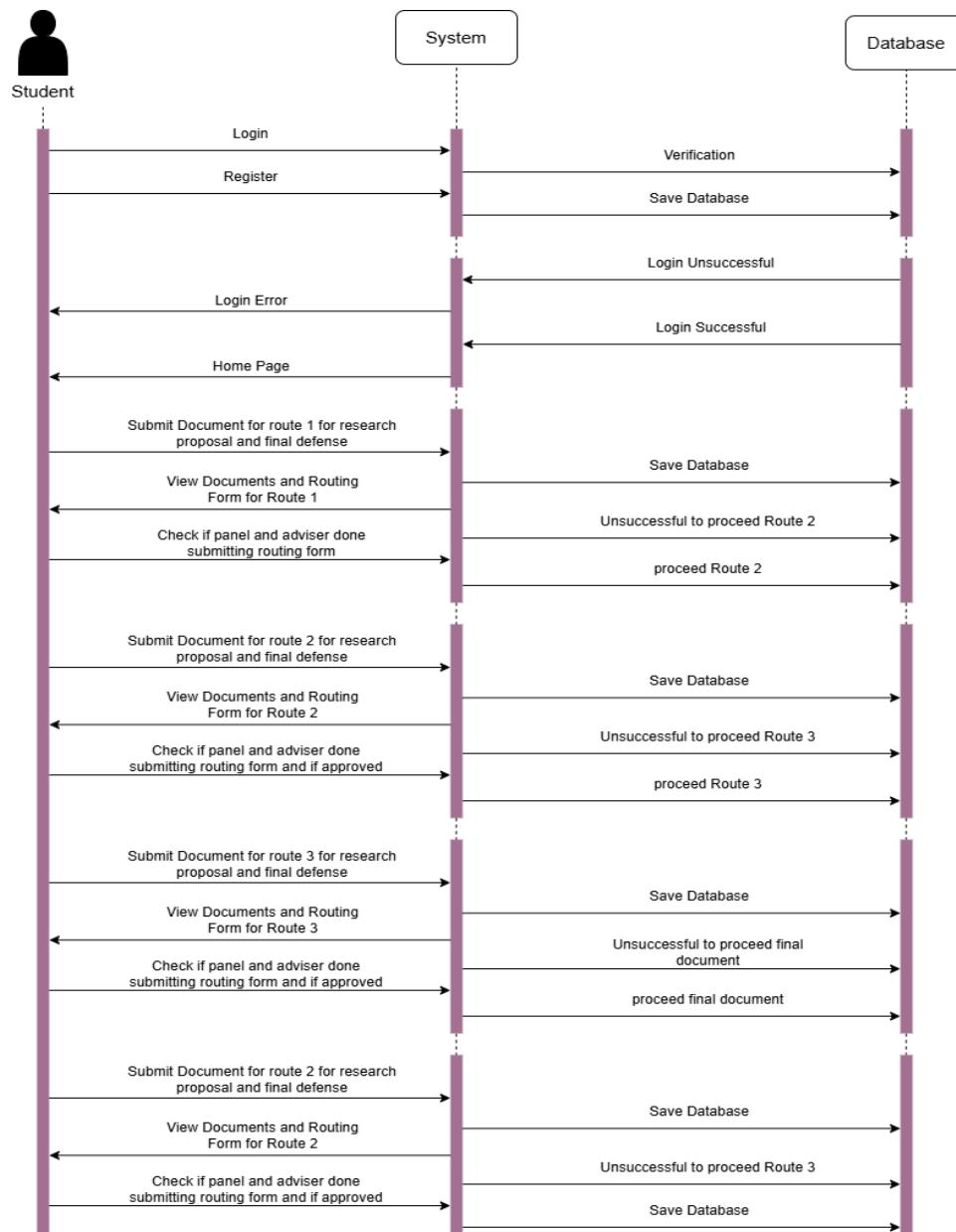


Figure 8. Sequence Diagram – Student



Figure 8 illustrates the interaction of a student system coupled with the database for a multiple-step procedure for document submission. It shows the login process, registration, and verification of the login credentials by the system, including saving the data in the database. An error is returned if the login is unsuccessful; otherwise, it is redirected to the home page. Next, the Student will complete the profile form and add relevant documents for the Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document). Each submission attempts to save a record in the database, making it impossible to check the system and ensure that the documents are well submitted. The system may allow the Student to proceed to the next Route after determining the satisfactory verification results or display a failure message indicating it was impossible to complete the current Route. This is repeated for every Route afterward. The system will make changes to the database after every step.

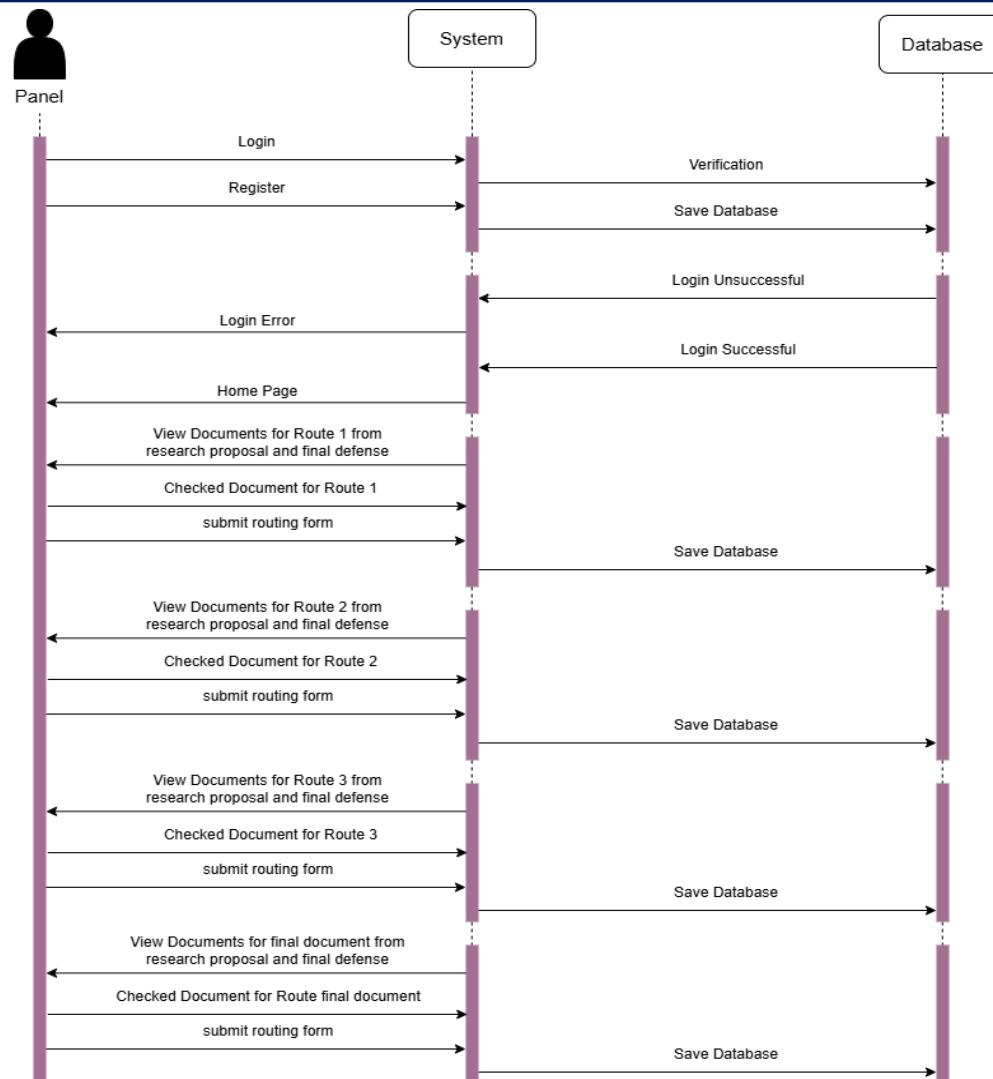


Figure 9. Sequence Diagram – Panel

Figure 9 illustrates how a panel reviews and approves all documents through three routes.

The panel logs in or registers checks user credentials and modifies the database. When the login is unsuccessful, an error appears; to the contrary, the panel is taken to the main page. Similarly, per Route, the panel can see the documents forwarded for consideration, and the system allows checking them while modifying the database. When the documents are acceptable, the panel approves them; otherwise, a message is sent that it is impossible to proceed with the process. This also applies to the three routes, thus allowing each stage to be thoroughly reviewed and updated on the system.

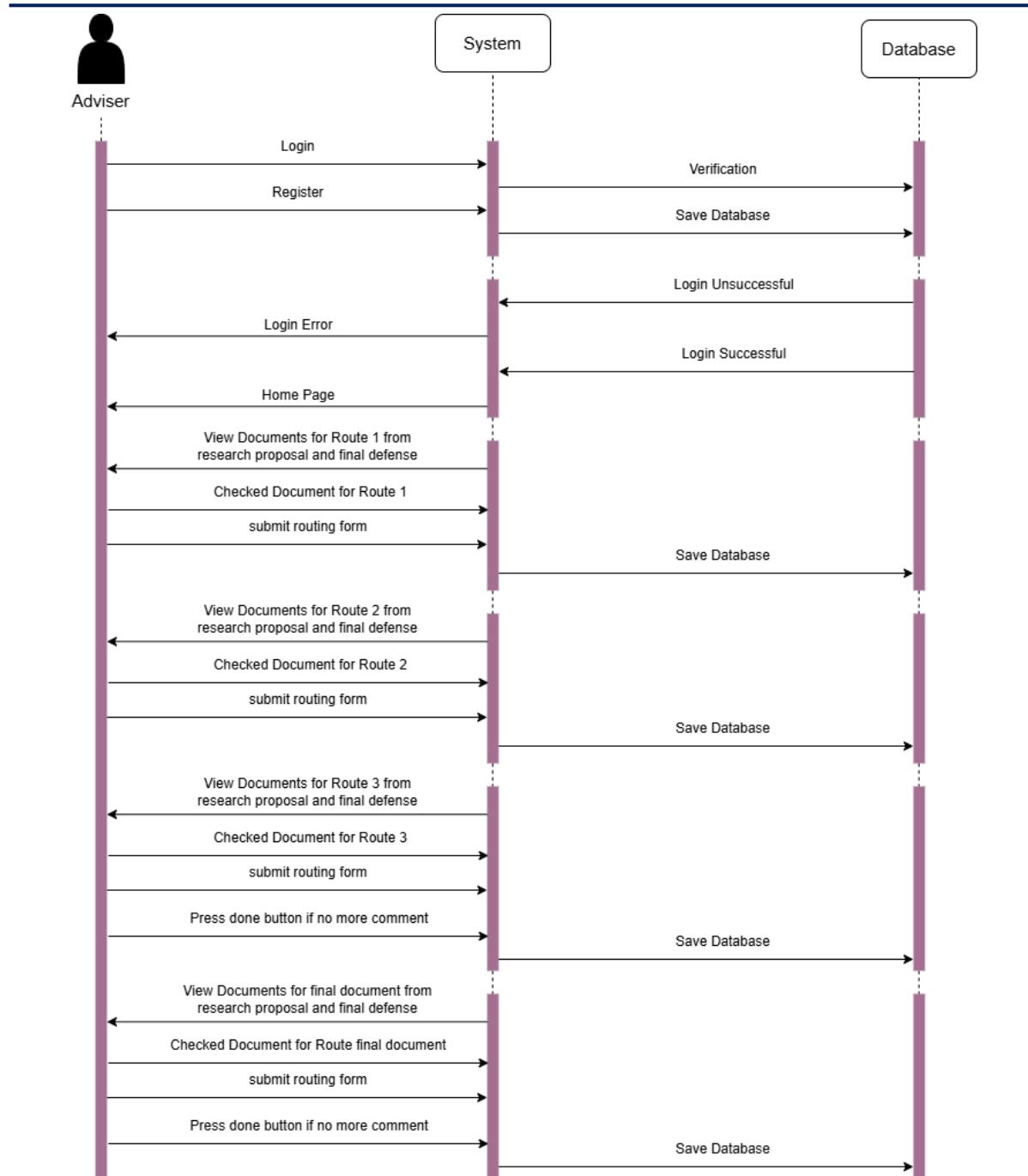


Figure 10. Sequence Diagram – Adviser

Figure 10 illustrates an adviser checking and approving documents via three paths. The adviser is either signing in or signing up, and the system checks the user and modifies the user database. In the case of unsuccessful login attempts, an error is displayed. Otherwise, the adviser



is forwarded to the home page. In each way, the adviser is shown the documents already presented, and the system scans through them and updates the system. If the papers are according to the requirements, the adviser accepts the documents; if not, a message that describes the inability to go further is sent. The same steps are taken as described in the Research proposal (Route 1, Route 2, Route 3, and the Final document) and Final Defense (Route 1, Route 2, Route 3, and the Final document) above so that everything is well-checked and the system is updated at every stage.

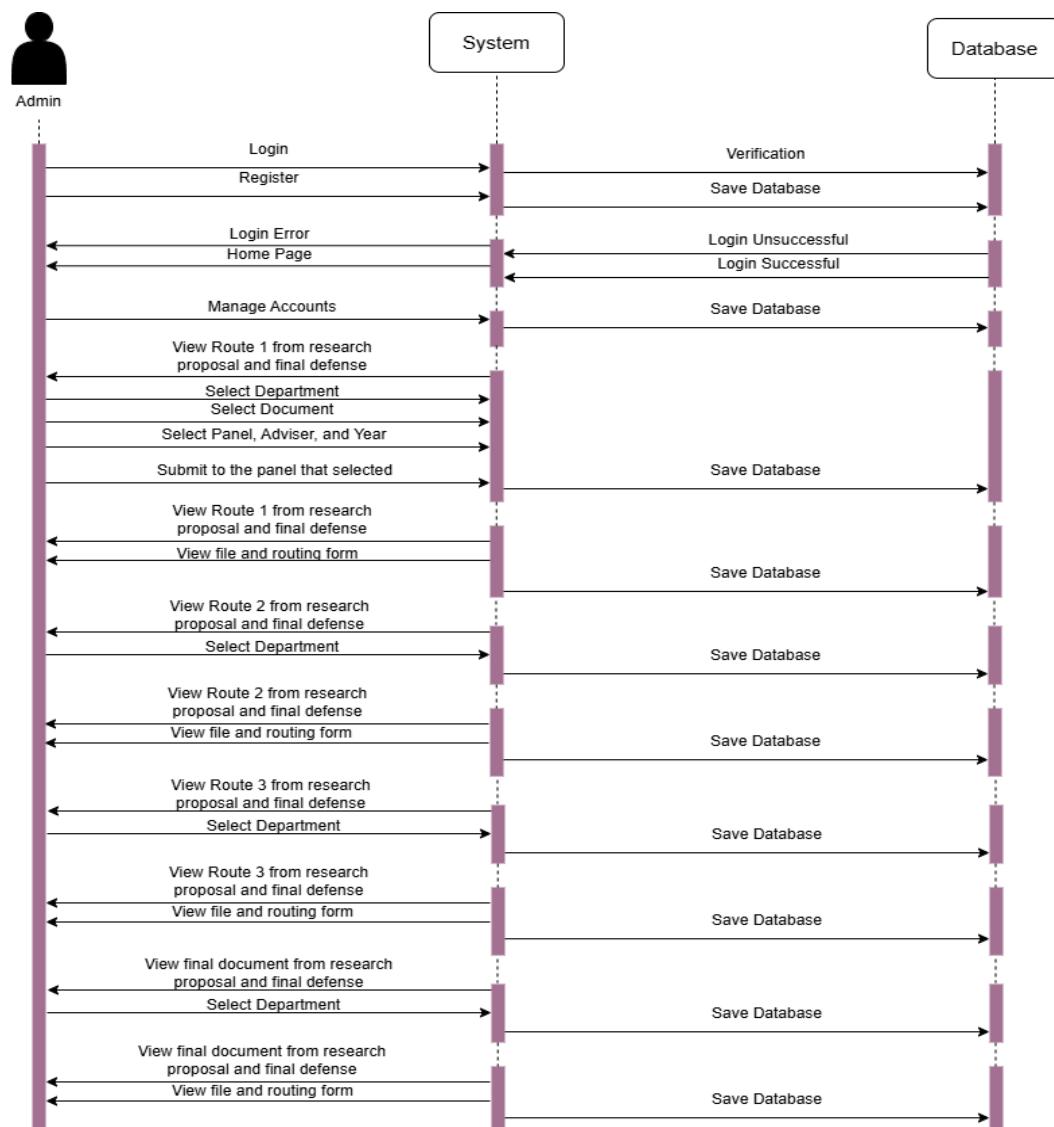


Figure 11. Sequence Diagram – Admin



Figure 11 illustrates how the Admin interacts with the system. The administrator is taken to the homepage after successfully logging in to the system. The Admin can view and control the documents from all the routing pages. If a student uploads a document, this document is, however, not sent to the adviser and panel. The file is first assessed, and the concerned department found the panels – panel1, panel2, panel3, panel4, and panel5 - assigned by the Admin. After this is completed, the file is forwarded according to the hierarchy. Once the Student completes all the routing steps that are supposed to be completed, they are given a Certificate of Endorsement.

3.6 ERD (Database Design)

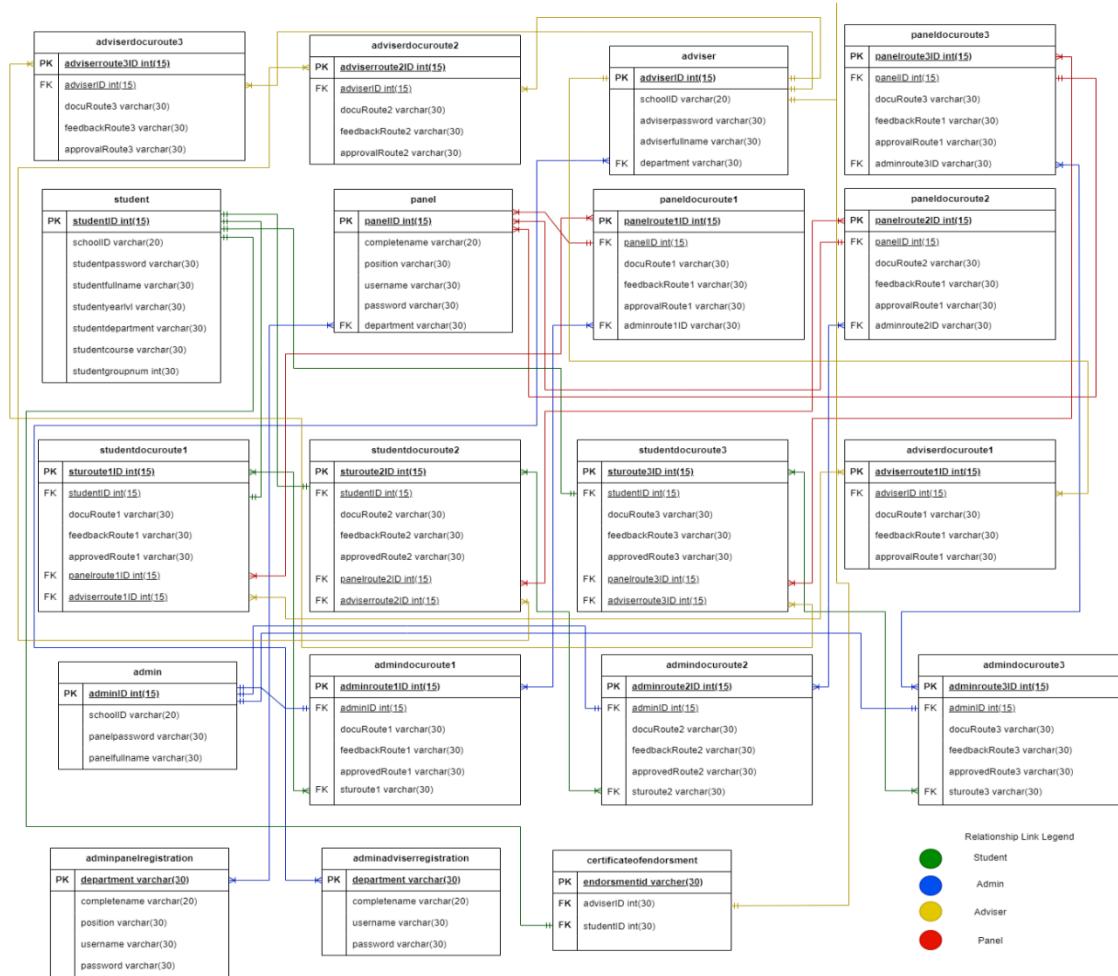


Figure 12. Entity Relationship Diagram – Database Design



Figure 12 shows a database schema for a document routing and endorsement system involving multiple entities like students, admins, advisers, and panel members. The student stores personal information and submits documents at different route stages. The Admin manages all the documents submitted by the Student and can manage the account for the panel and adviser. The panel can route the document, give feedback for every document he receives, and approve the document if there's no problem, the same as the adviser. The panel has different expertise, so there are panel1, panel2, panel3, panel4. If the Student completes all the routes, they will receive a certificate of endorsement; then the Admin will create a schedule for their final proposal.

3.7 User Interface Design (Prototype)

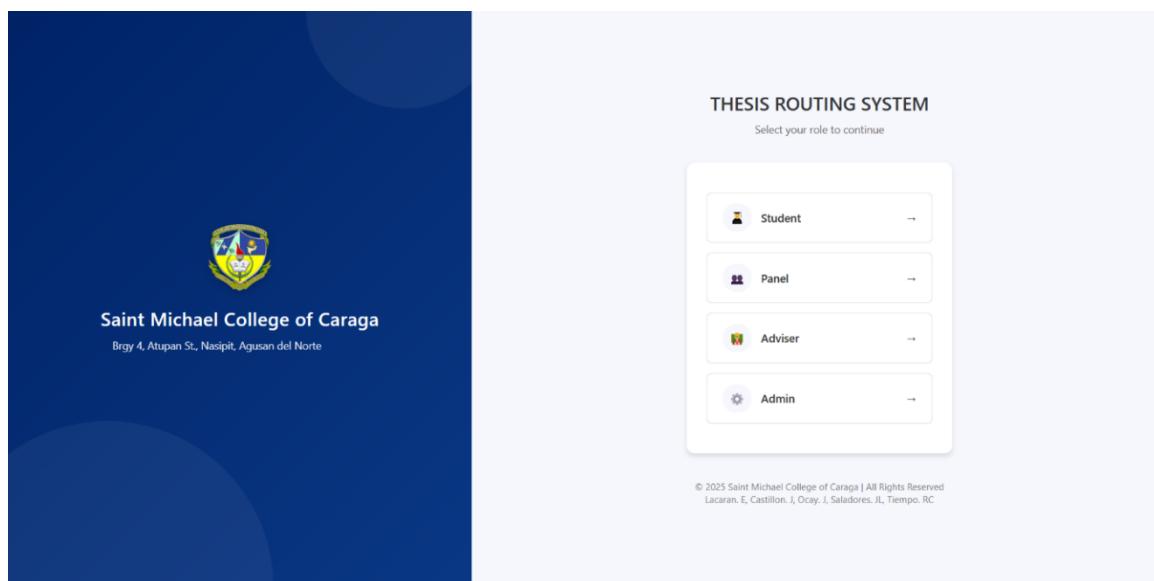
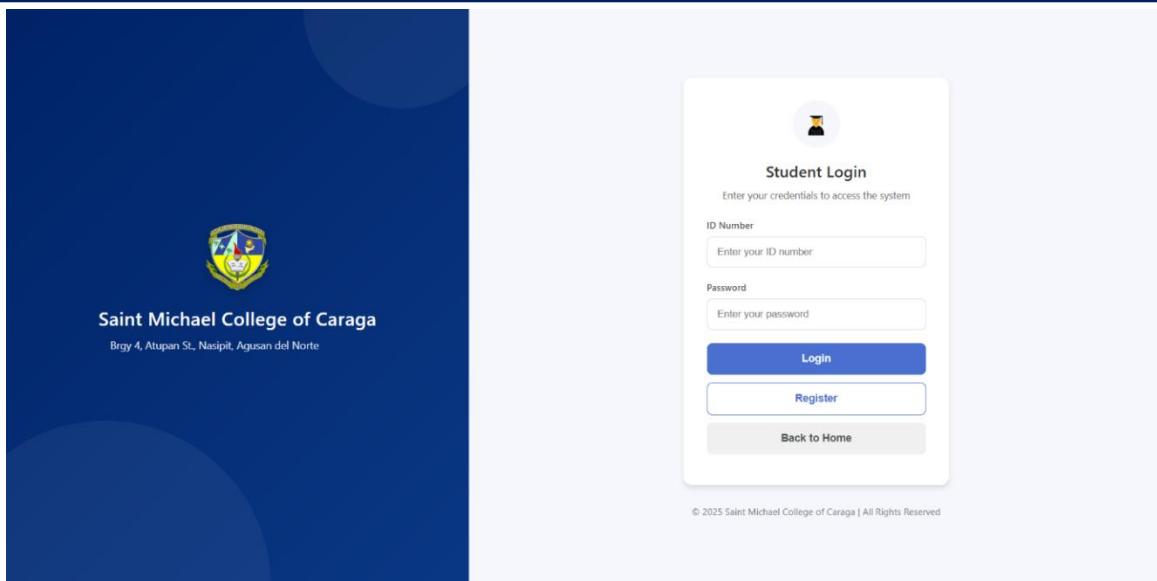


Figure 13. Landing Page

Figure 13 This is the landing page where users can choose whether they are a student, panel member, adviser, or admin.



The image shows the student login page of the Saint Michael College of Caraga website. The page has a dark blue header with the college's name and logo. The main content area is white and contains a "Student Login" form. The form includes fields for "ID Number" and "Password", both with placeholder text "Enter your ID number" and "Enter your password". Below these fields are two buttons: a blue "Login" button and a white "Register" button. At the bottom of the form is a "Back to Home" link. The footer of the page contains the copyright notice "© 2025 Saint Michael College of Caraga | All Rights Reserved".

Figure 14. Login Page - Student

Figure 14 This UI is for students to log in by entering their ID number and password. If a student doesn't have an account, he or she can register.



Student Registration

Please fill in the details to register for the Thesis Routing System

1 Thesis Information

Thesis Title

Control Number

2 Account Information

School ID

Password

Confirm Password

3 Researchers Information

Thesis Researchers

Research Leader

Additional Members

[+ Add Another Member](#)

Group Number Adviser

4 Academic Information

School Year

Department

Course

[Register](#) [Back to Login](#)

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Figure 15. Student Registration Page

Figure 15 This is where the student registers their thesis title, control number, school ID, password, research leader, and can add group members. The student also enters the group



number, adviser, and selects the school year, department, and course. Finally, they press the 'Register' button to complete the registration.

The screenshot shows the Thesis Routing System interface. At the top, there's a navigation bar with 'Home Page' and 'Submit File'. On the right, it says 'Proposal - Route 1' and 'Student: John Lester Saladores'. The main area has a table with columns: Control No., Leader, Group No., Title, and Action. One row is shown: CTHM201, John Lester Saladores, 2, MICA, with 'View' and 'Delete' buttons. To the left of the table is a sidebar with dropdown menus for 'Title Proposal' (Route 1, Route 2, Route 3, Final Document) and 'Final'. At the bottom left is a 'Logout' button.

Figure 16. Route 1 - Student

Figure 16 This UI shows the documents that were submitted for the student, the student also can check the comments by pressing the view button. and the sidebar has route1, route2, route3, and final document for the title proposal same for the final.

The screenshot shows two windows side-by-side. The left window is a PDF titled 'Certificate of Endorsement (21).pdf' from Saint Michael College of Caraga. It includes the college's logo, address, and contact information, followed by a 'CERTIFICATE OF ENDORSEMENT' section. The right window is a 'ROUTING MONITORING FORM' from the Research & Instructional Innovation Department. It has columns for Date Submitted, Chapter, Feedback, Paragraph No, Page No, Submitted By, Date Released, and Status. Several rows of data are listed, each with a timestamp of '2025-04-30', a chapter number, feedback text, page numbers, names like 'REA MIE OMAS-AS - Adviser', and 'Approved' status.

Figure 17. View Comments



Figure 17 The student can check the comments, where he can see the feedback from the panel or adviser, and also see who commented, the date submitted, and the date released. He can also see in the status whether his paper has been approved.

The screenshot shows two windows. The top window is the 'Thesis Routing System' interface. It has a sidebar with dropdown menus for 'Title Proposal' (Route 1, Route 2, Route 3, Final Document), 'Final', and 'Logout'. The main area displays a table with one row:

Control No.	Leader	Group No.	Title	Action
BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	View Delete

The bottom window is a PDF titled 'Certificate_of_Endorsement.pdf' showing the 'CERTIFICATE OF ENDORSEMENT' for Jake Castillon. The certificate includes the college's logo, contact information, and signatures of the researchers and advisor.

Figure 18. Endorsement Certificate



Figure 18 The student can now download the Endorsement Certificate once he has completed Route 1, Route 2 and Route 3 in the title proposal, and can proceed to the final.

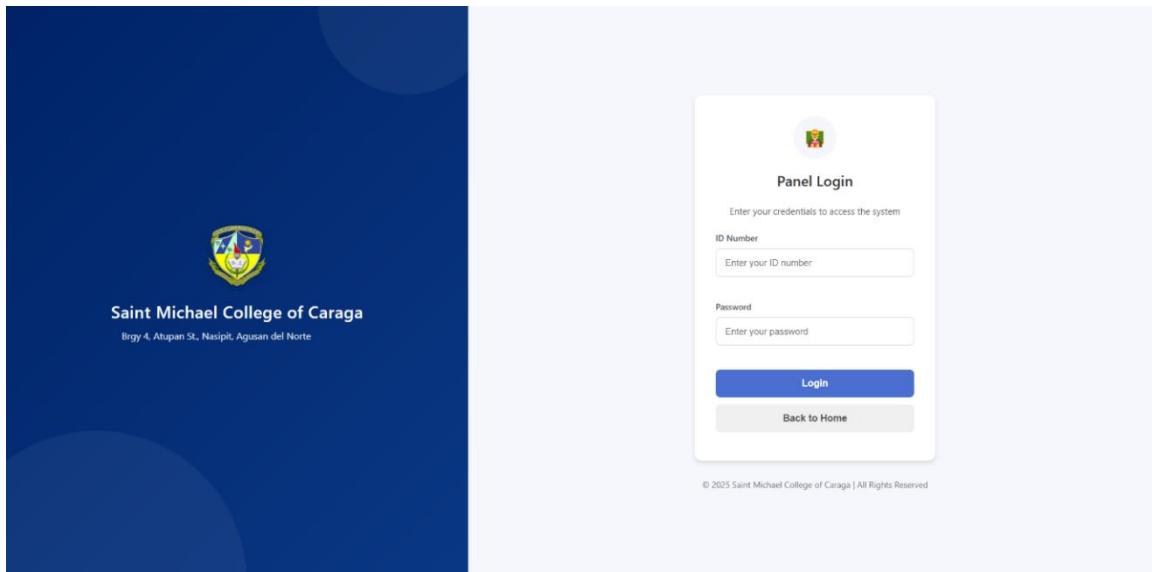


Figure 19. Login Page - Panel

Figure 19 This UI is for panel members to login using their ID number and password.

A screenshot of the Thesis Routing System. The top navigation bar includes "Home Page", "Select Department", "Proposal - Route 1", and "Panelist: Leail Palacio". A sidebar on the left lists "Title Proposal" with "Route 1", "Route 2", "Route 3", "Final Document", and "Final". The main content area displays a table of submitted files:

Control No.	Leader	Group No.	Title	Action
BSIT212	Rylvin Cefnar Tiempo	2	TRS	<button>View</button>
BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	<button>View</button>

Figure 20. Student Submitted Files



Figure 20 This UI displays documents submitted by students and assigned to the panel.

The panel member can also select which department they want to check from the dropdown at the top.

The screenshot shows two side-by-side windows. On the left is a PDF viewer displaying the 'Certificate of Endorsement (23).pdf' document. The document header includes the college's name, address, and contact information, along with logos for ECOPROTEC and AAB. The main content is the 'CERTIFICATE OF ENDORSEMENT' section, which certifies that five researchers have completed their software system and manuscript under supervision. It lists the researchers: Ell Jay Lacaran, Jake Castillon, Jenessa Oca, Rylyn Celinar Tiempo, and John Lester Salidores. Below this is a statement from the adviser, Rea Mie Omas-as, and her signature. On the right is a 'ROUTING MONITORING FORM' window titled 'SAINT MICHAEL COLLEGE OF CARAGA RESEARCH & INSTRUCTIONAL INNOVATION DEPARTMENT'. The table lists various entries with columns for Date Submitted, Chapter, Feedback, Paragraph No, Page No, Submitted By, Date Released, Status, and Action. Most entries show 'Approved' in the status column.

Figure 21. Comment for Panel

Figure 21 The panel can write comments or feedback, specifying the chapter, paragraph number, and page number that need to be revised. They can also view comments made by other panel members and the adviser, as well as see whether the paper has been approved by them.

The screenshot shows a dark blue-themed login page for the Adviser. At the top is the college's logo and name. Below it is a large input field for the ID Number, followed by another for the Password. A blue 'Login' button is centered between the fields. Below the password field is a 'Back to Home' link. At the bottom of the page is a small copyright notice: '© 2025 Saint Michael College of Caraga | All Rights Reserved'.

Figure 22. Login Page - Adviser



Figure 22 This UI is for advisers to login using their ID number and password.

The screenshot shows the Thesis Routing System interface. At the top, there's a navigation bar with the college's logo and name. Below it, a sidebar on the left lists 'Title Proposal' under 'Route 1', 'Route 2', 'Route 3', 'Final Document', and 'Final'. The main content area displays a table with two rows of proposal details:

Control No.	Leader	Group No.	Title	Action
BSIT212	Rylyn Celnar Tiempo	2	TRS	<button>View</button>
BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	<button>View</button>

At the bottom left is a 'Logout' button.

Figure 23. Students Document Submitted

Figure 23 The adviser receives the documents submitted by students, reviews them, and writes comments by clicking the 'View' button. The students and panel members can then view the feedback on their side.

The screenshot shows two windows side-by-side. On the left is a PDF viewer showing a 'Certificate of Endorsement' from Saint Michael College of Caraga. It includes the college's logo, address, and contact information. The certificate text states:

CERTIFICATE OF ENDORSEMENT

This is to certify that the following researchers have successfully completed a thorough checking and assessment of their software system and manuscript under my supervision. Therefore, I, Rea Mie Omas-as, as their Capstone/Thesis Adviser, hereby endorse them to proceed with their Final Oral Defense for the completion of their Capstone Project/Thesis in the degree of Bachelor of Science in Information Technology.

Researchers:

- Ell Jay Lacaran
- Jake Castillon
- Jenessa Ocay
- Rylyn Celnar Tiempo
- John Lester Saladores

Their project/thesis has met the required standards and criteria set forth by the College of Computing and Information Sciences, and I am confident in the quality and academic rigor of their work.

Endorsed by:
Rea Mie Omas-as
 Capstone Adviser
 April 28, 2025

On the right is a 'ROUTING MONITORING FORM' window. It has columns for Date Submitted, Chapter, Feedback, Paragraph No., Page No., Submitted By, and Date Released. There are two entries:

Date Submitted	Chapter	Feedback	Paragraph No.	Page No.	Submitted By	Date Released
2025-05-01	3	resize the text	5	2	Leail Palacio - Panel	2025-05-01
2025-05-01	2	change the font	3	3	REA MIE OMAS-AS	05/01/2025

Figure 24. Adviser Comment



Figure 24 The adviser is the first to review and provide feedback on a submitted document, before the panel members. The adviser specifies the chapter, paragraph number, and page number that need to be revised. They can also view comments made by the panel members.

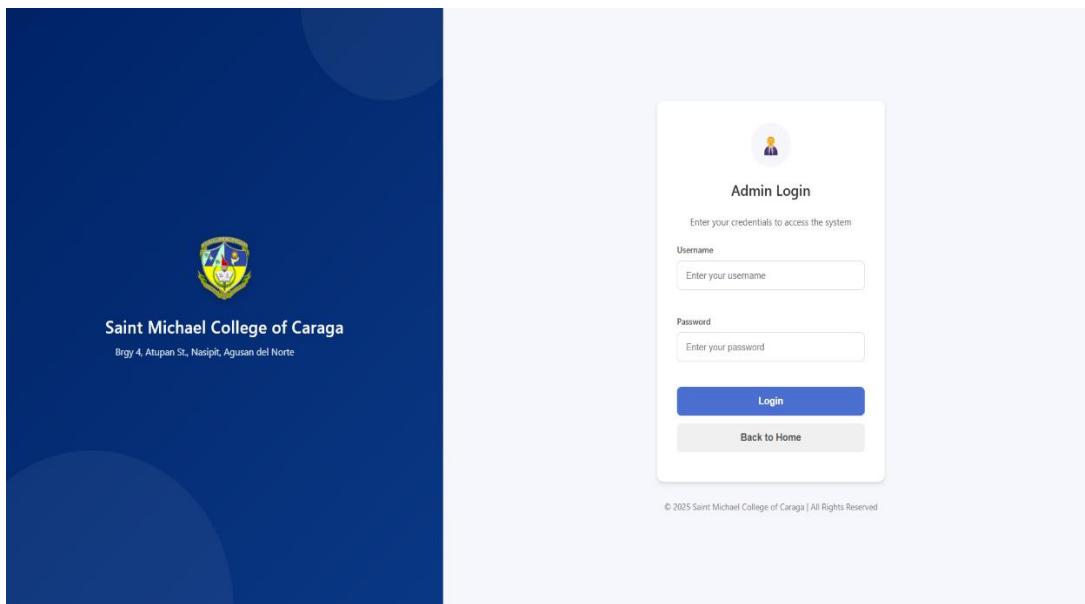


Figure 25. Login Page - Admin

Figure 25 This UI is for Admin login input username and password

The screenshot shows the Thesis Routing System Admin interface. The top navigation bar includes links for "Home Page", "College of Computing and Information Science", "All School Years", "Proposal - Route 1", and "Admin: Admin". The left sidebar has dropdown menus for "Research Proposal", "Final Defense", "Department Course", and "Registered Account". The main content area features a search bar for "Search by leader name..." and a table titled "Panel 1" with dropdown menus for "Panel 2", "Panel 3", "Panel 4", and "Panel 5". The table lists two entries:

Select	Control No.	Leader	Group No.	Title	Assigned	Action
<input type="checkbox"/>	BSIT212	Rylyn Celina Tiempo	2	TRIS	View Assignments	View
<input type="checkbox"/>	BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	View Assignments	View

A "Logout" button is located at the bottom left of the main content area.

Figure 26. Student Submitted Documents

Figure 26 The admin can select the documents submitted by the students and assign the panel members. The admin clicks the 'Submit' button to complete the assignment process. The



admin can also view which panel members are assigned to each student's document by pressing the 'View Assignments' button. Additionally, the admin can see the comments made by the panel members and the adviser by pressing the 'View' button. The admin can also search for specific documents they wish to view, and at the top, they can see the available courses and school years.

A screenshot of the Thesis Routing System interface. At the top, there is a navigation bar with a logo, the title "Thesis Routing System", and a dropdown menu showing "Admin: Admin". Below the navigation bar is a sidebar with links: "Title Proposal", "Final", "Department Course", "Department Course", and "Registered Account". The main content area is titled "Department and Course Management". It contains a table with columns "Department", "Course", and "Action". The table lists various academic programs: College of Business and Management (BSBA - Financial Management, BSBA - Human Resource Management, BSBA - Marketing Management), College of Computing and Information Science (BS of Information Technology's, BS in Computer Science), College of Teacher Education (Bachelor of Elementary Education), College of Tourism and Hospitality Management (Bachelor of Science in Tourism Management, Bachelor of Science in Hospitality Management). Each row has an "Edit" button in the "Action" column. A blue button labeled "Add Department & Course" is located at the top right of the table area. At the bottom left of the main content area, there is a "Logout" button.

Department	Course	Action
College of Business and Management	BSBA - Financial Management	Edit
College of Business and Management	BSBA - Human Resource Management	Edit
College of Business and Management	BSBA - Marketing Management	Edit
College of Computing and Information Science	BS of Information Technology's	Edit
College of Computing and Information Science	BS in Computer Science	Edit
College of Teacher Education	Bachelor of Elementary Education	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Tourism Management	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Hospitality Management	Edit

Figure 27. Department and Course Management

Figure 27 The admin can view all the available departments and courses. The admin also has the expertise to add new departments and courses, and can update or edit them as needed.



Thesis Routing System

Home Page Admin: Admin

- Title Proposal
- Final
- Department Course
- Registered Account
 - Panel
 - Adviser
 - Student

List of Registered Panel

Position	Full Name	Department	School ID	Password	Action
panel4	123	College of Computing and Information Science	1123	123	Edit
panel3	Daisa O. Gupit	College of Computing and Information Science	Daisa	123	Edit
panel1	Kenneth Barrera	Research Office	kenneth	123	Edit
panel2	Leaili Palacio	College of Computing and Information Science	apple	123	Edit
panel4	Marlon John Timogin	College of Computing and Information Science	marlon	123	Edit

[Logout](#)

Figure 28. Panel Registered Accounts

Figure 28 The admin can also view all the registered panel members and has the ability to add or edit panel members.

Thesis Routing System

Home Page Admin: Admin

- Title Proposal
- Final
- Department Course
- Registered Account
 - Panel
 - Adviser
 - Student

List of Registered Advisers

Full Name	Department	School ID	Password	Action
Lianne Pace	College of Tourism and Hospitality Management	201	123	Edit
REA MIE OMAS-AS	College of Computing and Information Science	reamie	123	Edit

[Logout](#)

Figure 29. Adviser Registered Accounts

Figure 29 The admin can also view all the registered advisers and has the ability to add or edit advisers.



The screenshot shows the Thesis Routing System interface. At the top, there's a navigation bar with a logo, the title "Thesis Routing System", and a user status "Admin: Admin". On the left, a sidebar menu includes "Title Proposal", "Final", "Department Course", "Registered Account" (which is expanded to show "Panel", "Adviser", and "Student"), and a "Logout" button. The main content area is titled "Panelist Registration" and contains four input fields: "Complete Name" (with placeholder "First name / Middle name / Last name"), "Department", "Position" (with placeholder "Panel1, Panel2, Panel3, Panel4"), and "School ID". Below these is a "Password" field. A blue "Register" button is located at the bottom right of the form.

Figure 30. Panel Registration

Figure 30 The admin can create panel accounts by entering the full name, department, position, school ID, and password, then pressing the 'Register' button to complete the registration.

This screenshot is identical to Figure 30, showing the "Panelist Registration" page. The title is "Adviser Registration" and the fields are the same: "Complete Name", "Department", "Position", "School ID", and "Password", with a "Register" button at the bottom.

Figure 31. Adviser Registration

Figure 31 The admin can create adviser accounts by entering the full name, department, school ID, and password, then pressing the 'Register' button to complete the registration.



Thesis Routing System

Home Page Admin: Admin

Title Proposal
Final
Department Course
Registered Account

Panel
Adviser
Student

Logout

Full Name	Department	School ID	Password	Action
Ell jay Lacaran	College of Computing and Information Science	202251330	123	Edit
Jake Castillon	College of Computing and Information Science	202251243	123	Edit
Jenessa Ocay	College of Computing and Information Science	123	123	Edit
John Lester Saladores	College of Tourism and Hospitality Management	202251252	123	Edit
Rylvin Celnar Tiempo	College of Computing and Information Science	202251468	123	Edit

Figure 32. List of Registered Students

Figure 32 Here, the admin can see all the registered student accounts along with their full name, department, school ID, and password. The admin can also edit the full name, department, or password if a student requests it. for example, if they forgot their password or made a mistake during registration.



3.8 Software Platforms, Development Environment and Tools

Table 1

Software Requirements

Components	Specification	Usage
Internet Browser	Any	Internet browsers make accessing and rendering web pages easier, allowing users to surf the World Wide Web. This loads the web server, which connects the users to the TRS and allows access to its features upon successful login.
Front-end	HTML	HTML serves as the structural foundation of web pages. It allows you to define the arrangement and structure of content components, including text, graphics, and forms.
	CSS	By improving the graphical design of HTML elements, CSS makes it possible to customize layouts, colors, fonts, and spacing to produce aesthetically pleasing and responsive designs.
	Bootstraps	Bootstrap is a front-end framework that simplifies building responsive, mobile-first websites with pre-designed components and a flexible grid system.
	JavaScript	JavaScript enhances web pages with flexible functionality and interactive elements, enabling developers to add



		features such as animations and rapid modifications that react to user input.
Server	XAMPP/ Apache	The XAMPP Control Panel controls every XAMPP component's behavior. It ensures smooth functioning by enabling easy access to text servers like Apache and MySQL.
Back-end	MySQL (Database)	MySQL is an open-source software program that enables developers' access to a wide range of features and functions that guarantee efficient data management. phpMyAdmin's user-friendly interface facilitates many tasks, such as managing databases, tables, columns, users, and running queries.
	PHP	PHP is used in the system to provide dynamic output from static web pages. PHP is a server-side programming language that makes connecting the front end to the backend or database easier by handling the user's data input utilizing an MVC architectural design.



3.9 Hardware Requirements

Table 2

Hardware Requirements

Components	Specification	Usage
Device	Ram	Electronic devices such as computers, laptops, smartphones, and tablets utilize RAM. It allows rapid access to your system's stored information is enabled via Random Access Memory (RAM), which acts as temporary storage.
	Processor	The Central Processing Unit, also known as the processor, is the brain of a computing device. It handles data processing and carries out computations and instructions. It has various cores that work on different tasks simultaneously.
	HDD	HDD and SSD are primarily used for computer and laptop storage, while mobile devices such as smartphones and tablets use flash storage. These are used to store data such as applications, multimedia, programs, and the operating system.
	SDD	
	Flash Storage	
Printer	Any Ink Jet	An inkjet printer is a device that prints text, images, and graphics on paper using ink. It is more widely used and typically less expensive. This reliable option is ideal for daily printing tasks because it can produce high-quality prints for various documents and images
	Printer Units	



CHAPTER 4

SOFTWARE DEVELOPMENT AND TESTING

This chapter offers a comprehensive description of all major activities involved in the design and testing of the Thesis Routing System (TRS). It comprises a discussion of strategies employed in the system development process, the precise steps taken in the construction process, and activities undertaken for the system's maintenance throughout its entire life.

4.1 Development Process

The systematic software development process of the Online Request of Credentials System (ORCS) is illustrated through the input-process-output diagram shown in Figure #.

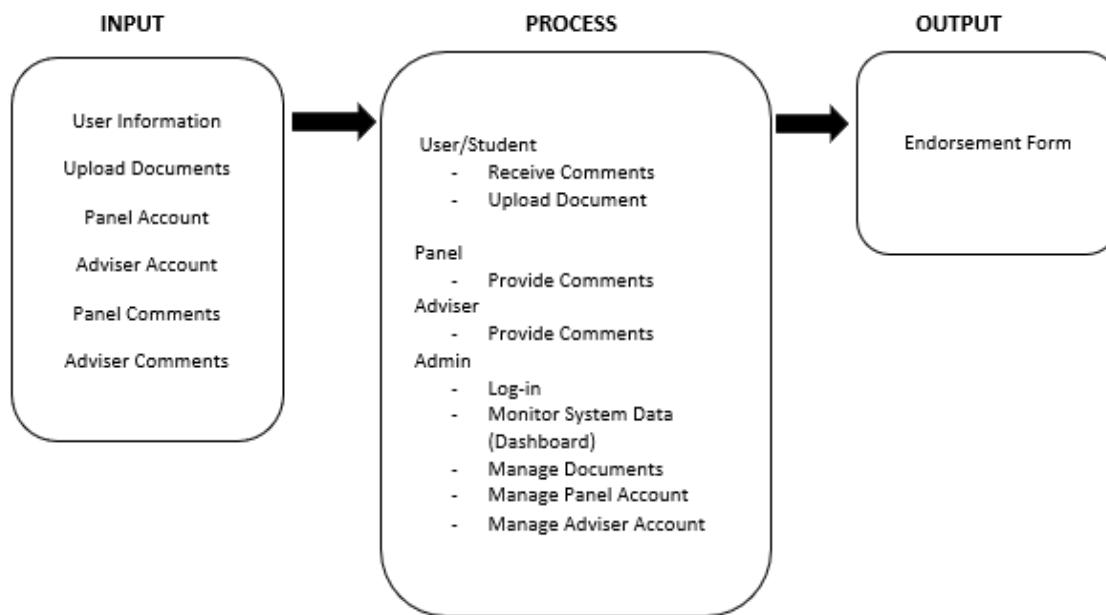


Figure 33. Input-Process-Output Diagram

Input

The input "User Information," "Upload Documents," "Panel Account," "Adviser Account," "Panel Comments," and "Adviser Comments" represent essential data elements processed within the system. User Information contains details about individuals accessing the system, ensuring proper identification and role assignment. Upload Documents allows users to submit their



documents so the panel and adviser can critique them. The Panel Account is assigned to panel members who review submissions and provide expert feedback, while the Adviser Account is designated for advisers guiding users through the process. Panel Comments and Adviser Comments serve as communication tools, enabling panel members and advisers to provide critiques, suggestions, and necessary revisions. These inputs collectively support document management, user authentication, and feedback integration within the system.

Process

The system follows a structured process that provides for various user roles. Users/Students who can upload documents for review and obtain feedback from both panel members and advisers. Panel members are responsible for reviewing all submissions and issuing comments, whereas advisers evaluate the documents and give advice. The admin checks the overall management of the entire process by logging in and monitoring system data through the dashboard, managing documents, and managing both panel and adviser accounts. This whole workflow guarantees the efficient submission of documents, structured feedback on them, and effective management of the system.

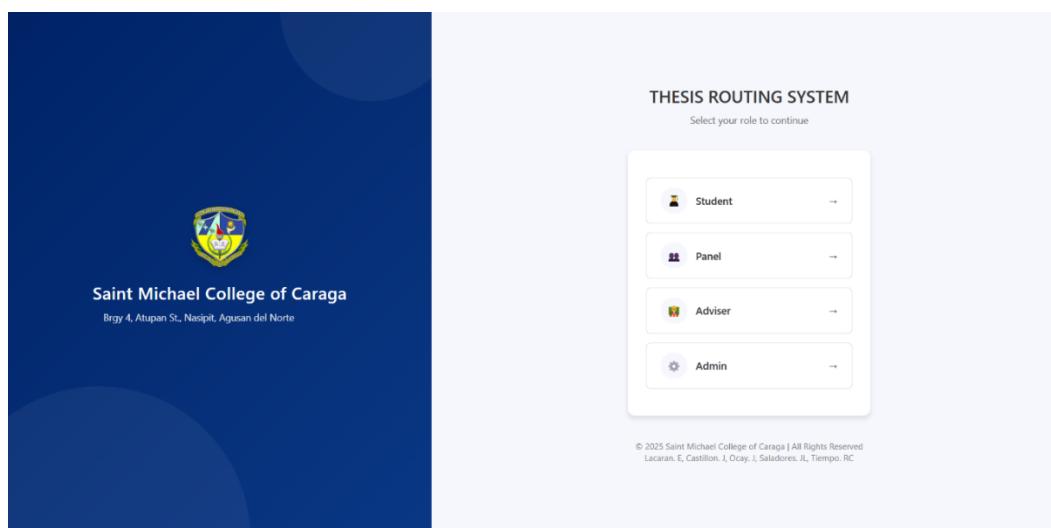


Figure 34. Landing Page



Figure 34 This is the landing page where users can choose whether they are a student, panel member, adviser, or admin.

```
<div class="right-panel">
    <div class="system-title">
        <h2>THESIS ROUTING SYSTEM</h2>
        <p>Select your role to continue</p>
    </div>

    <div class="role-buttons">
        <a href="student/login.php" class="role-button">
            <div class="role-icon">👤</div>
            <div class="role-text">Student</div>
            <div>&gt;</div>
        </a>

        <a href="panel/login.php" class="role-button">
            <div class="role-icon">👥</div>
            <div class="role-text">Panel</div>
            <div>&gt;</div>
        </a>

        <a href="adviser/login.php" class="role-button">
            <div class="role-icon">💡</div>
            <div class="role-text">Adviser</div>
            <div>&gt;</div>
        </a>

        <a href="admin/login.php" class="role-button">
            <div class="role-icon">⚙️</div>
            <div class="role-text">Admin</div>
            <div>&gt;</div>
        </a>
    </div>
```

Figure 35. Code Snippet for Landing Page

Figure 35 This HTML code shows a login page for a "Thesis Routing System" with four role-selection buttons (Student, Panel, Adviser, and Admin), each linking to a different login page and featuring a unique icon beside the role name



Figure 36. Login Page - Student

Figure 36 This UI is for students to log in by entering their ID number and password. If a student doesn't have an account, he or she can register.

```

if ($_SERVER["REQUEST_METHOD"] === "POST") {
    // Retrieve and sanitize inputs
    $school_id = mysqli_real_escape_string($conn, $_POST['school_id']);
    $password = mysqli_real_escape_string($conn, $_POST['password']);

    // Query to fetch user details
    $sql = "SELECT * FROM student WHERE school_id = '$school_id'";
    $result = $conn->query($sql);

    if ($result->num_rows > 0) {
        // User exists, fetch data
        $row = $result->fetch_assoc();
        $stored_password = $row['password']; // Plain-text password stored here

        // Compare entered password with stored plain-text password
        if ($password === $stored_password) {
            // Set session variables
            $_SESSION['student_id'] = $row['student_id'];
            $_SESSION['fullname'] = $row['fullname'];
            $_SESSION['school_id'] = $row['school_id'];
        }
    }
}

```

Figure 37. Code Snippet for Login Page - Student



Figure 37 This PHP code handles a student login POST request by retrieving and sanitizing the school ID and password inputs, querying the database to find the student.

Student Registration

Please fill in the details to register for the Thesis Routing System

1 Thesis Information

Thesis Title

Control Number

2 Account Information

School ID

Password

Confirm Password

3 Researchers Information

Thesis Researchers

Research Leader

Additional Members

+ Add Another Member

Group Number

Adviser

4 Academic Information

School Year

Department

Course

Actions

Register **Back to Login**

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Figure 38. Student Registration Page



Figure 38 This is where the student registers their thesis title, control number, school ID, password, research leader, and can add group members. The student also enters the group number, adviser, and selects the school year, department, and course. Finally, they press the 'Register' button to complete the registration.

```

if ($_SERVER["REQUEST_METHOD"] === "POST") {
    // Retrieve and sanitize inputs
    $school_id = mysqli_real_escape_string($conn, $_POST['school_id']);
    $password = mysqli_real_escape_string($conn, $_POST['password']);
    $confirm_password = mysqli_real_escape_string($conn, $_POST['confirm_password']);
    $fullname = mysqli_real_escape_string($conn, $_POST['fullname']);
    $school_year = mysqli_real_escape_string($conn, $_POST['school_year']);
    $department = mysqli_real_escape_string($conn, $_POST['department']);
    $course = mysqli_real_escape_string($conn, $_POST['course']);

    $adviser = mysqli_real_escape_string($conn, $_POST['adviser']);
    $group_number = mysqli_real_escape_string($conn, $_POST['group_number']);
    $members = isset($_POST['member_fullname']) ? $_POST['member_fullname'] : [];
    $group_members = json_encode($members); // Now properly defined
    $controlNo = mysqli_real_escape_string($conn, $_POST['controlNo']);
    $title = mysqli_real_escape_string($conn, $_POST['title']);

    // Validate passwords match
    if ($password !== $confirm_password) {
        echo "<script>alert('Passwords do not match!'); window.history.back();</script>";
        exit;
    }

    // Insert data into the database (no need for student_id since it's auto-incremented)
    $sql = "INSERT INTO student (title, controlNo, school_id, password, confirm_password,
        VALUES ('$title', '$controlNo', '$school_id', '$password', '$confirm_password',
        if ($conn->query($sql) === TRUE) {
            // Get the auto-generated student_id
            $student_id = $conn->insert_id;
            echo "<script>alert('Registration successful!'); window.location.href = 'register.php';
        } else {
            echo "<script>alert('Error: " . addslashes($conn->error) . "'); window.history.back();
        }
    }
}

```

Figure 39. Code Snippet (Query) for Registration Page

Figure 39 This PHP code handles a student registration form submission by sanitizing form inputs (school ID, passwords, personal details, and thesis information), validating that passwords



match, inserting the data into a database table with auto-incremented student_id, and redirecting to a registration confirmation page upon success or displaying an error message if the query fails.

A screenshot of the Thesis Routing System interface. The top navigation bar includes "Home Page" and "Submit File" on the left, and "Proposal - Route 1" and "Student: John Lester Saladores" on the right. A sidebar on the left lists "Title Proposal" (with "Route 1", "Route 2", "Route 3", and "Final" options), "Control No.", "Leader", "Group No.", "Title", and "Action" columns. The main content area shows a single row of data: Control No. CTHM201, Leader John Lester Saladores, Group No. 2, Title MICA, and Action buttons for "View" and "Delete". At the bottom left is a "Logout" button.

Control No.	Leader	Group No.	Title	Action
CTHM201	John Lester Saladores	2	MICA	<button>View</button> <button>Delete</button>

Figure 40. Route 1 - Student

Figure 40 This UI shows the documents that were submitted for the student, the student also can check the comments by pressing the view button. and the sidebar has route1, route2, route3, and final document for the title proposal same for the final.



```
if (isset($_FILES["docuRoute1"]) && $_FILES["docuRoute1"]["error"] == UPLOAD_ERR_OK) {  
    $fileTmpPath = $_FILES["docuRoute1"]["tmp_name"];  
    $fileName = $_FILES["docuRoute1"]["name"];  
    $uploadDir = "../../uploads/";  
    $filePath = $uploadDir . basename($fileName);  
  
    $allowedTypes = [  
        "application/pdf",  
        "application/vnd.openxmlformats-officedocument.wordprocessingml.document"  
    ];  
  
    if (in_array($_FILES["docuRoute1"]["type"], $allowedTypes)) {  
        if (!is_dir($uploadDir)) {  
            mkdir($uploadDir, 0777, true);  
        }  
  
        // Check if the student already uploaded a file  
        $stmt = $conn->prepare("SELECT COUNT(*) FROM route1proposal_files WHERE student_id = ? AND adviser_id = ?");  
        $stmt->bind_param("ss", $student_id, $department);  
        $stmt->execute();  
        $stmt->bind_result($count);  
        $stmt->fetch();  
        $stmt->close();  
  
        if ($count > 0) {  
            echo "<script>alert('You can only upload one file.');" . $count . "</script>";  
            exit;  
        } elseif (move_uploaded_file($fileTmpPath, $filePath)) {  
            // Insert the new file info including adviser_id  
            $stmt = $conn->prepare("INSERT INTO route1proposal_files (student_id, docuRoute1, adviser_id) VALUES (?, ?, ?)");  
            if ($stmt) {  
                $stmt->bind_param("sssis", $student_id, $filePath, $department, $co  
                if ($stmt->execute()) {  
                    echo "<script>alert('File uploaded successfully.');" . $stmt->affected_rows . "</script>";  
                } else {  
                    echo "<script>alert('Error saving record: " . $stmt->error . "'");  
                }  
                $stmt->close();  
            }  
        }  
    }  
}
```

Figure 41. Code Snippet for Documents - Student

Figure 41 This PHP code handles document uploads for a thesis routing system by checking if a file was successfully uploaded, validating the file type (allowing only PDF and Word documents).



Certificate_of_Endorsement (2).pdf

Saint Michael College of Caraga
Brgy. 4, Nasipit, Agusan del Norte, Philippines
Tel. Nos. +63 085 343-3251 / +63 085 263-3113
Fax No. +63 085 809-0992
www.smcocaraga.edu.ph

CERTIFICATE OF ENDORSEMENT

This is to certify that the following researchers have successfully completed a thorough checking and assessment of their software system and manuscript under my supervision. Therefore, I, Rea Mie Omas-as, as their Capstone/Thesis Adviser, hereby endorse them to proceed with their Final Oral Defense for the completion of their Capstone Project/Thesis in the degree of Bachelor of Science in Information Technology.

Researchers:

1. Ell Jay Lacaran
2. Jake Castillon
3. Jenessa Ocay
4. Ryvlin Celinar Tiempo
5. John Lester Saladores

Their project/thesis has met the required standards and criteria set forth by the College of Computing and Information Sciences, and I am confident in the quality and academic rigor of their work.

Endorsed by:
Rea Mie Omas-as
Capstone Adviser
April 28, 2025

SAINT MICHAEL COLLEGE OF CARAGA
RESEARCH & INSTRUCTIONAL INNOVATION DEPARTMENT

ROUTING MONITORING FORM

Date Submitted	Chapter	Feedback	Paragraph No	Page No	Submitted By	Date Released	Status
2025-04-30	2	Feedback	2	2	REA MIE OMAS-AS - Adviser	2025-04-30	Approved
2025-04-30	2	feedback	2	3	Kenneth Barrera - Panel	2025-04-30	Approved
2025-04-30	1	change the font size	3	3	Lealli Palacio - Panel	2025-04-30	Approved
2025-04-30	4	feedback	2	2	Dalita O. Gupit - Panel	2025-04-30	Approved
2025-04-30	1	Change the font size	2	2	Marlon John Timogan - Panel	2025-04-30	Approved
2025-04-30	3	Feedback	2	2	REA MIE OMAS-AS - Adviser	2025-04-30	Approved

Figure 42. View Comments

Figure 42 The student can check the comments, where he can see the feedback from the panel or adviser, and also see who commented, the date submitted, and the date released. He can also see in the status whether his paper has been approved.



```
<hr style="border: 1px solid black; margin: 0.2rem 0; >
<div style="margin-top: 1rem; margin-bottom: 30px; display: flex;
    <h4 style="margin: 0;">ROUTING MONITORING FORM</h4>
</div>

<!-- Header row for submitted forms -->
<div class="form-grid-container" style="margin-top: 20px;">
    <div><strong>Date Submitted</strong></div>
    <div><strong>Chapter</strong></div>
    <div><strong>Feedback</strong></div>
    <div><strong>Paragraph No</strong></div>
    <div><strong>Page No</strong></div>
    <div><strong>Submitted By</strong></div>
    <div><strong>Date Released</strong></div>
</div>

<!-- Container for submitted form data -->
<div id="submittedFormsContainer" class="form-grid-container"></div>
<div id="noFormsMessage" style="margin-top: 10px; color: gray;"><hr>;
;

// Load form data dynamically using route1_id
fetch(`get_all_forms.php?route1_id=${encodeURIComponent(route1_id)}`)
    .then(res => res.json())
    .then(data => {
        console.log("Fetched forms:", data);
        const rowsContainer = document.getElementById("submittedFormsContainer");

        if (!Array.isArray(data) || data.length === 0) {
            rowsContainer.innerHTML = `<div style="grid-column: span 100%; border: 1px solid black; padding: 10px; text-align: center; font-weight: bold;">No forms found.
```

Figure 43. Code Snippet for Monitoring Form



Figure 43 This JavaScript code viewing the monitoring form and the document submitted by the student.

The screenshot shows a web-based thesis routing system. At the top, there's a navigation bar with links for 'Home Page' and 'Submit File'. On the right side of the header, there are buttons for 'Download Endorsement Certificate', 'Proposal - Final Document', and a dropdown menu showing 'Student: Jake Castillon'. Below the header, there's a sidebar on the left with a tree view titled 'Title Proposal' containing 'Route 1', 'Route 2', 'Route 3', 'Final Document', and 'Final'. The main content area features a table with columns: 'Control No.', 'Leader', 'Group No.', 'Title', and 'Action'. One row is visible with the values: BSIT2024, Jake Castillon, 2, 'Thesis Routing System of Saint Michael College', and buttons for 'View' and 'Delete'. At the bottom left of the main area, there's a 'Logout' button.

The screenshot shows a PDF document titled 'Certificate_of_Endorsement.pdf'. The header includes the college's logo, address (Brgy. 4, Nasipit, Agusan del Norte, Philippines), contact numbers (Tel. No.: +63 085 343-3251 / +63 085 283-3113; Fax No.: +63 085 808-0892), and website (www.smcncaraga.edu.ph). The document is titled 'CERTIFICATE OF ENDORSEMENT'. It states that researchers have successfully completed a thorough checking and assessment of their software system and manuscript under supervision. It lists two researchers: Jake Castillon and Eli Jay Lacaran. It mentions that their project/thesis has met required standards and criteria set forth by the College of Computing and Information Sciences. It is endorsed by REA MIE OMAS-AS, Capstone Adviser, on May 1, 2025. It is approved by MARLON JUHN M. TIMOGAN, MIT, Capstone Project/Thesis Instructor, on May 1, 2025. The PDF is viewed in a browser window.

Figure 44. Endorsement Certificate

Figure 44 The student can now download the Endorsement Certificate once he has completed Route 1, Route 2 and Route 3 in the title proposal, and can proceed to the final.



```
// Download Endorsement Certificate
document.getElementById('downloadButton').addEventListener('click', function()
  const adviserName = `<?= $adviser ?>`;
  const studentNames = `<?= $allStudents ?>`;

  const url = `../titleproposal/generate_endorsement_pdf.php?adviserName=${(adviserName)}&student=${encodeURIComponent(studentNames)}`;
  window.location.href = url;
});
```

Figure 45. Code Snippet for Endorsement

Figure 45 This JavaScript code adds a click event listener to a download button that generates an endorsement certificate PDF by constructing a URL with the adviser's name and student names.

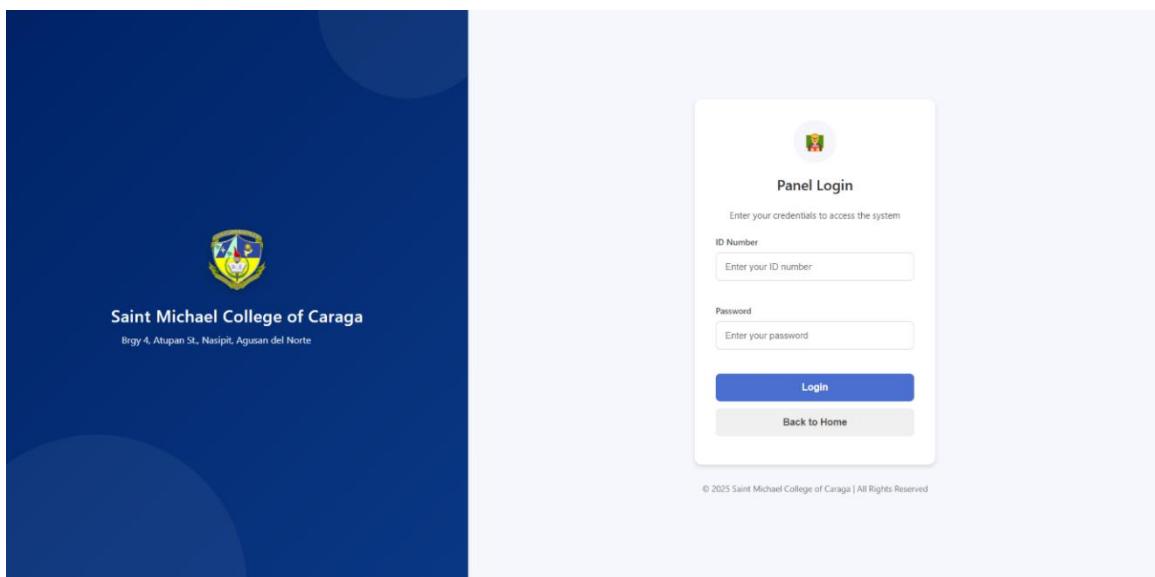


Figure 46. Login Page - Panel

Figure 46 This UI is for panel members to login using their ID number and password.



```
if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    // Get form data
    $school_id = $_POST['school_id'];
    $password = $_POST['password'];

    // Validate input
    if (empty($school_id) || empty($password)) {
        echo "<script>alert('School ID and Password are required!'); window.location.href='login.php';</script>";
    } else {
        // Prepare SQL query
        $stmt = $conn->prepare("SELECT * FROM panel WHERE school_id = ?");
        $stmt->bind_param("s", $school_id);
        $stmt->execute();
        $result = $stmt->get_result();

        if ($result->num_rows > 0) {
            // Fetch adviser data
            $panel = $result->fetch_assoc();

            // Verify password by direct comparison (since it's plain text)
            if ($password === $panel['password']) {
                // Store adviser details in session
                $_SESSION['panel_id'] = $panel['panel_id']; // Store adviser ID
                $_SESSION['school_id'] = $panel['school_id'];
                $_SESSION['fullname'] = $panel['fullname'];

                // Redirect to adviser dashboard
                header("Location: homepage/homepage.php");
                exit();
            }
        }
    }
}
```

Figure 47. Login Page - Panel

Figure 47 This PHP code handles a panel login by validating the submitted school ID and password.



The screenshot shows the Thesis Routing System interface. At the top, there is a navigation bar with links for "Home Page", "Select Department" (dropdown), "Proposal - Route 1", and "Panelist: Leaili Palacio". On the left, a sidebar menu includes "Title Proposal" (selected), "Route 1", "Route 2", "Route 3", "Final Document", and "Final" (dropdown). In the center, a table lists submitted documents:

Control No.	Leader	Group No.	Title	Action
BSIT212	Rylyn Cefnar Tiempo	2	TRS	View
BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	View

At the bottom left is a "Logout" button.

Figure 48. Student Submitted Files

Figure 48 This UI displays documents submitted by students and assigned to the panel.

The panel member can also select which department they want to check from the dropdown at the top.



```
$stmt->execute();
$result = $stmt->get_result();

if ($result->num_rows > 0) {
    echo "
        <table>
            <thead>
                <tr>
                    <th>Control No.</th>
                    <th>Leader</th>
                    <th>Group No.</th>
                    <th>Title</th>
                    <th>Action</th>
                </tr>
            </thead>
            <tbody>
";
}

while ($row = $result->fetch_assoc()) {
    $filePath = htmlspecialchars($row['docuRoute1'], ENT_QUOTES);
    $route1_id = htmlspecialchars($row['route1_id'], ENT_QUOTES);
    $student_id = htmlspecialchars($row['student_id'], ENT_QUOTES);
    $fileName = basename($filePath);
    $controlNo = htmlspecialchars($row['controlNo'], ENT_QUOTES);
    $fullname = htmlspecialchars($row['fullname'], ENT_QUOTES);
    $groupNo = htmlspecialchars($row['group_number'], ENT_QUOTES);
    $title = htmlspecialchars($row['title'], ENT_QUOTES);

    echo "
        <tr>
            <td>$controlNo</td>
            <td>$fullname</td>
            <td>$groupNo</td>
            <td>$title</td>
            <td style='text-align: center;'>
                <button class='view-button' onclick=\"$viewFile('$filePath', '$route1_id', '$student_id')\">View</button>
            </td>
        </tr>
";
}


```

Figure 49. Code Snippet (Query) for Documents

Figure 49 This PHP code through the result set to display student thesis information in table rows with sanitized data, including a "view" button that triggers a JavaScript function to open the document file.



 <p>Saint Michael College of Caraga Brgy. 4, Nasugbu, Agusan del Norte, Philippines Tel. No. +63 085 343-2511 / +63 085 283-3113 Fax No. +63 085 808-0892 www.smcconsept.edu.ph</p>	 																																																																																								
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ROUTING MONITORING FORM																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date Submitted</th> <th>Chapter</th> <th>Feedback</th> <th>Paragraph No</th> <th>Page No</th> <th>Submitted By</th> <th>Date Released</th> <th>Status</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>2025-04-30</td> <td>2</td> <td>Feedback</td> <td>2</td> <td>2</td> <td>RE AIE OMAS-AS - Advisor</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>2025-04-30</td> <td>2</td> <td>feedback</td> <td>2</td> <td>3</td> <td>Kenneth Barrera - Panel</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>2025-04-30</td> <td>1</td> <td>change the font size</td> <td>3</td> <td>3</td> <td>Leilis Palacio - Panel</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>2025-04-30</td> <td>4</td> <td>feedback</td> <td>2</td> <td>2</td> <td>Datso G. Gujuit - Panel</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>2025-04-30</td> <td>1</td> <td>Change the font size</td> <td>2</td> <td>2</td> <td>Malton John Timpaneo - Panel</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>2025-04-30</td> <td>3</td> <td>Feedback</td> <td>2</td> <td>2</td> <td>RE AIE OMAS-AS - Advisor</td> <td>2025-04-30</td> <td>Approved</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td colspan="5"></td> <td>Marlon John T</td> <td>09 / 01 / 2025</td> <td><input type="button" value="Print"/></td> <td></td> </tr> <tr> <td colspan="9" style="text-align: center;">2025-05-01</td> </tr> </tbody> </table>									Date Submitted	Chapter	Feedback	Paragraph No	Page No	Submitted By	Date Released	Status	Action	2025-04-30	2	Feedback	2	2	RE AIE OMAS-AS - Advisor	2025-04-30	Approved	<input type="button" value="Save"/>	2025-04-30	2	feedback	2	3	Kenneth Barrera - Panel	2025-04-30	Approved	<input type="button" value="Save"/>	2025-04-30	1	change the font size	3	3	Leilis Palacio - Panel	2025-04-30	Approved	<input type="button" value="Save"/>	2025-04-30	4	feedback	2	2	Datso G. Gujuit - Panel	2025-04-30	Approved	<input type="button" value="Save"/>	2025-04-30	1	Change the font size	2	2	Malton John Timpaneo - Panel	2025-04-30	Approved	<input type="button" value="Save"/>	2025-04-30	3	Feedback	2	2	RE AIE OMAS-AS - Advisor	2025-04-30	Approved	<input type="button" value="Save"/>						Marlon John T	09 / 01 / 2025	<input type="button" value="Print"/>		2025-05-01								
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Figure 50. Comment for Panel

Figure 50 The panel can write comments or feedback, specifying the chapter, paragraph number, and page number that need to be revised. They can also view comments made by other panel members and the adviser, as well as see whether the paper has been approved by them.



```

function loadAllForms(route1_id) {
    const formDataContainer = document.getElementById("submittedFormsContainer");
    const noFormsMessage = document.getElementById("noFormsMessage");
    const toggleButton = document.getElementById("toggleFormsBtn");

    // Show loading spinner
    formDataContainer.innerHTML = "<div style='grid-column: span 7; display: flex; align-items: center; justify-content: center; height: 100px;'><img alt='Loading spinner' style='width: 20px; height: 20px;'></div>";

    // Fetch data
    fetch('get_all_forms.php?route1_id=' + route1_id)
        .then(response => response.json())
        .then(data => {
            formDataContainer.innerHTML = ""; // Clear old content first

            if (!data || data.length === 0) {
                noFormsMessage.innerText = "No routing forms submitted yet.";
                return;
            }

            noFormsMessage.innerText = ""; // Clear message if forms exist

            data.forEach(row => {
                let submittedBy = "N/A";
                if (row.adviser_name) {
                    submittedBy = `${row.adviser_name} - Adviser`;
                } else if (row.panel_name) {
                    submittedBy = `${row.panel_name} - Panel`;
                }

                formDataContainer.innerHTML += `
                    <div>${row.date_submitted}</div>
                    <div>${row.chapter}</div>
                    <div>${row.feedback}</div>
                    <div>${row.paragraph_number}</div>
                    <div>${row.page_number}</div>
                    <div>${submittedBy}</div>
                    <div>${row.date_released}</div>
                `;
            });
        });

        toggleButton.textContent = "Show less";
        formsVisible = true;
}

```

Figure 51. Code Snippet (Query) for Comment of Panel

Figure 51 This JavaScript code viewing the monitoring form and the document submitted by the student.



Figure 52. Login Page - Adviser

Figure 52 This UI is for advisers to login using their ID number and password.

```

if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    // Get form data
    $school_id = $_POST['school_id'];
    $password = $_POST['password'];

    // Validate input
    if (empty($school_id) || empty($password)) {
        echo "<script>alert('School ID and Password are required!'); window.";
    } else {
        // Prepare SQL query
        $stmt = $conn->prepare("SELECT * FROM adviser WHERE school_id = ?");
        $stmt->bind_param("s", $school_id);
        $stmt->execute();
        $result = $stmt->get_result();

        if ($result->num_rows > 0) {
            // Fetch adviser data
            $adviser = $result->fetch_assoc();

            // Verify password by direct comparison (since it's plain text n
            if ($password === $adviser['password']) {
                // Store adviser details in session
                $_SESSION['adviser_id'] = $adviser['adviser_id']; // Store a
                $_SESSION['school_id'] = $adviser['school_id'];
                $_SESSION['fullname'] = $adviser['fullname'];

                // Redirect to adviser dashboard
                header("Location: homepage/homepage.php");
                exit();
            } else {
                echo "<script>alert('Incorrect password!'); window.history.b
            }
        }
    }
}

```

Figure 53. Code Snippet for Adviser



Figure 53 This PHP code handles a adviser login by validating the submitted school ID and password.

A screenshot of a web-based thesis routing system. The header reads "Thesis Routing System" and "Home Page". On the left, there's a sidebar with dropdown menus for "Title Proposal" (Route 1, Route 2, Route 3, Final Document) and "Final". At the bottom of the sidebar is a "Logout" button. The main content area shows a table with two rows of submitted documents. The columns are "Control No.", "Leader", "Group No.", "Title", and "Action".

Control No.	Leader	Group No.	Title	Action
BSIT212	Rylvin Celnar Tiempo	2	TRS	<button>View</button>
BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	<button>View</button>

Figure 54. Students Document Submitted

Figure 54 The adviser receives the documents submitted by students, reviews them, and writes comments by clicking the 'View' button. The students and panel members can then view the feedback on their side.



```
<div class="content" id="content-area">
    <?php
    $query = "
        SELECT
            docuRoute1,
            student_id,
            route1_id,
            department,
            group_number,
            controlNo,
            fullname,
            title
        FROM route1proposal_files
        WHERE adviser_id = ?
        " . ($selectedDepartment ? " AND department = ?" : "");
    ";
    $stmt = $conn->prepare($query);

    if ($selectedDepartment) {
        $stmt->bind_param("ss", $adviser_id, $selectedDepartment);
    } else {
        $stmt->bind_param("s", $adviser_id);
    }

    $stmt->execute();
    $result = $stmt->get_result();

    if ($result->num_rows > 0) {
        echo "
            <table>
                <thead>
                    <tr>
                        <th>Control No.</th>
                        <th>Leader</th>
                        <th>Group No.</th>
                        <th>Title</th>
                        <th>Action</th>
                    </tr>
                </thead>
                <tbody>
";
        while ($row = $result->fetch_assoc()) {
            echo "
                <tr>
                    <td>" . $row['controlNo'] . "</td>
                    <td>" . $row['fullname'] . "</td>
                    <td>" . $row['group_number'] . "</td>
                    <td>" . $row['title'] . "</td>
                    <td><a href='document.php?route1_id=" . $row['route1_id'] . "'>View</a></td>
                </tr>
";
        }
        echo "
                </tbody>
            </table>
";
    }
}
```

Figure 55. Code Snippet for Document

Figure 55 This PHP code through the result set to display student thesis information in table rows with sanitized data, including a button that triggers a JavaScript function to open the document file.



Date Submitted	Chapter	Feedback	Paragraph No	Page No	Submitted By	Date Released	Route Number	Status	Action
2025-05-07	123	123	123	123	REA MIE OMAS-AS - Adviser	2025-05-07	Route 1	<input type="button" value="Approved"/>	<input type="button" value="Save"/>
2025-05-07	123	123	123	123	Kenneth Barrera - Panel	2025-05-07	Route 1	<input type="button" value="Approved"/>	<input type="button" value="Save"/>
2025-05-07	All	No additional comments. Document reviewed.	0	0	REA MIE OMAS-AS - Adviser	2025-05-07	Route 3	<input type="button" value="Approved"/>	<input type="button" value="Save"/>
2025-05-07	All	No additional comments. Document reviewed.	0	0	REA MIE OMAS-AS - Adviser	2025-05-07	Final	<input type="button" value="Approved"/>	<input type="button" value="Save"/>

Figure 56. Adviser Comment

Figure 56 The adviser is the first to review and provide feedback on a submitted document, before the panel members. The adviser specifies the chapter, paragraph number, and page number that need to be revised. They can also view comments made by the panel members, then if it's route 3 or final document, if the adviser doesn't have a comment, they can press done so the panel can see the file.

```

<div style="display: flex; justify-content: center; align-items: center; gap: 10px;">
    
    
    <div style="text-align: center;">
        <h4 style="margin: 0;">SAINT MICHAEL COLLEGE OF CARAGA</h4>
        <h4 style="margin: 0;">RESEARCH & INSTRUCTIONAL INNOVATION DEPARTMENT</h4>
    </div>
    
</div>



---


<div style="margin-top: 1rem; margin-bottom: 30px; display: flex; justify-content: space-between; align-items: center;">
    <h4 style="margin: 0;">ROUTING MONITORING FORM</h4>
    <div>
        <button type="button" onclick="addFormRow()">Add Row</button>
        <button type="button" onclick="doneEditing()" style="background-color: var(--success); color: white;">Done</button>
        <button type="submit">Submit Routing Form</button>
        <button type="button" id="toggleFormsBtn" onclick="toggleForms('${student_id}')">Hide Forms</button>
    </div>
</div>

```

Figure 57. Code Snippet for adviser routing form



Figure 57 this code defines a routing form for an adviser, including a heading, input fields for done button, add row button, and submit routing form.

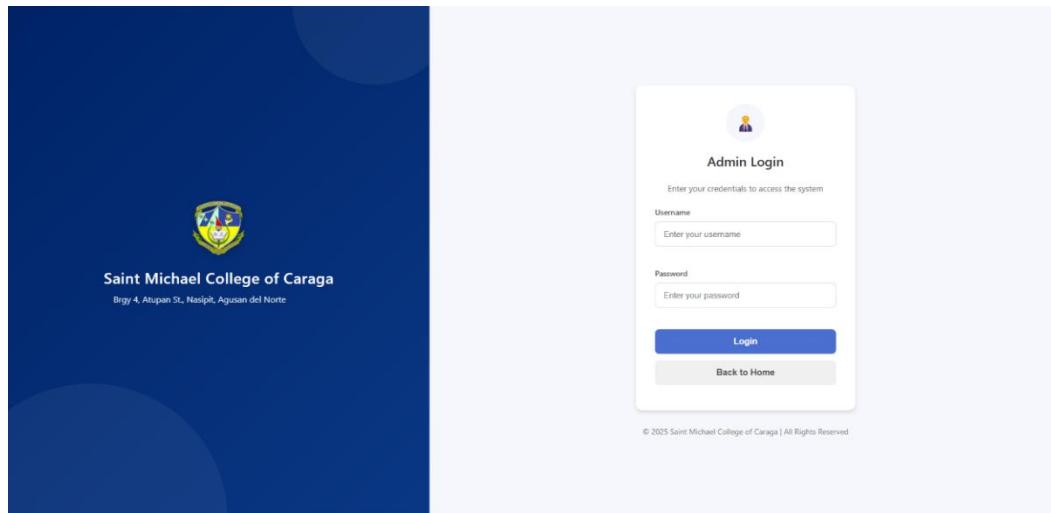


Figure 58. Login Page - Admin

Figure 58 This UI is for Admin login input username and password.

```

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    // Get form data
    $username = mysqli_real_escape_string($conn, $_POST['username']);
    $password = mysqli_real_escape_string($conn, $_POST['password']);

    // Query to check if the user exists
    $sql = "SELECT * FROM admin WHERE username = '$username' AND password = '$password'";
    $result = $conn->query($sql);

    if ($result->num_rows > 0) {
        // Fetch user details
        $admin = $result->fetch_assoc();

        // Set session variables
        $_SESSION['admin_id'] = $admin['admin_id'];
        $_SESSION['fullname'] = $admin['fullname'];

        // Redirect to admin dashboard
        header("Location: homepage/homepage.php");
        exit();
    } else {
        // Invalid credentials
        echo "<script>alert('Invalid Username or Password!'); window.location.href='login.php';</script>";
    }
}

$conn->close();
?>
  
```

Figure 59. Code Snippet for Admin



Figure 59 This code defines a login form for an Admin, including a heading, input fields for username and password, and a button.

 A screenshot of the Thesis Routing System interface. At the top, there's a navigation bar with links for "Home Page", "College of Computing and Information Science", and "All School Years". On the right, it shows "Proposal - Route 1" and "Admin: Admin". Below the navigation is a search bar labeled "Search by leader name...". To the left, there's a sidebar with dropdown menus for "Research Proposal", "Final Defense", "Department Course", and "Registered Account". The main content area displays a table of submitted documents. The columns are "Select", "Control No.", "Leader", "Group No.", "Title", "Assigned", and "Action". There are two rows of data:

Select	Control No.	Leader	Group No.	Title	Assigned	Action
<input type="checkbox"/>	BSIT212	Rylyrin Celnar Tiempo	2	TRS	View Assignments	View
<input type="checkbox"/>	BSIT2024	Jake Castillon	2	Thesis Routing System of Saint Michael College	View Assignments	View

 At the bottom left of the main area is a "Logout" button.

Figure 60. Student Submitted Documents

Figure 60 The admin can select the documents submitted by the students and assign the panel members. The admin clicks the 'Submit' button to complete the assignment process. The admin can also view which panel members are assigned to each student's document by pressing the 'View Assignments' button. Additionally, the admin can see the comments made by the panel members and the adviser by pressing the 'View' button. The admin can also search for specific documents they wish to view, and at the top, they can see the available courses and school years.



```
<?php //replace your existing code rows with this updated version ?>
<tbody id="file-list">
    <?php if (!empty($files)): ?>
        <?php foreach ($files as $file): ?>
            <?php
                $filepath = htmlspecialchars($file['filepath'], ENT_QUOTES);
                $filename = htmlspecialchars(basename($file['filename']), ENT_QUOTES);
                $controlNo = htmlspecialchars($file['controlNo'] ?? '', ENT_QUOTES);
                $fullname = htmlspecialchars($file['fullname'] ?? '', ENT_QUOTES);
                $group_number = htmlspecialchars($file['group_number'] ?? '', ENT_QUOTES);
                $student_id = htmlspecialchars($file['student_id'] ?? '', ENT_QUOTES);
                $title = htmlspecialchars($file['title'] ?? '', ENT_QUOTES);

                // Panel and adviser information
                $assigned_panels = [];
                for ($i = 1; $i <= 5; $i++) {
                    $panel_id_key = "panel{$i}_id";
                    if (!empty($file[$panel_id_key])) {
                        $panel_name = getPanelName($conn, $file[$panel_id_key]);
                        if (!empty($panel_name)) {
                            $assigned_panels[] = ["name" => $panel_name, "position" => "Pan
                        }
                    }
                }

                // Get assigned adviser name
                $adviser_name = "";
                $adviser_id = !empty($file['adviser_id']) ? $file['adviser_id'] : "";
                if (!empty($adviser_id)) {
                    $adviser_name = getAdviserName($conn, $adviser_id);
                }

                // Create assignment status text
                $has_panels = !empty($assigned_panels);
                $has_adviser = !empty($adviser_name);
                if ($has_panels && $has_adviser) {
                    $assignment_status = "View Assignments";
                } elseif ($has_panels) {
                    $assignment_status = "View Panelists";
                } elseif ($has_adviser) {
                    $assignment_status = "View Adviser";
                } else {
                    $assignment_status = "Not Assigned";
                }
            
```

Figure 61. Code Snippet for Documents

Figure 61 This PHP code dynamically generates a table row for each file in the files array, displaying sanitized file information including filename, control number, student details (full name, group number, ID, and document title).



Thesis Routing System

Home Page

Admin: Admin

Title Proposal

Final

Department Course

Department Course

Registered Account

Logout

Department and Course Management

Add Department & Course

Department	Course	Action
College of Business and Management	BSBA - Financial Management	Edit
College of Business and Management	BSBA - Human Resource Management	Edit
College of Business and Management	BSBA - Marketing Management	Edit
College of Computing and Information Science	BS of Information Technology's	Edit
College of Computing and Information Science	BS in Computer Science	Edit
College of Teacher Education	Bachelor of Elementary Education	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Tourism Management	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Hospitality Management	Edit

Figure 62. Department and Course Management

Figure 62 The admin can view all the available departments and courses. The admin also has the expertise to add new departments and courses, and can update or edit them as needed.



```
<thead>
    <tr>
        <th>Department</th>
        <th>Course</th>
        <th>Action</th>
    </tr>
</thead>
<tbody>
    <?php
        // Reset the result pointer to the beginning
        $result->data_seek(0);
        while ($row = $result->fetch_assoc()):
    ?>
        <tr id="row_<?= $row['id'] ?>">
            <form action="update_department_course.php" method="POST" id="form_<?= $row['id'] ?>">
                <td>
                    <span id="department_text_<?= $row['id'] ?>"><?= htmlspecialchars($row['departme
                    <input type="text" name="department" value="<?= htmlspecialchars($row['departmen
                    |   id="department_input_<?= $row['id'] ?>" style="display:none;" required class
                </td>
                <td>
                    <span id="course_text_<?= $row['id'] ?>"><?= htmlspecialchars($row['course']) ?>
                    <input type="text" name="course" value="<?= htmlspecialchars($row['course']) ?>
                    |   id="course_input_<?= $row['id'] ?>" style="display:none;" required class="fo
                    <input type="hidden" name="id" value="<?= $row['id'] ?>">
                </td>
                <td class="action-buttons">
                    <button type="button" onclick="enableEdit('<?= $row['id'] ?>')"
                        id="edit_btn_<?= $row['id'] ?>" class="edit-button">Edit</button>
                    <button type="submit" style="display:none;"'
                        id="save_btn_<?= $row['id'] ?>" class="btn-success">Save</button>
                    <button type="button" style="display:none;"'
                        onclick="cancelEdit('<?= $row['id'] ?>')"
                        id="cancel_btn_<?= $row['id'] ?>" class="cancel-button">Cancel</button>
                </td>
            </form>
        </tr>
    
```

Figure 63. Code Snippet for Department and Course

Figure 63 The code view all the available departments and courses and has a buttons.



Position	Full Name	Department	School ID	Password	Action
panel4	123	College of Computing and Information Science	1123	123	<button>Edit</button>
panel3	Daisa O. Gupit	College of Computing and Information Science	Daisa	123	<button>Edit</button>
panel1	Kenneth Barrera	Research Office	kenneth	123	<button>Edit</button>
panel2	Lealli Palacio	College of Computing and Information Science	apple	123	<button>Edit</button>
panel4	Marlon John Timogin	College of Computing and Information Science	marlon	123	<button>Edit</button>

Figure 64. Panel Registered Accounts

Figure 64 The admin can also view all the registered panel members and has the ability to add or edit panel members.

```

<thead>
    <tr>
        <th>Position</th>
        <th>Full Name</th>
        <th>Department</th>
        <th>School ID</th>
        <th>Password</th>
        <th>Action</th>
    </tr>
</thead>
<tbody>
    <?php while ($row = $result->fetch_assoc()): ?>
        <tr id="row_<?= $row['school_id'] ?>">
            <form action="update_panel_inline.php" method="POST" id="form_<?= $row['school_id'] ?>">
                <td>
                    <span id="position_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['position']) ?>
                    <input type="text" name="position" value="<?= htmlspecialchars($row['position']) ?>">
                </td>
                <td>
                    <span id="fullname_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['fullname']) ?>
                    <input type="text" name="fullname" value="<?= htmlspecialchars($row['fullname']) ?>">
                </td>
                <td>
                    <span id="department_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['department']) ?>
                    <input type="text" name="department" value="<?= htmlspecialchars($row['department']) ?>">
                </td>
                <td>
                    <?= htmlspecialchars($row['school_id']) ?>
                    <input type="hidden" name="school_id" value="<?= htmlspecialchars($row['school_id']) ?>">
                </td>
                <td>
                    <span id="password_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['password']) ?>
                    <input type="password" name="password" id="password_input_<?= $row['school_id'] ?>">
                </td>
                <td>
                    <button type="button" onclick="enableEdit('<?= $row['school_id'] ?>')" id="edit_btn_<?= $row['school_id'] ?>">
                    <button type="submit" style="display:none;" id="save_btn_<?= $row['school_id'] ?>">
                    <button type="button" style="display:none;" onclick="cancelEdit('<?= $row['school_id'] ?>')>
                </td>
            </form>
        </tr>
    <?php endwhile; ?>

```

Figure 65. Code Snippet for Registered Panel



Figure 65 The code generates a table row for each panel member from the database, showing their position, full name, department, school ID, and password.

A screenshot of a web application titled "Thesis Routing System". The top navigation bar includes links for "Home Page", "Logout", and "Admin: Admin". On the left, there is a sidebar with dropdown menus for "Title Proposal", "Final", "Department Course", "Registered Account", "Panel", "Adviser", and "Student". The main content area is titled "List of Registered Advisers" and contains a table with two rows. The table has columns for "Full Name", "Department", "School ID", "Password", and "Action".

Full Name	Department	School ID	Password	Action
Lianne Pace	College of Tourism and Hospitality Management	201	123	<button>Edit</button>
REA MIE OMAS-AS	College of Computing and Information Science	reamie	123	<button>Edit</button>

Figure 66. Adviser Registered Accounts

Figure 66 The admin can also view all the registered advisers and has the ability to add or edit advisers.



```
<tr>
    <th>Full Name</th>
    <th>Department</th>
    <th>School ID</th>
    <th>Password</th>
    <th>Action</th>
</tr>
</thead>
<tbody>
    <?php while ($row = $result->fetch_assoc()): ?>
        <tr id="row_<?= $row['school_id'] ?>">
            <form action="update_adviser_inline.php" method="POST"
                id="form_<?= $row['school_id'] ?>">
                <td>
                    <span
                        id="fullname_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['full
                            <input type="text" name="fullname"
                                value="<?= htmlspecialchars($row['fullname']) ?>">
                                id="fullname_input_<?= $row['school_id'] ?>" style="display:none;" require
                            </td>
                            <td>
                                <span
                                    id="department_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['d
                            <input type="text" name="department"
                                value="<?= htmlspecialchars($row['department']) ?>">
                                id="department_input_<?= $row['school_id'] ?>" style="display:none;" required
                            </td>
                            <td>
                                <?= htmlspecialchars($row['school_id']) ?>
                                <input type="hidden" name="school_id"
                                    value="<?= htmlspecialchars($row['school_id']) ?>">
                            </td>
                            <td>
                                <span
                                    id="password_text_<?= $row['school_id'] ?>"><?= htmlspecialchars($row['pas
                            <input type="text" name="password"
                                value="<?= htmlspecialchars($row['password']) ?>">
                                id="password_input_<?= $row['school_id'] ?>" style="display:none;" require
                            </td>
                            <td>
                                <button type="button" onclick="enableEdit('<?= $row['school_id'] ?>')">
                                    id="edit_btn_<?= $row['school_id'] ?>">Edit</button>
                                <button type="submit" style="display:none;">
                                    id="save_btn_<?= $row['school_id'] ?>">Save</button>
                            </td>
                        </tr>
                    </tbody>
                </table>
            
```

Figure 67. Code Snippet for Registered Adviser

Figure 67 The code generates a table row for each adviser from the database, showing their full name, department, school ID, and password.



The screenshot shows the Thesis Routing System's Admin interface. On the left, there's a sidebar with navigation links: Title Proposal, Final, Department Course, Registered Account, Panel, Adviser, and Student. At the top right, it says "Admin: Admin". The main content area is titled "Panelist Registration" and contains fields for "Complete Name", "Department", "Position", "School ID", and "Password", each with a placeholder text. Below these fields is a blue "Register" button.

Figure 68. Panel Registration

Figure 68 The admin can create panel accounts by entering the full name, department, position, school ID, and password, then pressing the 'Register' button to complete the registration.

```
<div class="content">
  <div class="form-container">
    <h1>Panelist Registration</h1>

    <!-- Success Message -->
    <div id="success-alert" class="alert alert-success" style="display:none;">
      <strong>Success!</strong> Panelist registered successfully.
    </div>

    <form action="panel.php" method="POST">
      <label for="fullname">Complete Name</label>
      <input type="text" id="fullname" name="fullname" placeholder="First name , Last name" required>

      <label for="department">Department</label>
      <input type="text" id="department" name="department" required>

      <label for="position">Position</label>
      <input type="text" id="position" name="position" placeholder="Panel1, Panel2, Panel3, Panel4" required>

      <label for="school_id">School ID</label>
      <input type="text" id="school_id" name="school_id" required>

      <label for="password">Password</label>
      <input type="password" id="password" name="password" required>

      <div class="button-container">
        <button type="submit">Register</button>
      </div>
    </form>
  </div>
</div>
```

Figure 69. Code Snippet for Panel Registration



Figure 69 The code represents a form for Registering an panel It includes input fields for Complete name, Department, Position, School ID, and Password.

Figure 70. Adviser Registration

Figure 70 The admin can create adviser accounts by entering the full name, department, school ID, and password, then pressing the 'Register' button to complete the registration.

```

<div class="content">
  <div class="form-container">
    <h1>Adviser Registration</h1>

    <!-- Success Message -->
    <div id="success-alert" class="alert alert-success" style="display:none">
      <strong>Success!</strong> New adviser registered successfully.
    </div>

    <form action="adviser.php" method="POST">
      <label for="fullname">Complete Name</label>
      <input type="text" id="fullname" name="fullname" placeholder="First name / Middle name / Last name" required>

      <label for="department">Department</label>
      <input type="text" id="department" name="department" required>

      <label for="school_id">School ID</label>
      <input type="text" id="school_id" name="school_id" required>

      <label for="password">Password</label>
      <input type="password" id="password" name="password" required>

      <div class="button-container">
        <button type="submit">Register</button>
      </div>
    </form>
  </div>
</div>
```

Figure 71. Code Snippet for Adviser Registration



Figure 71The code represents a form for Registering an adviser, It includes input fields for Complete name, Department, School ID, and Password.

 A screenshot of a web-based application titled "Thesis Routing System". The interface has a dark blue header bar with the title and a user "Admin: Admin". Below the header is a sidebar with dropdown menus for "Title Proposal", "Final", "Department Course", "Registered Account", "Panel", "Adviser", and "Student". The main content area is titled "List of Registered Students" and contains a table with five rows of data. The columns are "Full Name", "Department", "School ID", "Password", and "Action". Each row shows a student's information with an "Edit" button in the "Action" column. The data in the table is as follows:

Full Name	Department	School ID	Password	Action
Ell jay Lacaran	College of Computing and Information Science	202251330	123	<button>Edit</button>
Jake Castillon	College of Computing and Information Science	202251243	123	<button>Edit</button>
Jenessa Ocay	College of Computing and Information Science	123	123	<button>Edit</button>
John Lester Saladores	College of Tourism and Hospitality Management	202251252	123	<button>Edit</button>
Rylvin Celnar Tiempo	College of Computing and Information Science	202251468	123	<button>Edit</button>

 At the bottom left of the main content area is a "Logout" button.

Figure 72. List of Registered Students

Figure 72 Here, the admin can see all the registered student accounts along with their full name, department, school ID, and password. The admin can also edit the full name, department, or password if a student request it. for example, if they forgot their password or made a mistake during registration.



```
<div class="form-section">
    <div class="form-section-title"><span>3</span>Researchers Information</div>
    <div class="researchers-section">
        <div class="researchers-title">Thesis Researchers</div>
        <div class="input-group">
            <label for="fullname">Research Leader</label>
            <input type="text" id="fullname" name="fullname" placeholder="Enter your complete name" required>
        </div>

        <div id="members-container">
            <label for="members">Additional Members</label>
            <input type="text" name="member_fullname[]" placeholder="Name of Member">
        </div>
        <button type="button" class="btn btn-secondary btn-sm" onclick="addMemberField()">
            + Add Another Member
        </button>
    </div>

    <div class="input-row">
        <div class="input-group">
            <label for="group_number">Group Number</label>
            <input type="text" id="group_number" name="group_number" placeholder="Enter group number" required>
        </div>
        <div class="input-group">
            <label for="adviser">Adviser</label>
            <select id="adviser" name="adviser" required onchange="updateAdviserEmail()">
                <option value="">Loading advisers...</option>
            </select>
            <input type="hidden" id="adviser_email" name="adviser_email">
        </div>
    </div>
</div>
```

Figure 73. Code Snippet for Registered Students

Figure 73 The code generates a table row for each adviser from the database, showing their full name, department, school ID, and password.



4.2 Testing Process

The testing process outlines the various procedures conducted to assess the system's accuracy, functionality, and overall performance. To evaluate its effectiveness, efficiency, and reliability, the researchers utilized a survey instrument based on the system usability, functionality, and efficiency scale test. This instrument was adapted from the ISO 25010 Software Product Quality Standards. The test scale provided respondents with four rating options, where 4 represented the highest score and 1 the lowest.

The collected data were analyzed and interpreted according to the following parameters:

Table 3

Functional Suitability

Adjectival Rating	Scale Range (Mean)	Verbal Interpretation
4	3.50 – 4.0	Very Functional
3	2.50 – 3.49	Functional
2	1.50 – 2.49	Moderately Functional
1	1.0 – 1.49	Poorly Functional

Table 3 outlines the criteria by which a product or system delivers functions that fulfill both stated and implied requirements when used under defined conditions.

Table 4

Performance Efficiency

Adjectival Rating	Scale Range (Mean)	Verbal Interpretation
4	3.50 – 4.0	Very Efficient



3	2.50 – 3.49	Efficient
2	1.50 – 2.49	Moderately Efficient
1	1.0 – 1.49	Poorly Efficient

Table 4 reflects how effectively the system or product performs in relation to the resources consumed under specified conditions.

Table 5**Usability**

Adjectival Rating	Scale Range (Mean)	Verbal Interpretation
4	3.50 – 4.0	Very Usable
3	2.50 – 3.49	Usable
2	1.50 – 2.49	Moderately Usable
1	1.0 – 1.49	Poorly Usable

Table 5 describes the extent to which a product or system enables designated users to accomplish specific tasks effectively, efficiently, and satisfactorily within a defined usage context.

Table 6**Respondent's Distribution**

Online Request of Credentials		
Position	N (Population)	Percentage (%)
Student	7	70
Adviser	1	10
Research Office	2	20



Total	10	100
-------	----	-----

Table 6 the survey respondents were drawn from key positions at Saint Michael College of Caraga, with students representing the largest group at 70%. This highlights the importance of understanding the system's usability and performance from the perspective of its primary users. The research office staff contributed 20% of the responses, offering insights from an administrative standpoint. The adviser group represented 10% of the respondents, providing feedback on how the system supports academic advising.

With a total of 10 respondents, the purposive sampling ensured that feedback was collected from individuals who interact with or are directly impacted by the system. The data collection methods included surveys and focus group discussions, which provided a comprehensive view of the system's effectiveness and user experience.

Descriptive Statistics Result

Table 7

Functional Suitability

A.	Functional Suitability	MEAN	VERBAL INTERPRETATION
1.	Functional completeness - Degree to which the set of functions covers all the specified tasks and user objectives	3.50	VF
2.	Functional correctness - Degree to which a product or system provides the correct results with the needed degree of precision.	3.50	VF
3.	Functional appropriateness - Degree to which the functions facilitate the accomplishment of specified tasks and objectives.	3.50	VF
Weighted Mean		3.50	VF

**Legend:**

VF – Very Functional (3.50 – 4.0)
F – Functional (2.50 – 3.49)

MF – Moderately Functional (1.50 – 2.49)
PF– Poorly Functional (1.0 – 1.49)

Table 7 presents the average scores and corresponding adjectival ratings for Functional Suitability, with a total weighted mean of 3.50—classified as *Very Functional (VF)*. This reflects that users perceive the system as highly effective in fulfilling its core functions.

All three functional criteria—completeness, correctness, and appropriateness—received identical mean scores of 3.50. This indicates that the system thoroughly addresses user needs, delivers precise results, and effectively supports the completion of intended tasks.

Overall, the results demonstrate that the system offers a reliable, efficient, and user-centered experience. Its strong rating in Functional Correctness highlights its ability to consistently provide accurate outputs, enhancing user trust in its capabilities for data handling and report generation.

Table 8
Performance Efficiency

B.	Performance Efficiency	MEAN	VERBAL INTERPRETATION
1.	Time behaviour - Degree to which the response and processing times and throughput rates of a system, when performing its functions, meet requirements.	3.50	VE
2.	Resource utilization - Degree to which the amounts and types of resources used by a system, when performing its functions, meet requirements.	3.25	E



3. Capacity - Degree to which the maximum limits of a product or system parameter meet requirements.	3.50	VE
--	------	----

Weighted Mean	3.42	E
----------------------	-------------	----------

Legend:

VE – Very Efficient (3.50 – 4.0)	ME – Moderately Efficient (1.50 – 2.49)
E – Efficient (2.50 – 3.49)	PE – Poorly Efficient (1.0 – 1.49)

Table 8 outlines the mean scores and adjectival interpretations for Performance Efficiency, with a total weighted mean of 3.42, falling under the *Efficient (E)* category.

Both Time Behaviour and Capacity received mean scores of 3.50, indicating that the system performs well in terms of responsiveness and is capable of handling workloads within its defined capacity limits. However, Resource Utilization scored 3.25, suggesting that while resource consumption remains within acceptable boundaries, there is room for optimization to ensure more efficient use of system resources.

In summary, the system is generally efficient in performance, meeting expectations for speed and capacity, though some improvement in resource management could enhance overall efficiency.

Table 9

Usability

C.	Usability	MEAN	VERBAL INTERPRETATION
A.	Appropriateness recognizability - Degree to which users can recognize whether a system is appropriate for their needs.	3.50	VU
B.	Learnability - Degree to which a system can be used by specified users to achieve	3.50	VU



specified goals of learning to use the product or system with effectiveness, efficiency, freedom from risk and satisfaction in a specified context of use.

C. Operability - Degree to which a system has attributes that make it easy to operate and control.	3.40	U
D. User error protection - Degree to which a system protects users against making errors.	3.40	U
E. User interface aesthetics - Degree to which a user interface enables pleasing and satisfying interaction for the user.	3.50	VU
F. Accessibility - Degree to which a system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.	3.50	VU

Weighted Mean 3.47 U

Legend:

VU – Very Usable (3.50 – 4.0)	MU – Moderately Usable (1.50 – 2.49)
U – Usable (2.50 – 3.49)	PU – Poorly Usable (1.0 – 1.49)

Table 9 presents the mean distribution and adjectival ratings for Usability, resulting in a weighted mean of 3.47, which falls under the category *Usable (U)*.

High ratings of 3.50 in *Appropriateness*, *Recognizability*, *Learnability*, *User Interface Aesthetics*, and *Accessibility* suggest that users find the system relevant to their needs, easy to learn, visually pleasing, and accessible across a broad range of abilities. Meanwhile, *Operability* and *User Error Protection* received slightly lower scores of 3.40, still within the *Usable* range, indicating that



while the system is generally easy to operate and prevents errors reasonably well, these areas could benefit from slight refinements.

Overall, the system is considered usable by its users, providing an effective and satisfactory interaction experience with minor areas for improvement.

Table 10

Summary Table of the Overall Mean and Grand Distribution of the Acceptability Level

Acceptability Level of the System in terms of:	Over-all Mean	Rating
Functional Suitability	3.50	SA
Performance Efficiency	3.42	A
Usability	3.47	A
Grand Mean	3.46	A

Legend:

SA – Strongly Acceptable (3.50 – 4.0)	U – Unacceptable (1.50 – 2.49)
A – Acceptable (2.50 – 3.49)	SU – Strongly Unacceptable (1.0 – 1.49)

Figure 10 the system demonstrates a generally acceptable level of performance across the evaluated criteria. Functional Suitability received a Strongly Acceptable (SA) rating, indicating that it effectively meets its intended functions. However, both Performance Efficiency and Usability scored within the Acceptable (A) range, suggesting that while the system is generally effective, there may be areas for improvement, particularly in resource efficiency and user interaction. With an Overall Mean of 3.46, the system is deemed Acceptable (A) overall. This suggests it meets the necessary criteria, though further optimization and enhancements could further elevate its functionality and user experience.



CHAPTER 5

SUMMARY, CONCLUSION, RECOMMENDATION

This chapter presents a summary of the research's key findings, derives conclusions from the results, and suggests recommendations for future enhancements or further studies. It highlights the project's overall accomplishments, considers its implications, and offers practical insights into improving the system and expanding its potential applications.

5.1. Summary of Findings

Based on the testing process conducted, the Thesis Routing System for Saint Michael College of Caraga was evaluated for its accuracy, functionality, and overall performance using a survey instrument adapted from the ISO 25010 Software Product Quality Standards. The evaluation focused on three major aspects: functional suitability, performance efficiency, and usability.

The results of the evaluation affirm that the system is "Very Functional" with a mean score of 3.50. This suggests that it effectively satisfies the specific tasks and objectives required for its implementation. It also scored well in functional completeness, correctness and appropriateness to ensure that users are given precise results and a smooth operation of the system.

In terms of performance efficiency, the system was rated as "Efficient" with a mean score of 3.42. It performed well regarding time behavior and resource use, showing its ability to respond quickly to requests while using system resources effectively. Capacity management could be improved to maintain optimal performance levels during periods of heavy usage.

Overall, the system was rated "Strongly Acceptable" with a grand mean of 3.50. which means that it is highly acceptable to users and performs well in meeting their needs in terms of functionality, performance efficiency, and usability. The system shows strong performance in



major areas like functional completeness, time behavior, resource usage, and ease of use, and also offers a user-friendly experience.

5.2. Conclusion

In conclusion, the system has excellent functional suitability with its attributes accomplishing the assigned tasks and user goals. The system gives proper results, accomplishes all needed functions, and supports task realization efficiently. All objectives, including reliable performance, seamless user interaction, secure data handling, and efficient resource utilization, have been successfully met according to the established criteria and stakeholder expectations. But there is a scope to extend its functional completeness and suitability in order to more closely align itself with user needs.

5.3. Recommendation/s

To enhance the system's effectiveness and user experience, it is recommended to implement a dynamic announcement feature on the homepage. This would keep users informed of important updates, policy changes, and deadlines without requiring them to search for this information elsewhere. The announcement system should include basic formatting options and expiration settings to ensure information remains current and relevant.

Additionally, integration of an AI-powered document review system would significantly improve collaborative capabilities. This tool should analyze papers and manuscripts, providing suggestions and feedback through comments displayed along the right margin, similar to Google Docs. The AI system should offer grammatical corrections, stylistic recommendations, and content improvement suggestions while allowing users to easily track, respond to, and resolve comments during the revision process.



ETHICAL STANDARD

In conducting this study, ethical considerations are crucial to maintaining the integrity, transparency, and credibility of the research process. This study adheres to ethical principles by prioritizing the confidentiality of sensitive student and academic data within the Web-based Thesis Routing System (TRS), ensuring that access is restricted solely to authorized personnel. The digitalized nature of the TRS necessitates stringent data protection measures to prevent unauthorized access and misuse. Furthermore, the system is designed to align with ethical principles of fairness, accountability, and respect for all users, ensuring compliance with institutional policies and legal standards while fostering trust among stakeholders.

A. Protection of Intellectual Property Rights (IPR)

The “Web-based Thesis Routing System for Saint Michael College of Caraga” is a software solution developed specifically for managing thesis submission and evaluation at Saint Michael College of Caraga. The system’s source code, design, and interface would be copyrighted to protect intellectual property rights. Additionally, all uploaded theses remain the intellectual property of the submitting students and faculty, ensuring that the system upholds copyright laws and does not infringe on intellectual ownership. Since no unique branding or logo beyond the institution’s existing identity would be created, trademark registration is unnecessary.

B. Informed Consent

All users of the TRS would be fully informed about the system’s purpose, functionality, and potential benefits through a user agreement. Before registering, students, advisers, panel members, and administrators before they agree or decline to join, ensuring they understand the scope of their involvement. No living organisms, including animals, are involved in this system, as it is strictly a digital tool for academic purposes.



C. Data Privacy and Confidentiality

The TRS prioritizes data privacy by securely storing all user data and uploaded documents in a Firestore database with encryption. Access to sensitive information would be restricted to authorized personnel, such as administrators and panel members, based on user roles. All data would be anonymized when necessary to protect user identities, and no third-party access would be allowed without explicit consent.

D. Voluntary Participation and Freedom to Withdraw

Participation in the TRS is entirely voluntary, with students, faculty, and panel members free to engage with the system or request account deactivation without facing any penalties. Clear documentation would ensure users are aware of their rights to opt out of the system at any time, respecting their autonomy and decision-making. This study exclusively involves human participants and does not include animals in any capacity. Comprehensive documentation would be provided to ensure clarity and transparency regarding these policies.

E. Minimization of Harm and Risk Management

The Web-based approach minimizes potential harm by ensuring ease of access, secure data handling, and reliable functionality. Services such as a helpdesk, training sessions, and an FAQ section support users when needed. Social risks are mitigated through equitable access and confidentiality, while encryption protects data from breaches. Regular monitoring and user feedback mechanisms address concerns promptly, keeping physical, social, and psychological risks to an absolute minimum.

F. Beneficence and Contribution to Knowledge

The solution contributes positively to both the academic community and society by enhancing the efficiency and transparency of the thesis submission and evaluation process. By reducing the environmental impact of printing and streamlining communication between



stakeholders, the system aligns with sustainable and eco-friendly practices. The system also ensures that students and faculty benefit directly from improved management and accessibility of thesis documents. Research findings would be made available upon request through institutional channels, such as reports, presentations, or academic publications. Additionally, findings would be shared with participants and stakeholders via accessible formats like summary reports, workshops, or online platforms to ensure transparency and inclusivity.

G. Justice and Fair Participant Selection

The framework is designed to support all students and faculty equitably, regardless of gender, socioeconomic status, or department. No user would face discrimination, and access to the system would be granted transparently based on their roles in the thesis process. This ensures fairness and inclusivity in the system's implementation and usage. No animals are involved in this project.

H. Data Integrity and Accuracy

All data entered into the TRS would undergo rigorous validation to ensure accuracy and consistency. While the system's automated features, such as document tracking and status updates, are designed to maintain data integrity, there may still be potential biases or errors in data processing. Limitations, such as system updates or user input inaccuracies, could affect functionality. Continuous monitoring and regular updates would address these issues, and feedback mechanisms would help identify and correct any discrepancies to enhance reliability.

I. Transparency in Reporting and Honesty

The system would generate accurate and transparent reports on thesis submissions and evaluations, ensuring all activities are documented without manipulation. Administrators would disclose any conflicts of interest and provide proper citations for secondary data sources or external tools used during development.



J. Use of Patented or Copyrighted Materials

The development of the TRS adheres to copyright laws by ensuring that all third-party libraries, tools, or resources used are properly licensed and cited. User-uploaded materials, including theses, remain under the ownership of their respective authors, and no unauthorized use of copyrighted content would occur.

K. Ethical Considerations for Animal and Human Trials

The platform is a software-based system available exclusively to students at Saint Michael College of Caraga (SMCC). It does not involve any animal or human trials in the traditional sense of experimentation. While students use the system for thesis submission and evaluation, they would not be exposed to physical, emotional, or psychological risks. The system ensures user safety through secure data handling, privacy measures, and a focus on a positive user experience.

L. Responsible Use of AI and Other Related Technologies

AI tools, including automated validation features, have been responsibly integrated into the TRS to enhance its functionality. AI is used to automatically end the routing for each adviser and panel member if they exceed the allotted time. Grammarly was used during the documentation phase to ensure clarity and professionalism, while ChatGPT assisted in refining written materials and addressing technical queries.

M. Ethical Clearance and Institutional Approval

Ethical approval for the development and implementation of the TRS would be secured from the Saint Michael College of Caraga Institutional Review Board. This ensures compliance with institutional and research ethics guidelines, including participant safety, data security, and intellectual property protection.



REFERENCES

- [1] F. L. R. Geanne, C. Y. De Guzman et al. (2016), “Design and implementation of a web-based thesis coordinator system (TCS)”, Available: <https://ieeexplore.ieee.org/abstract/document/7848535/authors#authors>
- [2] S. B. Nursyazwana (2011). “E-THESIS MANAGEMENT SYSTEM (ETMS)”, Available: <https://core.ac.uk/download/pdf/159179882.pdf>
- [3] Q. B. Joseph (2022), “Seize the day or seize theses? The challenges in undergraduate thesis writing”, Available: <https://www.iier.org.au/iier32/quinto.pdf>
- [4] R. D. Elin et al. (2016), “A CCS IT Thesis Portal with Electronic Document Management System”, Available: <https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2016/HCT/HCT-II-01.pdf>
- [5] M. Bagoes, Feriyansyah, S. D. Ressy (2022), “The Design of Web-based Thesis Management Information System to Increase the Quality and Efficiency of Guiding Process and Document Management”, Available: <https://seaninstitute.org/infor/index.php/infokum/article/view/1000/789>
- [6] I. G. N. A. C. Putra, P. Cokorda, M. A. Raharja, I. W. Supriana., I. K. GSuhartana, N. K. E. Dianasari (2024), “Web-Based Thesis Guidance Monitoring Information System Based on Quick Response Code Technology”, Available: <https://www.atlantis-press.com/proceedings/icamsac-23/125999723>
- [7] C. B. Esther, D. M. M. Petal, G. L. Jocelyn, B. Arlene, S. M. V. Jc (2022), “THESISIT: WEB-BASED UNIVERSITY THESIS MANAGEMENT PORTAL WITH A DEFENSE SCHEDULING SYSTEM”, Available: <http://www.sci-int.com/pdf/638257264856784026.%20Esther%20B.%20Chio%20Thesis-6.12-22..pdf>



-
- [8] H. W. Hsiu et al. (2019), "Investigation on the Benefits and Satisfaction Degree of the Electronic Official Document Online Submission and Approval System—A Case Study of a Medical Center in Southern Taiwan", Available:
<https://pdfs.semanticscholar.org/63f2/a9ccef3f31e444ca3de07e73a233417deec0.pdf>
- [9] M. Arkon, O. T. Ibrahim (2017), "Design and Implementation of an Electronic Document Management System", Available:
<https://dergipark.org.tr/tr/pub/makuubd/issue/28686/321093>
- [10] Z. S. Simona et al. (2023), "Managing Document Management Systems' Life Cycle in Relation to an Organization's Maturity for Digital Transformation", Available:
<https://www.mdpi.com/2071-1050/15/21/15212>
- [11] W. Yong, S. D. Christian (2021), "The Effects of Providing and Receiving Peer Feedback on Writing Performance and Learning of Secondary School Students", Available:
<https://files.eric.ed.gov/fulltext/EJ1294485.pdf>
- [12] W. Yong, S. D. Christian (2019), "From feedback to revisions: Effects of feedback features and perceptions", Available: <https://www.lrdc.pitt.edu/schunn/papers/Wu-Schunn-FeedbackFeaturesToRevisionsCEP.pdf>
- [13] B. A. Mamoon et al. (2016), "The Value and Effectiveness of Feedback in Improving Students' Learning and Professionalizing Teaching in Higher Education", Available:
<https://files.eric.ed.gov/fulltext/EJ1105282.pdf>
- [14] R. A. Abdullah, E. H. Sarafat (2022), "Automation of Thesis Management", Available:
https://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/18309/17301084%2C%2017301047_CSE.pdf?sequence=1&isAllowed=y



-
- [15] A. M. Samuel (2023), “Design and Implementation of a Web-based Document Management System”, Available:
https://www.researchgate.net/publication/370534584_Design_and_Implementation_of_a_Web-based_Document_Management_System
- [16] H. Sang-Hyung et al. (2013), “Development of a Document Management System for the Standardization of Clinical Laboratory Documents”, Available: [Development_of_a_Document_Management_System_for_the_Standardization_of_Clinical_Laboratory_Documents_\(annlabmed.org\)](http://Development_of_a_Document_Management_System_for_the_Standardization_of_Clinical_Laboratory_Documents_(annlabmed.org))
- [17] A. T. Dante et al. (2023), “Development and Implementation of Document Management System for Ilocos Sur Polytechnic State College, Tagudin Campus”, Available:
<https://ispsc.edu.ph/e-dawa-hpcb6748>
- [18] W. Sri (2017), “The Effect of Different Feedback on Writing Quality of College Students with Different Cognitive Styles”, Available: <https://eric.ed.gov/?id=EJ1146488>
- [19] D. Phillip et al. (2018), “What makes for effective feedback: staff and student perspectives”, Available: <https://www.tandfonline.com/doi/epdf/10.1080/02602938.2018.1467877?needAccess=true>
- [20] L. Taizhi, Z. Jun (2019), “The Design and Implementation of Graduation Thesis Management System”, Available: <https://www.francispress.com/uploads/papers/5aFw1CCOgwh5vi4STRO9eLX5MgE9WvPKeNxrxCP5.pdf>
- [21] L. Qi (2018), “Research on Paper Submission Management System by Using Automatic Text Categorization”, Available:
https://link.springer.com/chapter/10.1007/978-3-319-60011-6_17



-
- [22] A. Rahmat et al. (2020), “Analysis of the Effect of Electronic Document Management System, Organizational Commitment and Work Satisfaction on Employee Performance”, Available: <https://ijisrt.com/assets/upload/files/IJISRT20AUG554.pdf>
- [23] I.N. Burtylev, K.V. Mokhun, Y.V. Bodnya, D.N. Yukhnevich (2013), “Development of Electronic Document Management Systems: Advantage and Efficiency”, Available: <http://article.sapub.org/pdf/10.5923.s.scit.201301.01.pdf>
- [24] A. Manzoor, T. Martin, F. Rimesha (2021), “The Impact of Teacher Feedback on Students’ Academic Performance: A Mediating Role of Self-efficacy”, Available: <https://jdss.org.pk/issues/v2/3/the-impact-of-teacher-feedback-on-students-academic-performance-a-mediating-role-of-self-efficacy.pdf>
- [25] W. Andi (2019), “Investigating Written Feedback on Students’ Academic Writing”, Available: <https://www.atlantis-press.com/proceedings/icoshiess-19/125919840>
- [26] W. Andrew (2024), “Delivering Effective Student Feedback in Higher Education: An Evaluation of the Challenges and Best Practice”, Available: <https://files.eric.ed.gov/fulltext/EJ1426687.pdf>
- [27] G. Dimitris, D. Olivier, L. M. Pierre (2024), “Continuous Performance Feedback: Investigating the Effects of Feedback Content and Feedback Sources on Performance, Motivation to Improve Performance and Task Engagement”, Available: <https://www.tandfonline.com/doi/epdf/10.1080/01608061.2023.2238029?needAccess=true>
- [28] O. Torunn, H. John (2024), “Improving students’ learning—the role of formative feedback: experiences from a crash course for business students in academic writing”, Available:



<https://www.tandfonline.com/doi/full/10.1080/02602938.2023.2187744?scroll=top&needAccess=true#abstract>

[29] H. Bart et al. (2018), “Peer feedback on academic writing: undergraduate students’ peer feedback role, peer feedback perceptions and essay performance”, Available: <https://www.tandfonline.com/doi/full/10.1080/02602938.2018.1424318#abstract>

[30] F. K. Ibnu (2020), “SIMONTA: Responsive WebBased Thesis Management”, Available: https://repository.unesa.ac.id/sysop/files/2021-11-22_Similarity:%20Prosiding%202016_yuni%20y.pdf

[31] H. Pandu et al. (2024), “Designing a Web-Based Online Thesis Guidance Application for the Computer Science Study Program, Bina Bangsa University”, Available: <https://jpabdimas.idjournal.eu/index.php/jinav/article/view/2918>

[32] P. Juti et al (2020), “Data Management System for Thesis Monitoring at STMIK IBBI Using B-Model”, Available: <https://ieeexplore.ieee.org/abstract/document/9166671>

[33] A.M. Eladio, N. A. J. Marah, H. A. Marla, A. A. Caroline (2014), “Enhancing Theses Recording and Monitoring Using a Customized Database Management System (DBMS)”, Available: https://www.nvsu.edu.ph/assets/downloads/journal/vol1-2/NVSURJ_Vol.1_02_2014_3.pdf

[34] E. M. J. Paul et at. (2023), “A WEB-BASED DOCUMENT MANAGEMENT SYSTEM FOR EXTENSION OFFICE”, Available:

https://www.researchgate.net/publication/365634863_A_WEB-BASED_DOCUMENT_MANAGEMENT_SYSTEM_FOR_EXTENSION_OFFICE

[35] P. Paul, P. Steve, B. David (2000), "The Development of an Online Submission and Peer Review System", Available: <https://core.ac.uk/download/pdf/98058.pdf>



-
- [36] C. Arnab et al. (2020), “Dynamic Role-Based Access Control for Decentralized Applications”, Available: https://link.springer.com/chapter/10.1007/978-3-030-59638-5_13
- [37] T. M. M. Khin et al. (2009), “Security of Healthcare System using Role-Based Access Control”, Available: <https://onlineresource.ucsy.edu.mm/handle/123456789/1413>
- [38] U. Mumina, I. Shareef, A. Ameer (2019), “A Dynamic Access Control Model Using Authorising Workflow and Task-Role-Based Access Control ”, Available: <https://ieeexplore.ieee.org/abstract/document/8868170/>
- [39] G. Rubina et al. (2020), “Intelligent Role-Based Access Control Model and Framework Using Semantic Business Roles in Multi-Domain Environments”, Available: <https://ieeexplore.ieee.org/abstract/document/8954638>
- [40] L. Gang et al. (2020), “Extended Role-Based Access Control with Context-Based Role Filtering”, Available: <https://koreascience.kr/article/JAKO202011161035965.page>
- [41] J. C. D. A. Marcelo et al. (2018), “Health Information System Role-Based Access Control Current Security Trends and Challenges”, Available: <https://onlinelibrary.wiley.com/doi/full/10.1155/2018/6510249>



APPENDICES

A. System Source Code

connection.php

```
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "trs";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
?>
```

route1.php

```
if ($_SERVER["REQUEST_METHOD"] === "POST" && isset($_FILES["docuRoute1"]) && isset($_POST['old_file_path'])) {
    $student_id = $_SESSION['student_id'];
    $oldFilePath = $_POST['old_file_path'];

    // Check if old file exists in database
    $stmt = $conn->prepare("SELECT r.route1_id, r.title, r.fullname, r.adviser_id
                           FROM route1proposal_files r
                           WHERE r.student_id = ? AND r.docuRoute1 = ?");
    $stmt->bind_param("ss", $student_id, $oldFilePath);
    $stmt->execute();
    $result = $stmt->get_result();
```

get_adviser_email.php



```
$stmt = $conn->prepare(query: "SELECT email FROM adviser WHERE fullname = ?");
$stmt->bind_param(types: "s", var: &$adviser);
$stmt->execute();
$result = $stmt->get_result();

if ($result && $result->num_rows > 0) {
    $row = $result->fetch_assoc();
    echo $row['email'];
} else {
    echo ''; // No email found
}
```

get_adviser.php

```
$query = "SELECT adviser_id, fullname, email FROM adviser ORDER BY fullname";
$result = $conn->query(query: $query);

// Default option
echo '<option value="">Select Adviser</option>';
```

get_course.php

```
<?php
// Database connection
include '../connection.php';

if (isset($_GET['department'])) {
    $department = mysqli_real_escape_string(mysql: $conn, string: $_GET['department']);

    // Query to get courses for the selected department
    $sql = "SELECT course FROM departmentcourse WHERE department = '$department' ORDER BY course";
    $result = $conn->query(query: $sql);

    // Default option
    echo '<option value="">Select Course</option>';

    // Add options for each course
    if ($result && $result->num_rows > 0) {
        while($row = $result->fetch_assoc()) {
            echo '<option value="' . $row["course"] . '">' . $row["course"] . '</option>';
        }
    } else {
        echo '<option value="">No courses found</option>';
    }
} else {
    echo '<option value="">Select Department First</option>';
}

// Close the connection
$conn->close();
?>
```

route1.php



```
$dateNow = date('Y-m-d H:i:s'); // Get the current date and time
$updatePanelStmt = $conn->prepare(query: "UPDATE route1proposal_files
    SET panel1_id = ?, panel2_id = ?, panel3_id = ?, panel4_id = ?, panel5_id = ?, date_submitted = ?
    WHERE docuRoute1 = ?");
$updatePanelStmt->bind_param(types: "iiiiiss", var: &$panel1, vars: &$panel2, $panel3, $panel4, $panel5,
$dateNow, $fileName);
$updatePanelStmt->execute();
$updatePanelStmt->close();

// Get student information for email notifications
$studentInfoStmt = $conn->prepare(query: "SELECT fullname, title FROM route1proposal_files WHERE
docuRoute1 = ?");
$studentInfoStmt->bind_param(types: "s", var: &$fileName);
$studentInfoStmt->execute();
$studentInfo = $studentInfoStmt->get_result()->fetch_assoc();
$studentName = $studentInfo['fullname'] ?? 'Unknown Student';
$thesisTitle = $studentInfo['title'] ?? 'Unknown Title';
$studentInfoStmt->close();
```

Logout.php

```
<?php
session_start(); // Start the session

// Destroy all session variables
session_unset();

// Destroy the session
session_destroy();

// Redirect to login page after logging out
header(header: "Location: index.php");
exit;
?>
```

get_all_forms.php

```
if (!isset($_GET['route1_id'])) {
    echo json_encode(value: ['error' => 'Missing route1_id parameter']);
    exit;
}

$route1_id = $_GET['route1_id'];

// Get all forms for this route1_id
$query = " SELECT id, date_submitted, chapter, feedback, paragraph_number, page_number, adviser_name, panel_name,
date_released, status, routeNumber FROM proposal_monitoring_form WHERE route1_id = ? ORDER BY date_submitted DESC
";

$stmt = $conn->prepare(query: $query);
if ($stmt === false) {
    echo json_encode(value: ['error' => 'Database error: ' . $conn->error]);
    exit;
}

$stmt->bind_param(types: "s", var: &$route1_id);
$stmt->execute();
$result = $stmt->get_result();

$form = [];
while ($row = $result->fetch_assoc()) {
    $form[] = $row;
}
```



check_adviser_route2.php

```

if ($route1_id) {
    $check_route1 = $conn->prepare(query: "SELECT COUNT(*) as count FROM proposal_monitoring_form
                                            WHERE route1_id = ? AND adviser_id IS NOT NULL
                                            AND (status = 'Approved' OR status = 'approved')");
    $check_route1->bind_param(types: "i", var: &$route1_id);
    $check_route1->execute();
    $route1_result = $check_route1->get_result();
    $route1_approved = ($route1_result && $route1_result->fetch_assoc()['count'] > 0);
    $check_route1->close();

    if ($route1_approved) {
        $response['hasReviewed'] = true;
        $response['message'] = 'Route 1 document was approved by adviser';
    } else {
        $response['hasReviewed'] = false;
        $response['message'] = 'Adviser must approve Route 1 before panel members can view Route 2 documents';
    }
} else {
    $response['hasReviewed'] = false;
    $response['message'] = 'Route 1 document not found. Adviser must complete Route 1 review first';
}

```

update_form_status.php

```

$checkOwnershipStmt = $conn->prepare(query: "SELECT COUNT(*) as form_count FROM proposal_monitoring_form WHERE id = ? AND
panel_id = ?");
$checkOwnershipStmt->bind_param(types: "is", var: &$form_id, vars: &$panel_id);
$checkOwnershipStmt->execute();
$ownershipResult = $checkOwnershipStmt->get_result();
$ownershipData = $ownershipResult->fetch_assoc();
$checkOwnershipStmt->close();

if ($ownershipData['form_count'] == 0) {
    header(header: 'Content-Type: application/json');
    echo json_encode(value: ['success' => false, 'message' => 'You can only update the status of forms you submitted
yourself']);
    exit;
}

// Update the form status in the database
$updateStmt = $conn->prepare(query: "UPDATE proposal_monitoring_form SET status = ? WHERE id = ? AND panel_id = ?");
$updateStmt->bind_param(types: "sis", var: &$new_status, vars: &$form_id, &$panel_id);
$result = $updateStmt->execute();

if (!$result) {
    header(header: 'Content-Type: application/json');
    echo json_encode(value: ['success' => false, 'message' => [Database error: ' . $conn->error]]);
    exit;
}

$updateStmt->close();

```



get_minutes.php

```
$route1_id = isset($_GET['route1_id']) ? intval(value: $_GET['route1_id']) : 0;
$student_id = $_SESSION['student_id'];

if ($route1_id <= 0) {
    header(header: 'Content-Type: application/json');
    echo json_encode(value: ['error' => 'Invalid route1_id']);
    exit;
}

// Check if this is the student's own record
$stmt = $conn->prepare(query: "SELECT minutes FROM route1proposal_files WHERE student_id = ? AND route1_id = ?");
$stmt->bind_param(types: "si", var: &$student_id, vars: &$route1_id);
$stmt->execute();
$result = $stmt->get_result();

if ($result->num_rows > 0) {
    $row = $result->fetch_assoc();
    $minutes = $row['minutes'];

    if ($minutes) {
        header(header: 'Content-Type: application/json');
        echo json_encode(value: ['success' => true, 'minutes_path' => $minutes]);
    } else {
        header(header: 'Content-Type: application/json');
        echo json_encode(value: ['error' => 'No minutes found', 'success' => false]);
    }
} else {
    header(header: 'Content-Type: application/json');
    echo json_encode(value: ['error' => 'Record not found or access denied', 'success' => false]);
}

$stmt->close();
$conn->close();
?>
```

generate_endorsement_pdf.php



```

$adviserName = $_GET['adviserName'] ?? 'Unknown Adviser';
$studentNames = isset($_GET['student']) ? explode(separator: ',', string: $_GET['student']) : [];
$studentNames = array_map(callback: 'trim', array: $studentNames); // Remove extra spaces

// Database connection

// Ensure session contains student_id
if (!isset($_SESSION['student_id'])) {
    die("Student ID not found in session.");
}

$student_id = $_SESSION['student_id']; // Assuming student_id is stored in session

// Check if all Route 1 to Route 3 statuses are approved
$allApproved = true;

$stmt = $conn->prepare(query: "SELECT status FROM proposal_monitoring_form WHERE student_id = ?");
$stmt->bind_param(types: "s", var: &$student_id);
$stmt->execute();
$result = $stmt->get_result();

$allApproved = true;

while ($row = $result->fetch_assoc()) {
    if ($row['status'] != 'Approved') {
        $allApproved = false;
        break; // Exit the loop as soon as we find a non-approved status
    }
}
$stmt->close();

```

update_student_inline.php

```

if ($_SERVER["REQUEST_METHOD"] === "POST") {
    // Get form fields
    $fullname = mysqli_real_escape_string(mysql: $conn, string: $_POST['fullname']);
    $department = mysqli_real_escape_string(mysql: $conn, string: $_POST['department']);
    $school_id = mysqli_real_escape_string(mysql: $conn, string: $_POST['school_id']);

    // Check if password fields are filled
    if (!empty($_POST['password']) && !empty($_POST['confirm_password'])) {
        // If passwords are provided, update everything including passwords
        $password = mysqli_real_escape_string(mysql: $conn, string: $_POST['password']);
        $confirm_password = mysqli_real_escape_string(mysql: $conn, string: $_POST['confirm_password']);

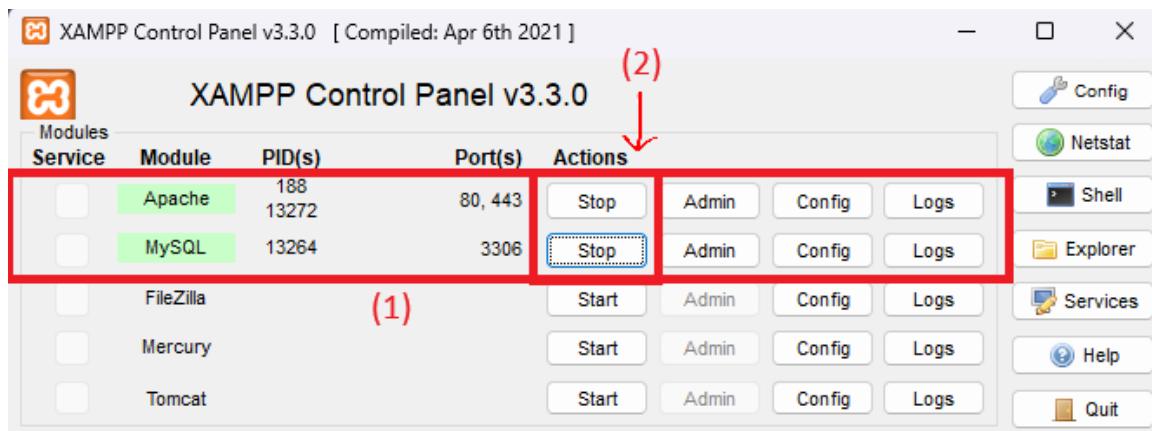
        // Update with passwords
        $sql = "UPDATE student SET fullname = ?, department = ?, password = ?, confirm_password = ? WHERE school_id = ?";
        $stmt = $conn->prepare(query: $sql);
        $stmt->bind_param(types: "sssss", var: &$fullname, vars: &$department, $password, $confirm_password, $school_id);
    } else {
        // If no passwords provided, update only fullname and department
        $sql = "UPDATE student SET fullname = ?, department = ? WHERE school_id = ?";
        $stmt = $conn->prepare(query: $sql);
        $stmt->bind_param(types: "ss", var: &$fullname, vars: &$department, $school_id);
    }

    if ($stmt->execute()) {
        // Redirect with success message
        header(header: "Location: student_register.php?status=success");
    } else {
        echo "Error: " . $stmt->error;
        exit;
    }

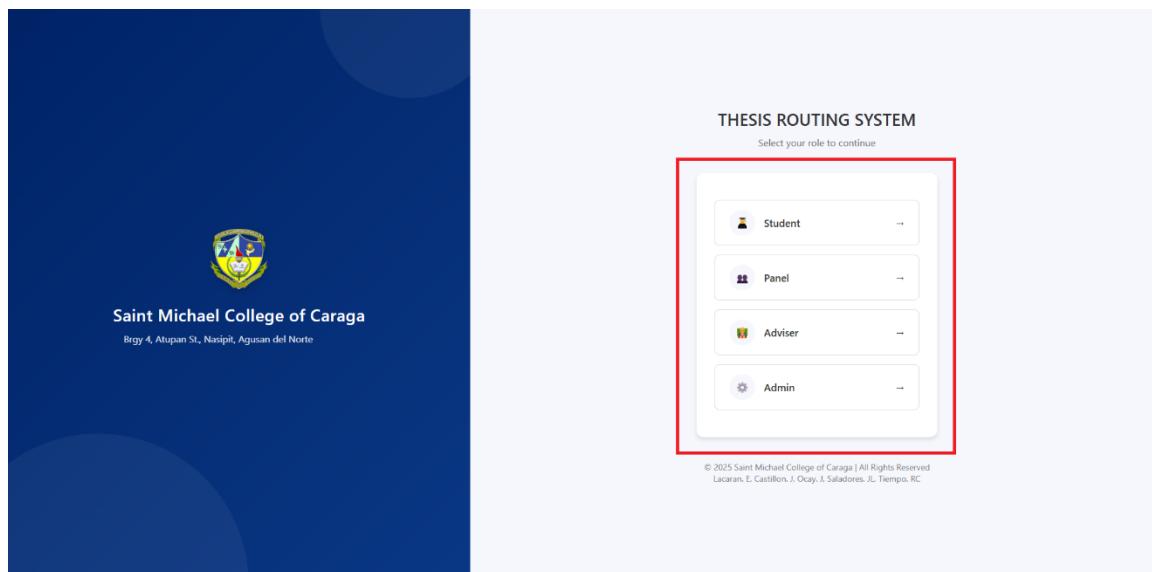
    // Close the statement and connection
    $stmt->close();
    $conn->close();
}

```

B. User's Manual



Ensure that XAMPP's Apache and MySQL services are running (1) before launching the TRS application via the desktop shortcut or by entering <http://localhost/> in your default browser. When the stop button is visible, it indicates that both Apache and MySQL are active. (2) Once these services are running, the system and its database are ready for use.



This is the landing page of the Thesis Routing System for Saint Michael College of Caraga, serving as the main gateway where users select their role to access the platform. The page presents four distinct options—Student, Panel, Adviser, and Admin—allowing users to identify themselves based on their responsibilities in the thesis process.



The image shows the Student Login interface. It features a header with the college's name and crest. Below the header are two input fields: 'ID Number' and 'Password', both highlighted with red boxes and numbered (1) and (2). A blue 'Login' button is positioned between them. To the right of the 'Login' button is a 'Register' button. Red arrows point from the text labels '(3)' and '(4)' to the 'Login' and 'Register' buttons respectively. At the bottom of the form is a 'Back to Home' link.

This UI is specifically designed for students to securely log in to the system by entering their assigned Student ID number (1) and password (2). It serves as the primary access point for student users to interact with the system's features and services. Once the login credentials are entered, students must click the Login button (3) to proceed. In the event that a student does not yet create an account, the interface provides an accessible registration option (4), allowing them to create an account.

The image shows the Student Registration interface. It includes sections for Thesis Information, Account Information, Researchers Information, and Academic Information. Each section contains several input fields, some of which are highlighted with red boxes and numbered (1) through (13). A large red arrow points from the text label '(7)' to the 'Create a password' field in the Account Information section. Another red arrow points from the text label '(13)' to the 'Register' button at the bottom. The interface also includes a 'Back to Login' link at the bottom.



This is where the student registers their thesis information by first entering the title of their thesis (1), followed by the name of the author or research leader (2). Next, the student inputs their given control number (3), then creates a password (4) and confirms it (5) to secure their account. After that, they enter their school ID number (6). The student can then add the names of group members who will be part of the research team (7). Continuing with the registration, the student enters the thesis group number (8) and provides the name of their assigned adviser (9). After supplying all personal and research-related information, the student proceeds to the academic details by selecting the school year (10), choosing their department (11), and selecting their specific course or program (12). Finally, once all fields are completed accurately, the student clicks the "Register" button (13) to complete the registration process.

The screenshot shows the Thesis Routing System interface. At the top, there's a navigation bar with 'Home Page' and 'Submit File' (1). Below that is a sidebar with 'Title Proposal' expanded, showing 'Route 1', 'Route 2', 'Route 3', and 'Final Document' (5). The main area has a table (2) with columns: Control No., Leader, Group No., Title, and Action. One row is highlighted with a red border, showing 'CTHM201' in the Control No. column, 'John Lester Saladores' in the Leader column, '2' in the Group No. column, 'MICA' in the Title column, and 'View' and 'Delete' buttons in the Action column (3). A red arrow points from (3) to the 'View' button. A red box surrounds the entire table row. A red arrow (4) points upwards from the bottom right towards the table. At the bottom left is a 'Logout' button (6).

Control No.	Leader	Group No.	Title	Action
CTHM201	John Lester Saladores	2	MICA	View Delete

This student interface provides a dashboard for submitting and tracking thesis documents, featuring (1) a Submit File section with structured routes for Title Proposal submissions (including Route 1, Route 2, Route 3, and Final Document) and Final, (2) a comprehensive table displaying submitted documents with student names, control numbers, group numbers, and document titles, (3) interactive action buttons including View to check reviewer comments (4) and Delete to



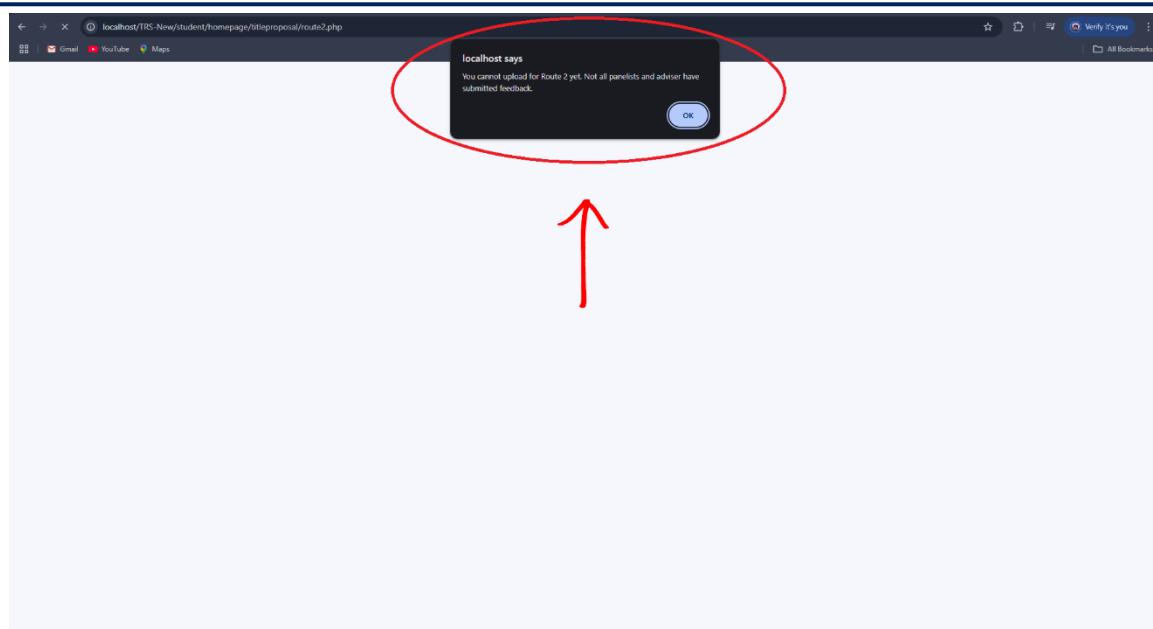
remove submissions, (5) a sidebar for easy navigation between different submission routes that mirrors the Title Proposal and Final document structure, and (6) a conveniently placed Logout button at the bottom of the interface for quick session management, creating an efficient workflow for students to manage their thesis submissions and feedback.

The screenshot shows two windows side-by-side. On the left is a PDF titled 'Certificate_of_Endorsement (2).pdf' which contains the college's logo, contact information, and a 'CERTIFICATE OF ENDORSEMENT' section. This section includes a statement from the adviser, a list of researchers, and an endorsement from the adviser. A red arrow labeled '(1)' points to the right edge of this window, indicating where the document would be viewed. On the right is a web-based 'ROUTING MONITORING FORM' titled 'SAINT MICHAEL COLLEGE OF CARAGA RESEARCH & INSTRUCTIONAL INNOVATION DEPARTMENT'. It displays a table of comments or feedback entries. A red box labeled '(2)' highlights the table. A red circle labeled '(3)' highlights a specific row in the table. A red arrow labeled '(4)' points to the 'Status' column, which shows 'Approved' for all entries. The table has columns for Date Submitted, Chapter, Feedback, Paragraph No., Page No., Submitted By, Date Released, and Status.

Date Submitted	Chapter	Feedback	Paragraph No.	Page No.	Submitted By	Date Released	Status
2025-04-30	2	Feedback	2	2	REA MIE OMAS-as - Adviser	2025-04-30	Approved
2025-04-30	2	change the font size	3	3	Kenneth Barres - Panel	2025-04-30	Approved
2025-04-30	3	feedback	3	3	Leail Palacio - Panel	2025-04-30	Approved
2025-04-30	3	Feedback	3	3	Daria O. Gupit - Panel	2025-04-30	Approved
2025-04-30	3	Change the font size	3	3	Marlon John Timogon - Panel	2025-04-30	Approved
2025-04-30	2	Feedback	2	3	Leail Palacio - Panel	2025-04-30	Approved
2025-04-30	3	Change font size	3	3	Leail Palacio - Panel	2025-04-30	Approved

This is what the student sees after clicking the *View* button on their submitted document.

Here, they can view all the comments or feedback from the panelists and adviser based on the document they submitted. The student will first see the document they uploaded on the left side of the screen (1). On the right side, they can view all the comments provided, including the specific paragraph numbers that need to be revised (2). The system also displays who gave each comment—whether it was a panelist or the adviser (3). Most importantly, the student can check the status of their submission to see whether the panelist or adviser has approved the document (4).



This is an error prompt or alert that says, "*You cannot upload for Route 2 yet. Not all panelists and the adviser have submitted feedback.*" It means that the student must first complete all the required revisions based on the comments from the panelists and adviser from the Route 1, and ensure that the document has been approved. Once all panelists and the adviser have given their approval, the student will then be allowed to proceed to Route 2.

A screenshot of the Thesis Routing System interface. At the top, there's a navigation bar with "Home Page" and "Submit File". On the right, there are links for "Download Endorsement Certificate", "Proposal - Final Document", and "Student: Jake Castillon". Below the navigation, there's a dropdown menu titled "Title Proposal" with options: "Route 1", "Route 2", "Route 3", and "Final Document". The "Final Document" option is highlighted with a red arrow labeled "(1)". To the right of the dropdown is a table with columns: Control No., Leader, Group No., Title, and Action. One row is shown: BSIT2024, Jake Castillon, 2, Thesis Routing System of Saint Michael College, with "View" and "Delete" buttons. A red arrow labeled "(2)" points to the "View" button. At the bottom left is a "Logout" button.



This is the Final Document interface where (1) students can download their Endorsement Certificate - (2) the key requirement to proceed to the Final Stage (3) after successfully completing Route 1, Route 2, and Route 3 of the title proposal submission process.

The screenshot shows the Thesis Routing System interface. On the left, there's a sidebar with navigation options: Home Page, Title Proposal (with sub-options Route 1, Route 2, Route 3), Final Document, and Final. The main area has a table header with columns: Control No., Leader, Group No., and Action. Below the header, there's a row for BSIT2024, Jake Castillon, 2, and an Action column containing a 'View' button. A red arrow points from the text '(1)' to a dropdown menu titled 'Select Department' which lists 'College of Computing and Information Science' and 'College of Tourism and Hospitality Management'. Another red arrow points from the text '(2)' to the 'View' button in the Action column.

This UI is designed for panelists, allowing them to view all the documents submitted by the students assigned to them. The panelist can use the dropdown menu at the top (1) to select specific departments or courses they want to check. After selecting, they can browse the list of submitted documents. By clicking the *View* button (2), the panelist can see the full content of the student's submission. In this view, they can also read comments or feedback previously given by other panelists and the adviser. Additionally, the panelist can write and submit their own comments or feedback based on their evaluation of the student's document.



The screenshot shows two windows side-by-side. On the left is a PDF titled 'Certificate of Endorsement (23).pdf' from Saint Michael College of Caraga, dated April 28, 2024. It lists researchers and their project details. On the right is a web-based 'ROUTING MONITORING FORM' from the Research & Instructional Innovation Department. The table has columns for Date Submitted, Chapter, Feedback, Paragraph No., Page No., Submitted By, Date Released, Status, and Action. Red annotations include: (1) an arrow pointing to the 'Status' column header; (2) a red box around the 'Pending' status dropdown for a row with Date Released 05/05/2024; (3) an arrow pointing to the 'Add Row' button at the top; and (4) an arrow pointing to the 'Submit Routing Form' button at the top.

Date Submitted	Chapter	Feedback	Paragraph No.	Page No.	Submitted By	Date Released	Status	Action
2025-04-30	2	Feedback	2	2	REA MIE CMAS AS - Adviser	2025-04-30	Approved	Save
2025-04-30	2	feedback	2	3	Kenneth Barrera - Panel	2025-04-30	Approved	Save
2025-04-30	1	change the font size	3	3	Leall Palacio - Panel	2025-04-30	Approved	Save
2025-04-30	4	feedback	2	2	Dave O. Gupta - Panel	2025-04-30	Approved	Save
2025-04-30	1	Change the font size	2	2	Mariam Jahn Timogian - Panel	2025-04-30	Approved	Save
2025-04-30	3	Feedback	2	2	REA MIE CMAS AS - Adviser	2025-04-30	Approved	Save
2025-05-02	2	change font size	4	3	Kenneth Barrera - Panel	2025-05-02	Pending	Save
					Kenneth Barrera - Panel	05/05/2024	Approved For Revision	Save
2025-06-02								

This is the UI where the panelist can submit their feedback or comments on the student's paper. In this interface, the panelist can see the status section (1), where they have the ability to mark the student's document as *Approved*, *For Revision*, or *Pending* (2). Additionally, the panelist cannot change the status or comments submitted by other panelists or the adviser, as they do not have permission to modify them. At the top, there is an *Add Row* button (3), which allows the panelist to add a new comment. Once they have finished providing feedback, they can click the *Submit Routing Form* button (4) to officially submit their comments.

The screenshot shows the Thesis Routing System interface. On the left is a sidebar with navigation options like Home Page, Title Proposal, Final, Route 1, Route 2, Route 3, and Final Document. The main area shows a table with columns Control No., Leader, and Action. A dropdown menu labeled 'Select Department' is open, showing 'College of Computing and Information Science' and 'College of Tourism and Hospitality Management'. Red annotations include: (1) an arrow pointing to the 'Select Department' dropdown; and (2) an arrow pointing to the 'View' button in the table's Action column, which is circled.



This is the UI for the adviser, which has the same features as the panel's interface. The adviser can use the dropdown menu at the top (1) to select the department they want to check. They also have the ability to provide comments by clicking the *View* button on the right side of the student's submitted document (2). From there, the adviser can review the paper and submit feedback just like the panelists.

Date Submitted	Chapter	Feedback	Paragraph No	Page No	Submitted By	Date Released	Status	Action
2025-04-30	2	Feedback	2	2	RE A MIE OMAS-as - Adviser	2025-04-30	Approved	(1)
2025-04-30	2	change the font size	3	3	Brian Palacio - Panel	2025-04-30	Pending	(2)
2025-04-30	3	feedback	3	3	Leanne Macario - Panel	2025-04-30	Approved	
2025-04-30	3	Feedback	3	3	Daria V. Gupit - Panel	2025-04-30	Approved	
2025-04-30	2	Change the font size	3	3	Marlon John Timogan - Panel	2025-04-30	Approved	
2025-04-30	2	Feedback	2	3	Uzali Palacio - Panel	2025-04-30	Approved	
2025-05-02					RE A MIE OM	05/02/2025	Save	

This is the UI where the adviser provides their comments or feedback on the student's document. Most importantly, the adviser is the first to give feedback (1), followed by the panelists. Because of this, the adviser's comments are displayed at the top of the list, as they are the first to review the student's paper before any panelist provides input. The adviser also has the ability to set the document's status to Pending, For Revision, or Approved by selecting from the dropdown in the status column (2). Once the status and feedback are set, the adviser presses the Save button under the Action column (3). Additionally, the adviser can add more comments by clicking the Add Row button at the top (4), and they also have the option to hide the form if needed (5).



The screenshot shows the Thesis Routing System Admin interface. At the top, there are dropdown menus for 'Home Page', 'College of Computing and Information Science', and 'All School Years'. Below these are five dropdown boxes labeled 'Panel 1' through 'Panel 5' and a 'Submit' button. A sidebar on the left lists 'Research Proposal', 'Route 1' (highlighted with a red box and arrow), 'Route 2', 'Route 3', 'Final Document', 'Final Defense', 'Department Course', and 'Registered Account' (highlighted with a red box and arrow). The main content area displays a table of assigned panelists. The table has columns for 'Select', 'Control No.', 'Leader', 'Group No.', 'Title', 'Assigned', and 'Action'. Two rows are shown: one for Rylyn Celnar Tiempo (Control No. B9IT212) and another for Jake Castillo (Control No. B9IT2024). Each row includes a 'View Assignments' button and a 'View' button next to the document. Red numbers 1 through 9 with arrows point to various UI elements: (1) points to the search bar; (2) points to the 'Route 1' sidebar item; (3) points to the 'All School Years' dropdown; (4) points to the 'Group No.' column header; (5) points to the 'Submit' button; (6) points to the 'View Assignments' button; (7) points to the 'View' button; (8) points to the 'Route 1' sidebar item; and (9) points to the 'Registered Account' sidebar item.

Select	Control No.	Leader	Group No.	Title	Assigned	Action
<input type="checkbox"/>	B9IT212	Rylyn Celnar Tiempo	2	TRS	View Assignments	View
<input type="checkbox"/>	B9IT2024	Jake Castillo	2	Thesis Routing System of Saint Michael College	View Assignments	View

This is the UI for the Admin, where they can view all documents submitted by students.

Initially, all submissions are sent to the Admin, who is responsible for assigning panelists to each document. The Admin can select a document directly or use the search bar to find it by typing keywords (1). They can also filter the list by selecting the desired course or department (2), as well as the school year (3), using the dropdown menus at the top. Once the appropriate document is selected, the Admin can assign up to five panelists—Panel 1, Panel 2, Panel 3, Panel 4, and Panel 5 (4). After assigning the panelists, the Admin clicks the *Submit* button to finalize the assignment (5).

After submission, the Admin can view the list of assigned panelists for each document by clicking the *View Assignments* button (6), and they can also review the feedback provided by both the panelists and adviser by clicking the *View* button next to the document (7). Additionally, the sidebar displays navigation options for various document stages such as *Research Proposal*, *Route 1*, *Route 2*, *Route 3*, and *Final Document*, including the *Final Defense* (8). The sidebar also provides access to lists of departments, courses, and registered accounts (9).



The screenshot shows the Thesis Routing System interface. On the left, there's a sidebar with options like Research Proposal, Route 1, Route 2, Route 3, Final Document, Final Defense, Department Course, and Registered Account. The main area shows a table with rows for BSIT212 and BSIT2024. A modal window titled 'Assignment Details' is open over the table. The modal contains sections for 'Panelists' (listing Kenneth Barrera, Lealil Palacio, Daisa O. Gupit, and 123) and 'Adviser' (listing REA MIE OMAS-AS). At the bottom of the modal is a yellow 'Edit Assignments' button, which is circled in red. The number '(1)' is placed next to the panelists section, and '(2)' is placed next to the adviser section.

This screenshot shows the same 'Assignment Details' modal window after changes have been made. The dropdowns now show different names: Kenneth Barrera (Research Office) for Panel 1, Lealil Palacio for Panel 2, Daisa O. Gupit for Panel 3, and 123 for Panel 4. The Panel 5 dropdown is empty. The 'Save Changes' button at the bottom is highlighted with a green circle, and the number '(5)' is placed next to it. The rest of the interface remains the same, with the sidebar and table visible in the background.

This is the interface that appears after the Admin presses the *View Assignments* button on a student's document. In this view, the Admin can see all the panelists assigned to the student's paper (1), as well as the name of the assigned adviser (2). The Admin also has the ability to edit the panel assignments by clicking the *Edit Assignment* button (3), which will redirect them to the *Assignment Details* interface. In that interface, the Admin can change the assigned panelists using the dropdown options (4); however, the adviser cannot be changed. Once the changes are made, the Admin must press the *Save Changes* button (5) to successfully update the panel assignments.



Date Submitted	Chapter	Feedback	Paragraph No	Page No	Submitted By	Date Released	Status
2025-05-01	3	resize the text	5	2	Leail Palacio - Panel	2025-05-01	
2025-05-01	2	change the font	3	3	REA MIE CMAS-AS - Adviser	2025-05-01	

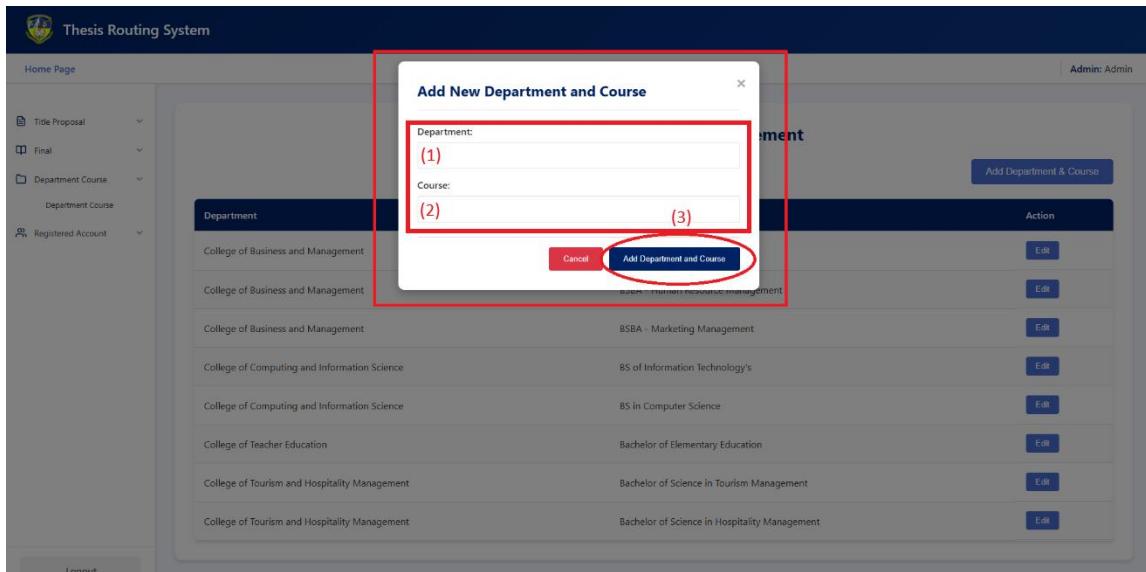
The Admin also has the ability to view the students' submitted papers (1) along with the comments or feedback provided by the panelists and adviser (2). However, the Admin does not have permission to give comments on the document. Their role is limited to monitoring the feedback and progress of the submission.

Department	Course	Action
College of Business and Management	BSBA - Financial Management	Edit
College of Business and Management	BSBA - Human Resource Management	Edit
College of Business and Management	BSBA - Marketing Management	Edit
College of Computing and Information Science	BS of Information Technology	Edit
College of Computing and Information Science	BS in Computer Science	Edit
College of Teacher Education	Bachelor of Elementary Education	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Tourism Management	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Hospitality Management	Edit

This is the Department and Course Management interface, where the Admin can view all registered departments and courses (1). The Admin can add a new department or course by



clicking the *Add Department & Course* button at the top (2). Additionally, the Admin has the ability to edit existing departments and courses if there are any updates or corrections needed—such as changes in school structure or fixing errors—by clicking the *Edit* button on the right side of each department or course (3).



This is the interface that appears after the Admin clicks the *Add Department & Course* button. Here, the Admin can input the name of the department they want to add (1), along with the corresponding course (2). Once the necessary information is entered, the Admin can complete the process by clicking the *Add Department and Course* button at the bottom (3) to successfully save the new Department and Course.



Thesis Routing System

Home Page

Admin: Admin

Department and Course Management

Department	Course	Action
College of Business and Management	(1) BSBA - Financial Management	Save Cancel (3)
College of Business and Management	BSBA - Human Resource Management	Edit
College of Business and Management	BSBA - Marketing Management	Edit
College of Computing and Information Science	BS of Information Technology's	Edit
College of Computing and Information Science	BS in Computer Science	Edit
College of Teacher Education	Bachelor of Elementary Education	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Tourism Management	Edit
College of Tourism and Hospitality Management	Bachelor of Science in Hospitality Management	Edit

(2)

This is the interface for editing departments and courses, which appears after the Admin clicks the *Edit* button. In this view, the Admin can delete the existing department and course names they wish to modify (1), then type in the updated information. Once the changes are made, the Admin can press the *Save* button (2) to complete the update. If the Admin decides not to make any changes, there is also a *Cancel* button available on the side (3) to exit the editing mode without saving.

Thesis Routing System

Home Page

Admin: Admin

List of Registered Panel

Position	Full Name	Department	School ID	Password	Action
panel4	123	College of Computing and Information Science	1123	123	Edit
panel3	Daisa O. Gupit	College of Computing and Information Science	Daisa	123	Edit
panel1	Kenneth Barrera	(2) Research Office	kenneth	123	Edit
panel2	Leaili Palacio	College of Computing and Information Science	apple	123	Edit
panel4	Marlon Juhn Timogan	College of Computing and Information Science	marlon	123	Edit

(1)

(2)

(3)

Add Panel (4)

Logout



This is the interface where the Admin can view all registered panel members (1). The Admin has access to each panelist's account details, including their position, full name, department, school ID, and password (2). If a panelist encounters any issues with their account, the Admin has the ability to edit and update the necessary information (3). Additionally, the Admin can add a new panelist by clicking the *Add Panel* button at the top (4).

Position	Full Name	Department	School ID	Password	Action
panel4	123	College of Computing and Information Science	1123	Enter New Password	(2) Save Cancel (3)
panel3	Daisa O. Gupit	College of Computing and Information Science	Daisa	123	Edit
panel1	Kenneth Barrera	Research Office	kenneth	123	Edit
panel2	Lealli Palacio	College of Computing and Information Science	apple	123	Edit
panel4	Marlon Juhn Timogan	College of Computing and Information Science	marlon	123	Edit

This is the interface where the Admin can edit a panelist's account details (1), especially if the panelist requests changes due to missing or incorrect information. After making the necessary updates, the Admin can press the *Save* button (2) to complete the process. If no changes are needed or the Admin decides to cancel, there is also a *Cancel* button available (3) to discard any modifications and *Add Panel* button to add new panel members (4).



Thesis Routing System

Home Page Admin: Admin

Panelist Registration

Complete Name
First name / Middle name / Last name (1)

Department
(2)

Position
Panel1, Panel2, Panel3, Panel4 (3)

School ID
(4)

Password
(5)

Register (6)

Logout

This is the interface where the Admin can add a new panelist. The Admin must enter the panelist's complete name (1), department (2), position (3), school ID (4), and password (5) to create the account. Once all required fields are filled out, the Admin can register the panelist by clicking the *Register* button at the bottom (6).

Thesis Routing System

Home Page Admin: Admin

List of Registered Advisers

Add Adviser (4)

Full Name	Department	School ID	Password	Action
Lianne Pace	College of Tourism and Hospitality Management (2)	201	123	Edit (3)
REA MIE OMAS-AS	College of Computing and Information Science	reamie	123	Edit

Logout

This is the interface where the Admin can view all registered adviser accounts (1). The Admin has access to each adviser's account details, including their position, full name,



department, school ID, and password (2). If an adviser encounters any issues with their account, the Admin has the ability to edit and update the necessary information (3). Additionally, the Admin can add a new adviser by clicking the *Add Adviser* button at the top (4).

A screenshot of the Thesis Routing System interface. The top navigation bar includes a logo, the title "Thesis Routing System", and a user status "Admin: Admin". A sidebar on the left lists "Title Proposal", "Final", "Department Course", "Registered Account" (which is expanded to show "Panel", "Adviser", and "Student"), and a "Logout" button. The main content area is titled "List of Registered Advisers". It shows a table with two rows of data. Row 1 contains columns: "Full Name" (Lianne Pace), "Department" (College of Tourism and Hospitality Management), "School ID" (201), "Password" (123), and "Action" (Save, Cancel, Edit). Row 2 contains columns: "Full Name" (REA MIE OMAS-AS), "Department" (College of Computing and Information Science), "School ID" (reamie), "Password" (123), and "Action" (Edit). The "Add Adviser" button at the top left is highlighted with a red box and labeled "(4)". The "Save" and "Cancel" buttons in the Action column are highlighted with a red circle and labeled "(2)" and "(3)" respectively. The "Full Name" field in the first row is also highlighted with a red box and labeled "(1)".

Full Name	Department	(1)	School ID	Password	Action
Lianne Pace	College of Tourism and Hospitality Management	(1)	201	123	(2) Save (3) Cancel
REA MIE OMAS-AS	College of Computing and Information Science		reamie	123	Edit

This is the interface where the Admin can edit an adviser's account details (1), especially if the adviser requests changes due to missing or incorrect information. After making the necessary updates, the Admin can press the *Save* button (2) to complete the process. If no changes are needed or the Admin decides to cancel, there is also a *Cancel* button available (3) to discard any modifications and *Add Adviser* button to add new advisers (4).



Thesis Routing System

Home Page Admin: Admin

Logout

Adviser Registration

Complete Name
First name / Middle name / Last name: (1)

Department
(2)

School ID
(3)

Password
(4)

Register (5)

This is the interface where the Admin can add a new adviser. The Admin must enter the adviser's complete name (1), department (2), school ID (3), and password (4) to create the account. Once all required fields are filled out, the Admin can register the adviser by clicking the *Register* button at the bottom (5).

Thesis Routing System

Home Page Admin: Admin

Logout

List of Registered Students (1)

Full Name (2)	Department (3)	School ID (4)	Password (5)	Action
Ell jay Lacaran	College of Computing and Information Science	202251330	123	Edit (6)
Jake Castillon	College of Computing and Information Science	202251243	123	Edit (6)
Jenessa Ocay	College of Computing and Information Science	123	123	Edit (6)
John Lester Saladores	College of Tourism and Hospitality Management	202251252	123	Edit (6)
Rylvin Celnar Tiempo	College of Computing and Information Science	202251468	123	Edit (6)

This is the interface where the Admin can view all registered students (1). It displays each student's personal information, including their full name (2), department (3), school ID (4), and



especially their password (5). If a student requests to change any of their information, they must contact the Admin, who can make the necessary updates by clicking the *Edit* button on the right side (6).

The screenshot shows the Thesis Routing System interface. On the left, there's a sidebar with navigation links: Home Page, Title Proposal, Final, Department Course, Registered Account, Panel, Adviser, and Student. The 'Student' link is currently selected. The main content area has a title 'List of Registered Students'. A table lists student information: Full Name, Department, School ID, Password, and Action. The first row is highlighted with a red box and circled numbers: (1) points to the 'School ID' cell containing '202251330'; (2) points to the 'Password' cell containing '123'; (3) points to the 'Action' column which includes 'Save' and 'Cancel' buttons. Other rows show Jake Castillon, Jenessa Ocay, John Lester Salidores, and Rylvin Celnar Tiempo with their respective details. A red arrow points from the circled '123' in the first row to the '123' in the fourth row's 'Password' cell.

Full Name	Department	School ID	Password	Action
Eli Jay Lacaran	College of Computing and Information Science	202251330	(1) 123 123	(2) Save Cancel (3)
Jake Castillon	College of Computing and Information Science	202251243	123	Edit
Jenessa Ocay	College of Computing and Information Science	123	123	Edit
John Lester Salidores	College of Tourism and Hospitality Management	202251252	123	Edit
Rylvin Celnar Tiempo	College of Computing and Information Science	202251468	123	Edit

This is the interface where the Admin can edit a student's information. If the Admin needs to update the student's password, they can also confirm the new password in a separate field (1) to avoid errors during the update process. Once all necessary changes are made, the Admin can save the updates by clicking the *Save* button on the right (2). If no changes are needed, the Admin can click the *Cancel* button (3) to exit without saving.



C. Letter of Permission


Saint Michael College of Caraga
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www.smccnasipit.edu.ph




December 19, 2024

Mr. Kenneth Ian B. Barrera, MA
Research Head
 Saint Michael College of Caraga
 Nasipit, Agusan del Norte, 8602

Dear Sir,

Greetings!

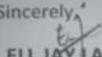
We hope this letter finds you well. We are BSIT 3 students of Saint Michael College of Caraga, currently working on our research study, "Web-based Thesis Routing System for Saint Michael College of Caraga."

We are writing to formally request your permission and collaboration for the development and implementation of our system. Our study aims to create a web-based system to streamline and digitalize the thesis submission and evaluation process, providing students, faculty, and administrators with an efficient and user-friendly platform.

We believe this project will enhance the management of thesis-related activities within your organization and align with the institution's mission of embracing innovation through practical and impactful research. Additionally, the system's outcomes could serve as a foundation for future academic solutions, setting a benchmark for other institutions seeking to improve their academic processes. Rest assured that the data we will gather will remain absolutely confidential and to be used in academic purpose only.

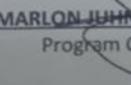
Thank you for considering our request. We are eager to collaborate and discuss this project further at your convenience. We look forward to your positive response.

Sincerely,

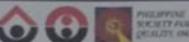

ELL JAY LACARAN
 Research Leader

Approved by:


REA MIE A. OMAS-AS
 Adviser


MARLON JUHN M. TIMOGAN, MIT
 Program Chair

Member:

info@smccnasipit.edu.ph

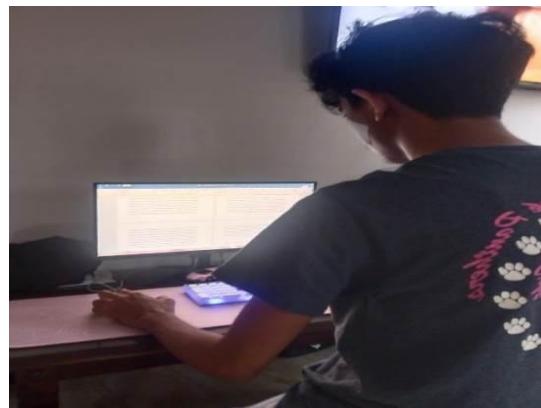


D. Documented Undertakings

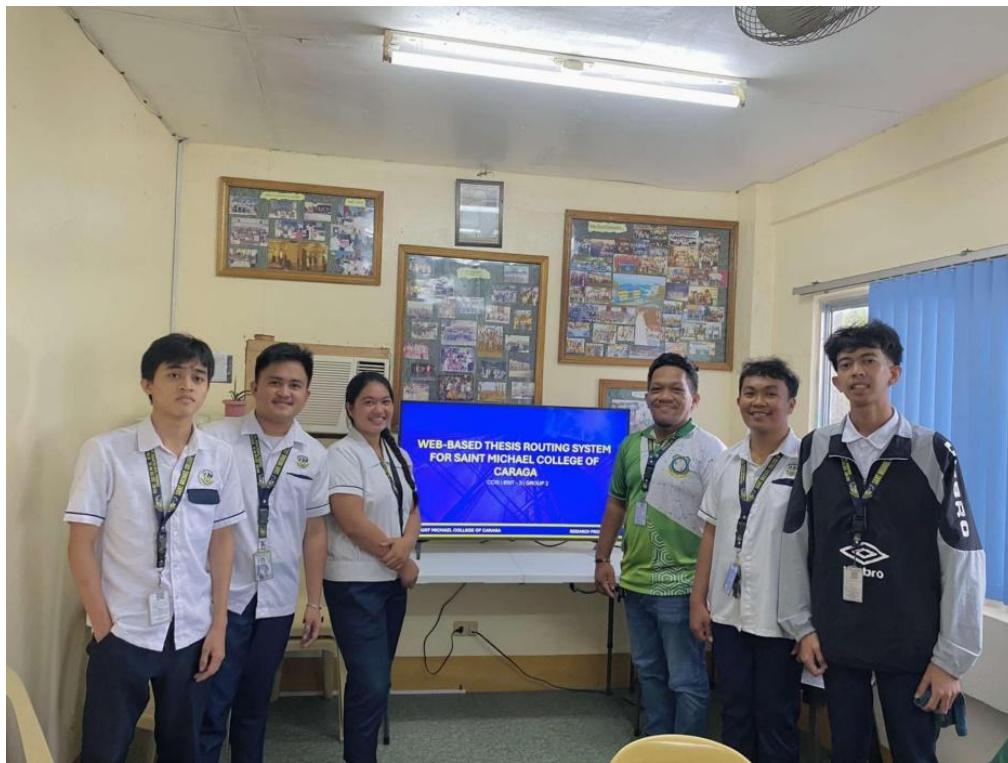
Title Hearing



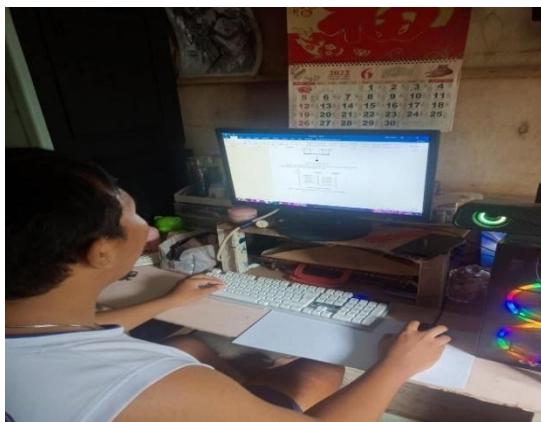
The researchers successfully defended their thesis entitled to, Thesis Routing System for Saint Michael College of Caraga, during the title hearing, with the guidance of their adviser, Rea Mie A. Omas-As.



The researchers worked on Chapters 1 to 3 of their thesis, which included writing the introduction, reviewing related literature, and outlining the software requirements and design specification of their proposed system.



The researchers successfully passed and defended their proposed capstone project during their title proposal, with the guidance and support of their adviser.



The developers are responsible for designing, coding, and integrating the system's main features, managing database connections, creating technical diagrams, and ensuring the system meets all functional requirements through testing and improvements.



Chapter 4 – 5 Making

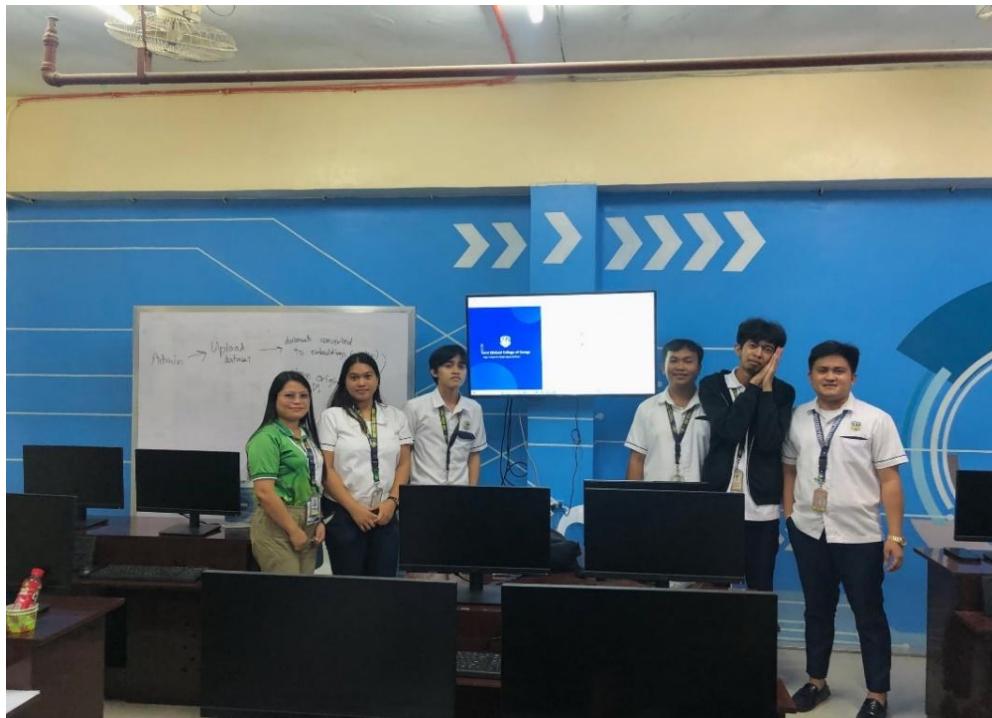


In Chapter 4, the researchers focused on organizing and reviewing the system's source code, ensuring that each function performed as intended. They also analyzed and discussed the feedback gathered from end users through evaluations. This included tallying results, interpreting ratings, and identifying patterns or issues based on the users' experiences with the system. Their goal was to assess how well the system functioned in real use and to highlight areas that needed improvement.

Chapter 5 centered on drawing meaningful conclusions from the findings presented in Chapter 4. The researchers summarized the results, highlighted key insights from the user evaluations, and provided well-thought-out recommendations to improve the system. These suggestions were based on both the technical analysis and the practical needs identified during user testing. The chapter also pointed out possible directions for future research and system enhancements to ensure long-term effectiveness and user satisfaction.



Final Defense



The research team after successfully passing their final defense and completing the debugging phase of their project.

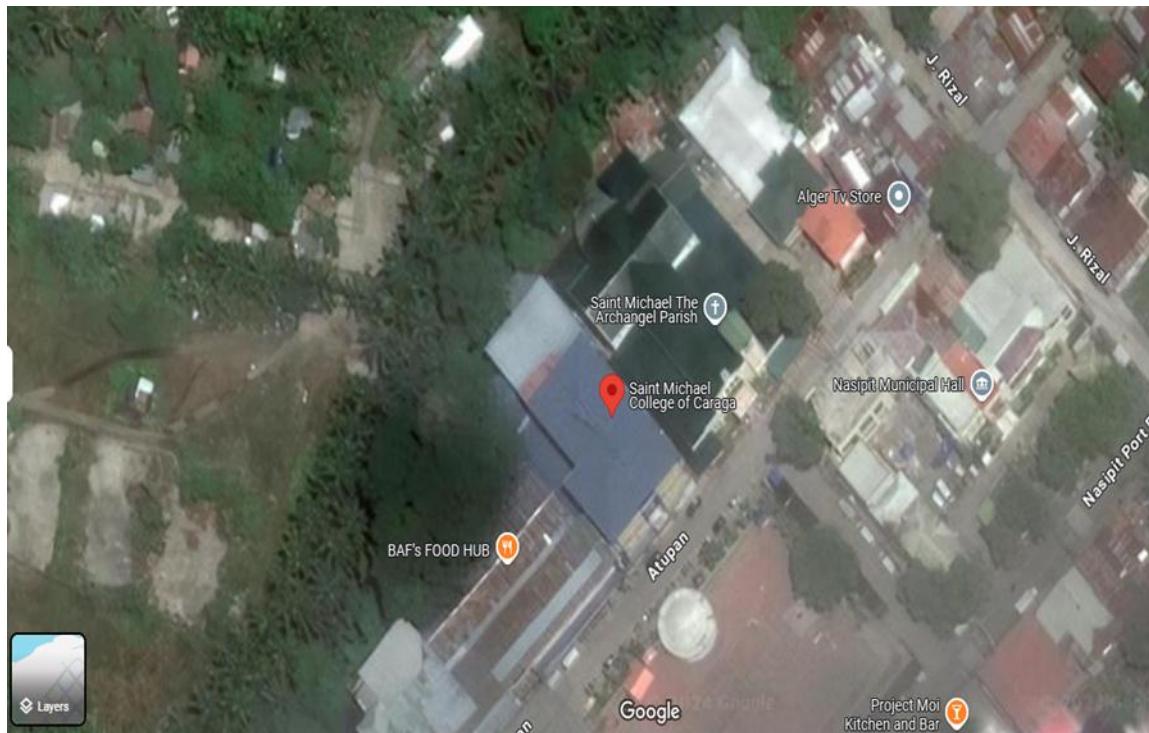


E. Certificate of Implementation



F. Map of the Research Locale

SAINT MICHAEL COLLEGE OF CARAGA



Saint Michael College of Caraga, or SMCC, is a private Catholic school in Nasipit, Agusan del Norte, managed by the Roman Catholic Diocese of Butuan. It was founded in 1948 by the Missionaries of the Sacred Heart (MSC) fathers. The institution offers both basic and higher education, with its main campus located on Atupan Street, Barangay 4 Poblacion, Nasipit, Agusan del Norte. Its elementary and senior high school departments are housed on a separate campus in Barangay Triangulo.

**G. Curriculum Vitae**

Name : Ell jay Lacaran

Address : D-3 Camagong Nasipit, ADN

Email : ljaylacaran@gmail.com

**Personal Information**

Sex : Male

Date of Birth : July 21, 2003

Height : 164cm

Weight : 70kg

Civil Status : Single

Educational Attainment

Elementary : Camagong Elementary School

Secondary : Saint Michael College of Caraga

Tertiary : Saint Michael College of Caraga

Membership /Affiliations

ORGANIZATION	POSITIONS HELD
N/A	

**G. Curriculum Vitae**

Name : Jake Castillon

Address : Poblacion 4 Nasipit, ADN

Email : jake_castillon@smccnasipit.edu.ph

**Personal Information**

Sex : Male

Date of Birth : February 4, 2002

Height :

Weight :

Civil Status : Single

Educational Attainment

Elementary : Siquijor Elementary School

Secondary : Siquijor National High School

Tertiary : Toledo National High School

Membership /Affiliation

ORGANIZATION	POSITIONS HELD
N/A	

**G. Curriculum Vitae**

Name : Jenessa Suazo Ookay

Address : Gumabon Magsaysay Misamis Oriental

Email : jenessa_ocay@smccnasipit.edu.ph

**Personal Information**

Sex : Female

Date of Birth : September 30, 2002

Height :

Weight :

Civil Status : Single

Educational Attainment

Elementary : Gumabon Elementary School

Secondary : Consuelo National High School

Tertiary : Consuelo National High School

Membership /Affiliations

ORGANIZATION	POSITIONS HELD
N/A	

**G. Curriculum Vitae**

Name : John Lester J. Saladores

Address : District 6 Punta Nasipit, ADN

Email : johnlester_saladores@smccnasipit.edu.ph

**Personal Information**

Sex : Male

Date of Birth : September 14, 2003

Height : 170cm

Weight : 53kg

Civil Status : Single

Educational Attainment

Elementary : Punta Elementary School

Secondary : Saint Michael College of Caraga

Tertiary : Saint Michael College of Caraga

Membership /Affiliations

ORGANIZATION	POSITIONS HELD
N/A	

**G. Curriculum Vitae**

Name : Rylvin Celnar D. Tiempo

Address : Culit Nasipit, Agusan del Norte

Email : rylvincelnar_tiempo@smccnasipit.edu.ph

**Personal Information**

Sex : Male

Date of Birth : December 7, 2002

Height :

Weight :

Civil Status : Single

Educational Attainment

Elementary : Culit Elementary School

Secondary : Culit National High School

Tertiary : Culit National High School

Membership /Affiliations

ORGANIZATION	POSITIONS HELD
N/A	



CERTIFICATE OF AUTHENTIC AUTHORSHIP

This is to certify that I/we, the undersigned author(s), have solely and honestly written the entire paper titled: "**Web-based Thesis Routing System for Saint Michael College of Caraga**" All contents, ideas, data, and analysis presented in this paper are the results of my/our own diligent work and intellectual effort. The paper has been crafted to the best of my/our abilities, in full compliance with academic integrity standards and ethical research practices.

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Signed this

Date: [Click here to enter text.](#)

Location: [Click here to enter text.](#)

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