

**INTEGRATING RECOMMENDER AND ENROLLMENT SYSTEM FOR ENHANCE  
EDUCATION**

A Capstone Project

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of the Requirements for the Degree

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

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## APPROVAL SHEET

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R.A.P.C

K.O.J

K.D.T

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## ABSTRACT

**Co, Ronnell Andrei; Torgano, Kim; Jordan, Kerwin “Integrating LMS, Grading, Recommender, and Enrollment System to Enhance Education” (Eastern Visayas State University, December 2024, Tacloban City)**

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The Integration of Learning Management Systems (LMS) with recommender systems has transformed the education sector by optimizing student enrollment, grading, and course recommendations. This study focused on the development and implementation of an integrated enrollment, grading, and recommendation system at Simeon Ocdol National High School to address inefficiencies in data management, administrative workload, and student course selection. By streamlining enrollment and automating course recommendations based on student performance and interests, the system enhanced decision-making for students, teachers, and administrators. The research employed the iterative development model, ensuring continuous refinement and evaluation. Results, based on ISO 25010 software quality standards, demonstrated high user satisfaction, particularly in functional suitability, performance efficiency, and security. The study concludes that integrating LMS with a recommender system significantly improves operational efficiency, enhances student guidance, and fosters a data-driven academic environment.

*Keywords:* Learning Management System, Recommender System, Student Enrollment, Automated Grading, Educational Technology, Data Integration, Academic Guidance, ISO 25010 Evaluation, High School Education, Course Recommendation.

## **Chapter I**

### **INTRODUCTION**

The use of information and communication technology (ICT) had revolutionized education by changing how lessons were delivered and knowledge was acquired (Timotheou et al., 2022). However, schools often faced challenges with managing student data, grades, and course recommendations due to separate systems that did not integrate well, leading to inefficiencies and higher administrative costs (Forrester, 2019). This lack of synchronization caused redundant data management and wasted resources, ultimately reducing overall institutional efficiency (Anderson, 2019).

Simeon Ocdol National High School faced numerous challenges despite having an in-house enrollment system. While this system handled enrollment procedures, it did not integrate with other processes such as course recommendations, grading, or student data management, leading to inefficiencies. The manual management of student data and grading remained labor-intensive and prone to human error. This method increased the administrative burden and resulted in inconsistent record-keeping.

Moreover, teachers, administrators, and students did not have immediate access to up-to-date information regarding grades or course offerings. The lack of instant access to current information hindered educators, administrators, and students from meeting student requirements and making timely decisions. Handling student records and grades manually made it more difficult to maintain accurate and current data. Poor data management made it difficult to conduct exhaustive research or reach rational conclusions that could have enhanced the educational experience.

The absence of an integrated digital system for course recommendations and grading also limited student guidance. Students found it difficult to receive personal guidance on course selection

or career paths in the absence of a recommender system. Without access to a system that enabled well-informed decisions based on their interests, past academic achievement, and future aspirations, students frequently made less-than-ideal choices, negatively affecting their performance and satisfaction with school.

A significant administrative load remained a challenge despite the existing in-house enrollment system. Staff still had to manually handle multiple responsibilities, such as calculating grades and maintaining student data. This increased the possibility of mistakes and consumed time and resources that could have been better allocated to more hands-on educational activities.

In order to solve these problems, the suggested integration of the in-house enrollment system with recommender and grading systems aimed to offer a unified platform that boosted operational effectiveness, decreased redundancy, and enhanced the overall educational experience for both instructors and students.

This study focused on simplifying the school's processes. It intended to consolidate the existing in-house enrollment system with new recommendation and grading features into a single, unified platform. Teachers, administrators, and students benefited from this integrated system as it streamlined processes and saved time. Repeating the same tasks in different locations was no longer necessary (Tumbull, Chugh, & Luck, 2019). This unified system also allowed everyone to view the necessary information in one place, making it easier to make decisions about class offerings and how to enhance the school.

Furthermore, incomplete data integration from these various platforms made it difficult to conduct thorough data analysis, reducing the quality of insights available for informed decision-making in educational institutions (Buijsse, Willemsen, & Snijders, 2023). Another issue was the subpar user experience that resulted from instructors and students struggling to switch between

platforms, leading to frustration and diminished satisfaction among users (Rajabalee & Santally, 2020).

A recommender system (RS) was a technique that assisted users in quickly locating interesting options from a large pool of related items. RS were intelligent programs that prescribed a user's next option based on several factors, such as preferences or the user's history. The abundance of choices in online systems necessitated the deployment of RS to help individuals narrow their searches and make informed selections. Recommendation systems applied mathematical and artificial intelligence techniques to find the most optimal and suitable recommendations for the user (Roy & Dutta, 2022).

Predicting student enrollment and success was vital for timetabling and allocating lecturers to students to ensure that student learning was adequately supported. Students required assistance in choosing career paths by selecting elective courses, but they often lacked information regarding course objectives. As the volume of data and information on available courses increased, students faced challenges in making the right decisions. When students mismatched their current and preferred pathways, it resulted in academic disruptions such as low performance, high dropout rates, longer course completion times, and graduates who quickly changed their profession (Ralph, Schneider, Benson, Ward, & Vartia, 2021).

The proposed capstone project focused on integrating the existing in-house enrollment system with grading and recommender systems to enhance educational experiences and outcomes. By offering a holistic solution that addressed all aspects of educational management, the suggested technology aimed to optimize and improve the effectiveness of academic processes.

## **Objectives of the Project**

To design, develop and integrate Strand Recommender and Enrollment System for enhanced education.

The study aims to accomplish the following specific objectives:

1. Develop an enrollment system that ensures accessibility and delivers system notifications.
2. Design a recommendation module that suggests suitable academic strands for Grade 10 students.
3. Evaluate the software quality of the developed system using the ISO 25010 standard.

## **Scope and Delimitations of the Project**

The system focused on streamlining key school processes, such as enrollment and grading. Teachers could add subjects for students to enroll in. They would input grades quarterly, and these grades would automatically connect from Form 138 (Report Card) to Form 137 (Permanent Record). Students and parents could easily view grades online. Administrators were able to assign subjects to teachers and manage subject allocations. Additionally, a career guidance recommender system was available to grade 10 students in the 4th quarter to provide insights on which strand was the best match for them.

## **Significance of the Project**

This project improved school operations by automating enrollment and grading, making it easier for students to enroll in the right subjects and for teachers to input grades. It gave students and parents real-time access to grades. Administrators benefited from better subject assignment management, and the career guidance recommender system helped students make informed

decisions about their future paths. Overall, the project enhanced communication, efficiency, and guidance within the school.

**Administrators.** School administrators, such as principals and department heads, are stakeholders who oversee the implementation of the student portal and ensure it aligns with school objectives and policies.

**Teachers.** Teachers are key stakeholders in the project, as they will use the student portal to monitor student submissions, provide feedback, and communicate with students.

**Students.** They are key stakeholders, as they will use the student portal for submitting assignments, accessing course materials, and communicating with teachers.

**Other Public Schools.** Refers to educational institutions that are structured similarly to Simeon OCDOL National High School, aiming to offer accessible and quality education funded by public resources.

**Future Researcher.** People interested in advancing educational technology and practices in public schools, aiming to study, innovate, and implement effective solutions to improve learning outcomes, teacher efficiency, and administrative effectiveness.

## **Chapter II**

### **REVIEW OF RELATED LITERATURE**

#### **Related Literature/Studies**

In recent years, the education environment has become more complex, posing constant challenges in efficiently and effectively managing learning resources such as lesson planning, student progress tracking, and corporate training, which can be overwhelming. Educational recommendation systems (ERS) play an important role for both educators and students (Da Silva et al., 2022). Recommender systems are customized information filtering technologies that determine a set of items that will be interesting to a user or predict whether a target user would enjoy a given item. Effective application of recommender systems in education requires consideration of various factors such as students' learning styles, competencies, and degree of knowledge (Torres, 2022). These systems provide tailored content based on users' unique needs, increasing platform usage and engagement, reducing attrition, and enhancing marketing and inventory management (Benedetto, 2023). Recommendation systems have developed into an application area combining various computational methods, including information filtering, data mining, and machine learning, which support teaching and learning activities (Tarus et al., 2019).

In the context of high school education, strand recommender systems have gained attention for their ability to guide students in selecting the most appropriate academic or technical track based on their skills, interests, and career goals (Bacalso, 2021). A course recommendation system can help students choose courses that align with their interests and abilities, improving their academic and professional development. In particular, Atienza et al. (2022) presented a study focusing on a hybrid methodology that combines ontology to enhance recommender systems, specifically relevant

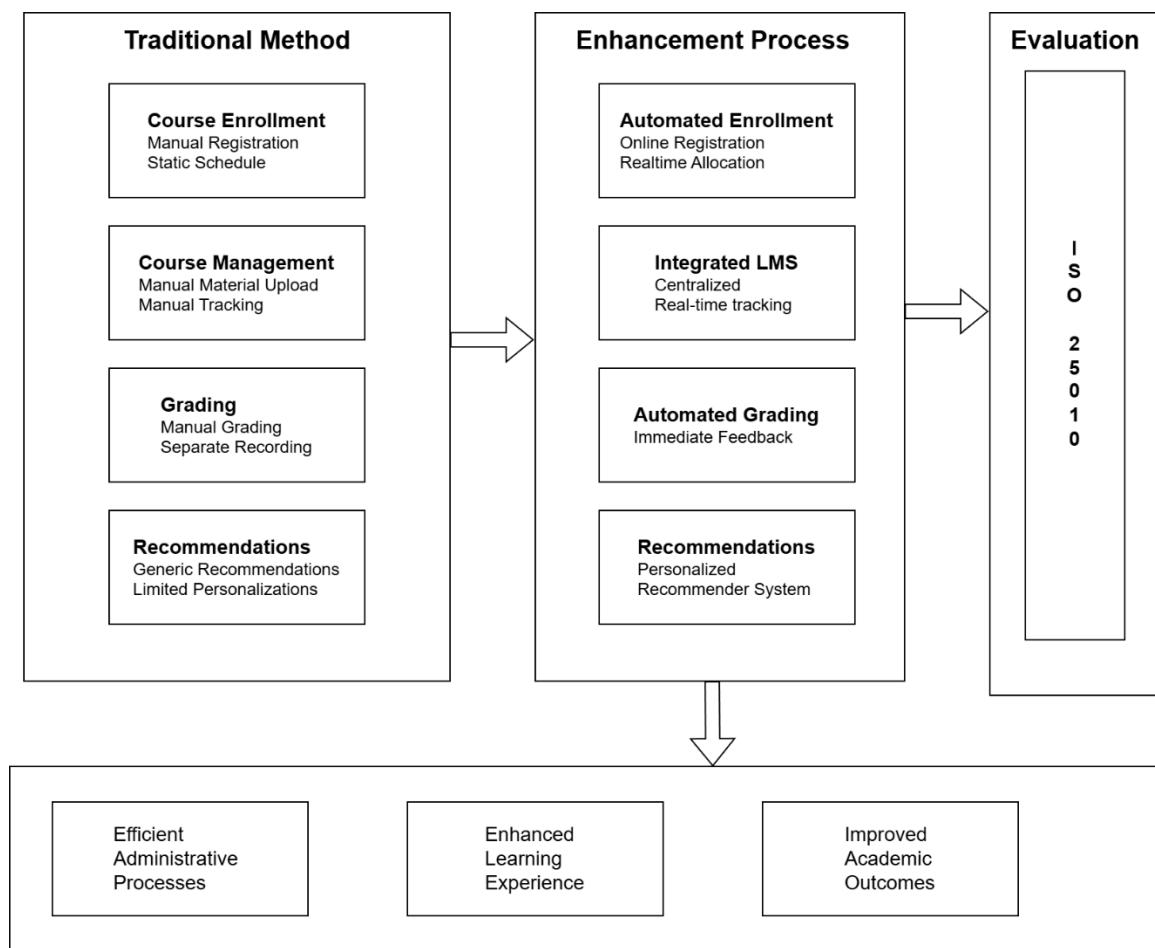
for assisting students in selecting appropriate career tracks. The focus on personalized guidance through recommender systems is especially crucial in high school education, where decisions on academic strands directly impact students' future academic and career trajectories. A study by Isinkaye et al. (2015) developed a recommendation system using a combination of decision trees and collaborative filtering to recommend high school streams. The system considered academic performance, interests, and feedback from previous students to improve recommendation accuracy, thereby supporting personalized learning pathways. Another study by Natividad et al. (2019) introduced a machine learning-based system that incorporated student personality traits and career preferences to recommend academic strands in senior high school, emphasizing the importance of both academic and personal factors in strand selection. Bucad (2024) developed a career path recommender system for Grade 10 students, using machine learning algorithms and various student data such as grades, personality traits, and family background, to help students select the SHS track that best fits their abilities and career goals. Similarly, Acang et al. (2023) highlights the challenges faced by students in making career decisions, particularly those entering tertiary education. This research proposes a recommender system that generates degree program recommendations based on students' profiles and historical records, which identify the strengths and skills relevant to their secondary education. Utilizing Collaborative Filtering and k-Nearest Neighbor algorithms, this system achieved a hit score of 92% with six recommendations and maintained a fast generation time of less than 0.05 seconds, handling approximately 1,200 requests per minute. The promising results of this system demonstrate its effectiveness in assisting students in making informed decisions about their future careers. Additionally, a study by Hernandez and Atienza (2021) that developed a career track recommender system using a Deep Neural Network (DNN) model aims to assist guidance counselors in helping students select suitable career tracks. This addresses the issue of track

uncertainty faced by Junior High School students, many of whom shift programs when they discover their chosen tracks do not suit them. The study employs feature engineering to refine student attributes for the predictive model, analyzing data from 1,500 students in the K-12 curriculum, including grades, sex, age, number of siblings, parent income, and academic strand. The DNN algorithm achieved a prediction accuracy of 83.11%, showcasing its effectiveness in assisting counselors and improving the decision-making process regarding students' SHS tracks. Furthermore, the study by Grewal and Kaur (2016) titled "Developing an Intelligent Recommendation System for Course Selection by Students for Graduate Courses" proposes a system that predicts course selections based on students' academic performance and job interest, using clustering techniques to identify patterns and relationships within the data. This paper also reveals the research process involved in developing such a recommender system, aiming to guide students towards appropriate graduate courses based on their individual profiles.

A student enrollment system helps staff members enroll students and maintain their records, including verifying data, creating merit lists, and maintaining communication with parents and students (Joshi, 2023). The online admissions and student enrollment process can be laborious due to extensive management and analysis of inquiries, planning marketing strategies, and handling student records. An online enrollment process offers benefits such as a centralized system for finding, connecting with, and enrolling students, simplifying admissions, automating payments, ensuring data accuracy, and saving time and money for institutions. Higher education institutions benefit from integrated platforms that manage the entire enrollment and application process, automate admissions, manage billing and payment plans, ensure data security, and provide insightful reports (Notermans, 2023). A good enrollment system should include essential features like task management, automated follow-ups, admission analytics, and inquiry management to

support efficient registration procedures (Mthembu, 2022). The study by (2023), evaluates the Bato Institute of Science and Technology Online Enrollment System, highlighting its effectiveness in managing student details, grade reports, and billing through a computerized system. The research concluded that the system is efficient and user-friendly but recommends ongoing improvements to address potential future challenges. Furthermore, the study by Sagarino et al. (2019) assessed the efficiency and effectiveness of a university enrollment system through a survey of 365 college students, revealing it to be only averagely effective and highlighting issues such as insufficient evaluators and inadequate familiarity with the curriculum.

### Conceptual Framework of the Study



**Figure 2-1.** Conceptual/Theoretical Framework

The traditional educational process, course enrollment involves manual registration where students fill out forms, and the schedule remains static. Course management requires instructors to manually upload materials and track student progress. Grading is done by hand, and grades are recorded separately, making it time-consuming to compile and analyze results. Recommendations for courses or resources are generic and lack personalization, providing broad, non-specific advice to students.

The enhancement process automates many of these tasks. Automated enrollment allows students to register online with real-time schedule updates, increasing flexibility and convenience. An integrated Learning Management System (LMS) centralizes all course materials and activities, with real-time tracking of student progress. Grading becomes automated, providing immediate feedback to students and reducing the workload on instructors. Personalized recommendations are generated based on each student's profile and performance, offering more relevant and tailored advice to enhance the learning experience.

### **Definition of Terms**

To fully understand the terms used in this research. The following terms are technically and operationally defined:

**Automated Grading System.** A technology that automates the process of assessing and recording student assignments and tests, providing quick feedback and enhancing grading accuracy.

**Automation.** The use of technology to perform tasks without human intervention, increasing efficiency and reducing errors.

**Course Administration.** The process of managing course-related activities, including content uploading, student progress tracking, and resource allocation.

**Enrollment.** The process of registering students for courses, handling tasks such as course selection and prerequisites checking.

**Enrollment System.** A platform or software that manages the process of student registration for courses, handling tasks such as course selection, prerequisites checking, and real-time updates.

**Interactivity.** The quality of engaging students actively through digital tools, facilitating participation and engagement.

**Interactive Learning Tools.** Digital tools that facilitate interactive educational activities, such as discussion forums and virtual classrooms, enhancing student engagement and participation.

**Learning Management System (LMS).** A software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, or learning and development programs.

**Recommender System (RS).** A recommender system designed to help students choose a suitable academic strand based on their responses to specific questions would work by analyzing their preferences, interests, and strengths. Here's how you could define and structure such a system.

**Student Portal.** An online platform within the LMS where students can submit assignments, access course materials, communicate with teachers, and view personalized information such as course recommendations and progress.

**System.** A combination of hardware and software designed to perform specific functions within an educational context, such as an LMS.

**User.** An individual who interacts with the learning management system, including students, teachers, and administrators.

## Chapter III

# OPERATIONAL FRAMEWORK

### Materials

The materials used to develop the system included software, hardware, data, and the systems environment, as discussed below.

### Software

The following table presented the software that was used to develop the system.

**Table 3-1.** System Software

Software	Version	Description
Xampp	8.2.12	Xampp (class-platform, Apache, MySQL, PHP, and Perl) allows you to create WordPress websites on your computer using a local web server. This simple and lightweight solution is "cross-platform," meaning it works on Windows, Linux, and Mac.
Bootstrap	5	a free and open-source front-end development framework, is used to create websites and web applications. The Bootstrap framework, which is built with HTML, CSS, and JavaScript (JS), makes it easier to create responsive, mobile-first websites and apps.
Visual Studio Code	1.92	is a text editor specifically designed for writing and editing computer code. It supports a wide variety of programming

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languages through extensions, providing syntax highlighting, code completion, and other functionalities to make coding more efficient.

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## Hardware

The following presented the hardware that was used to develop the system.

**Table 3-2.** System Hardware

Hardware Used	Model	Specification
Laptop	DESKTOP-D4OVBH0	Windows 11 Home
		Intel® Core™ i5 – 10210U
		CPU @ 1.60GHz 2.11 GHz
		8 GB RAM
		Intel Graphics

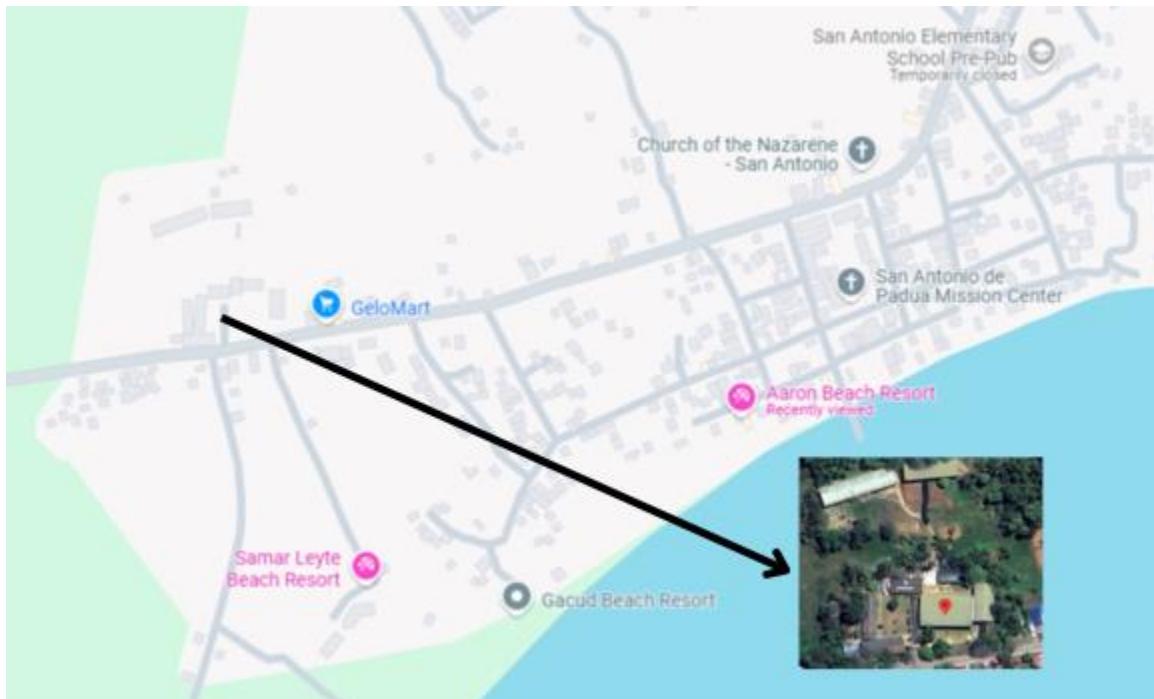
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## Data

The proponents obtained data through an interview that asks a variety of questions to acquire direct responses from the target user. This allows the proponents to know the relevance of pursuing the proposed study.

## System Environment

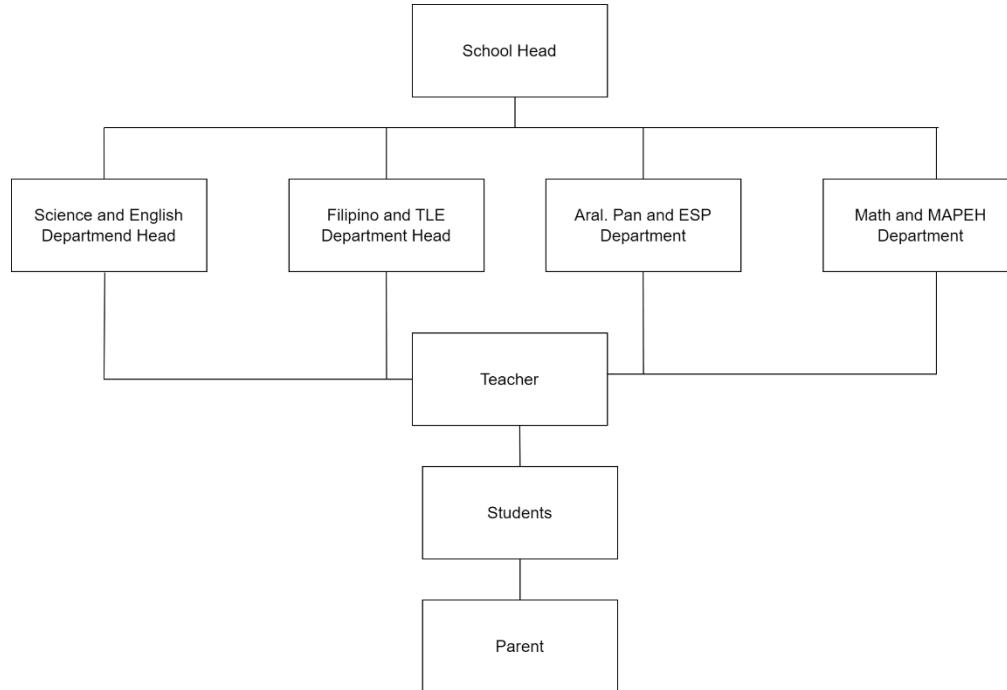
**Locale.** This is where a specified area or subject is being studied in a project. It is where the study is conducted. The project being developed is for one of the national high schools in Basey, Samar.



**Figure 3-1.** Map of Simeon Ocdol National High School

The map view shows the boundaries of Basey, Samar where the project will be implemented, the Simeon Ocdol National Highschool is located at Barangay San Antonio, Basey, Samar.

## Organizational Chart



**Figure 3-2. Organizational Chart**

## Population of the Study

The population of the study is composed of 31 teachers and 718 students, in Simeon Ocdol National Highschool which are the prospective user of the proposed System.

## Description of the Present System

Since it was founded, Simeon Ocdol National High School has utilized the manual approach to manage grades and enrollment. The present system is a comprehensive platform designed to assist grade 10 students in selecting the most suitable academic strand for grade 11, based on their performance and interests. It includes a recommender system, where teachers input students' grades across various subjects. The system analyzes this data to identify students' strengths and suggests appropriate strands such as ICT, ABM, or HUMMS. In addition, the system features an enrollment module that allows students to register for their chosen strand, ensuring a smooth

transition into grade 11. By integrating recommendation, grading, and enrollment processes, the system provides a streamlined, data-driven approach to help students make informed academic decisions.

### **Limitation/Drawbacks of the Present System**

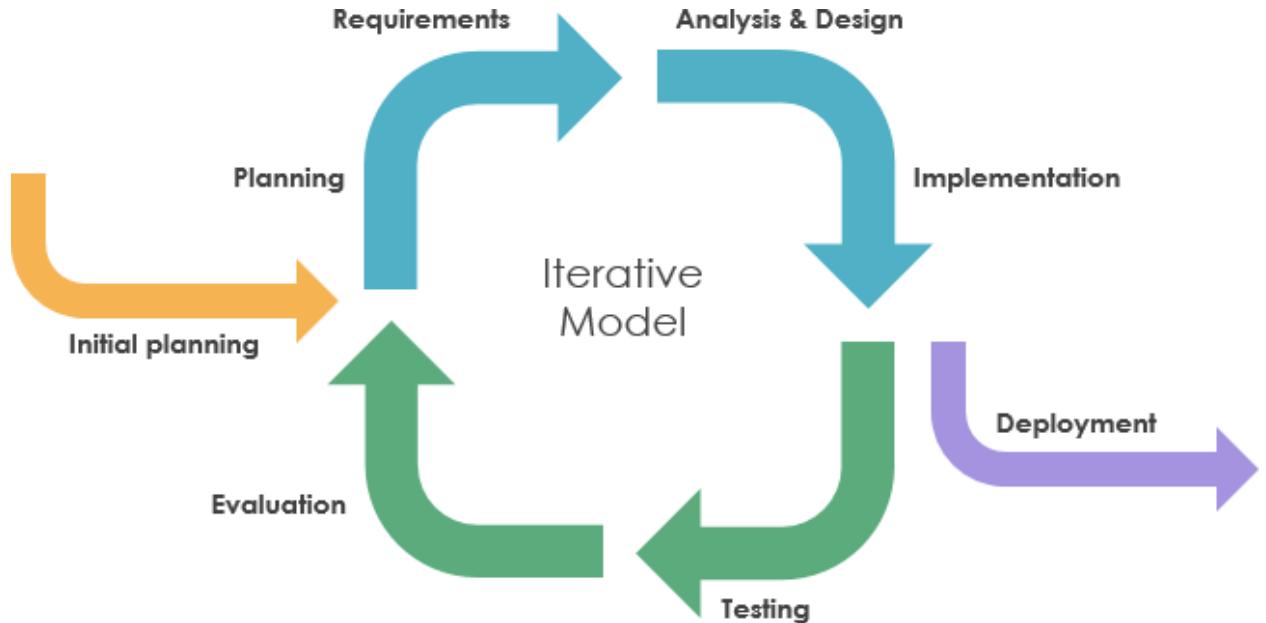
The current manual approach at Simeon Ocdol National High School has various shortcomings. The reliance on paper-based methods for grading and enrollment increases inefficiencies and delays, resulting in longer processing times and a higher risk of mistakes. The lack of communication between these procedures results in fragmented data management, which leads to errors and redundant administrative work. Furthermore, the absence of real-time data processing impedes rapid decision-making and feedback, whereas physical record-keeping risk of data security and accessibility.

There was no system for students to identify what strand to take for incoming senior high school resulting to decrease of enrollment due to mis alignment of student's interests.

## **Methods**

### **Iterative Model**

The iterative model, also known as the iterative development model or incremental development model, is a software development lifecycle (SDLC) approach that emphasizes incremental progress and continuous feedback. It breaks down the development process into smaller, more manageable cycles or iterations.



**Figure 3-3.** Iterative Model

### Planning and Requirements

In this phase, the proponents performed title gathering and interviews. The first step in developing the project was gathering information and finalizing the project's title. The proponents conducted an interview at Simeon Ocdol National High School to collect the necessary information and data for the project.

### Gantt Chart

This Gantt chart illustrated the duration of activities planned for the proposed system development. This overview assisted in estimating the project timeline and identifying the necessary resources.

**Table 3-3.** Gantt Chart

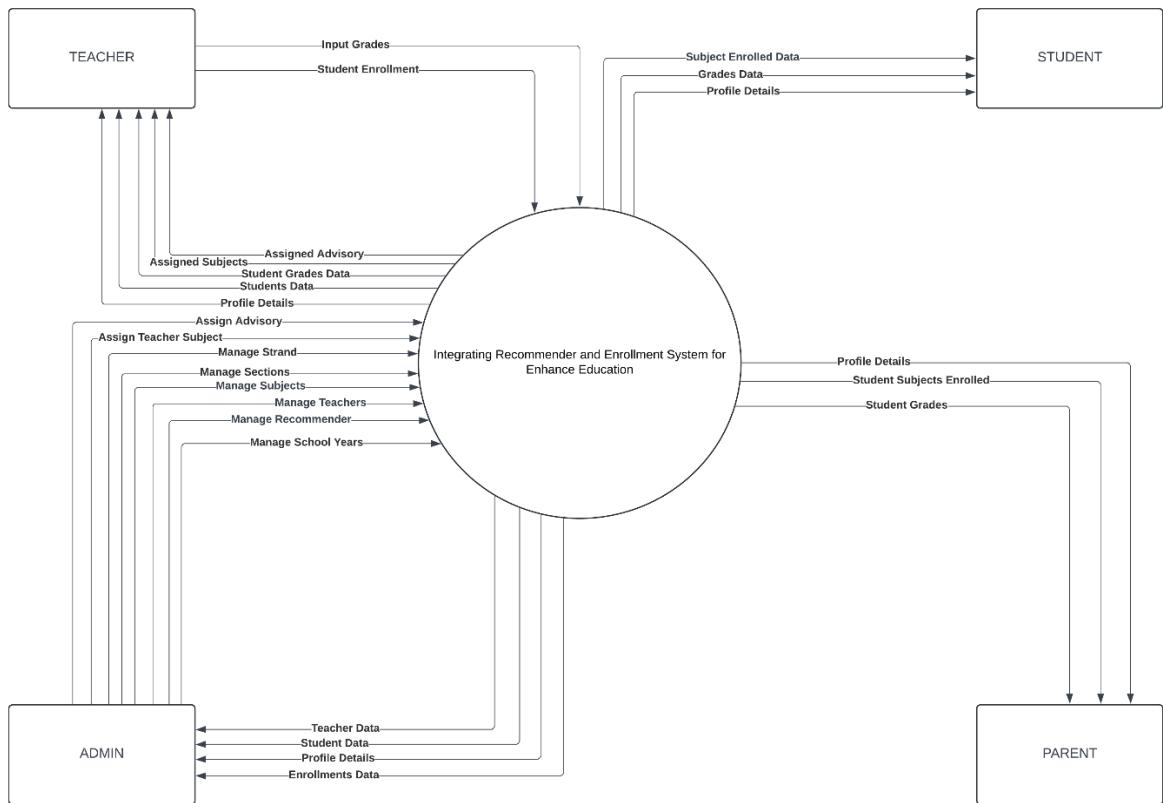
Planning & Requirements																								
Implementation																								
Testing																								
Evaluation																								
Deployment																								

## Analysis and Design

This system illustrated data and process modeling through diagrams and flowcharts, making it easier to comprehend the flow of the system. The design provided a clear view of the system architecture and solution strategies. Additionally, it identified the stakeholders and their specific roles within the system.

## Data and Process Modeling

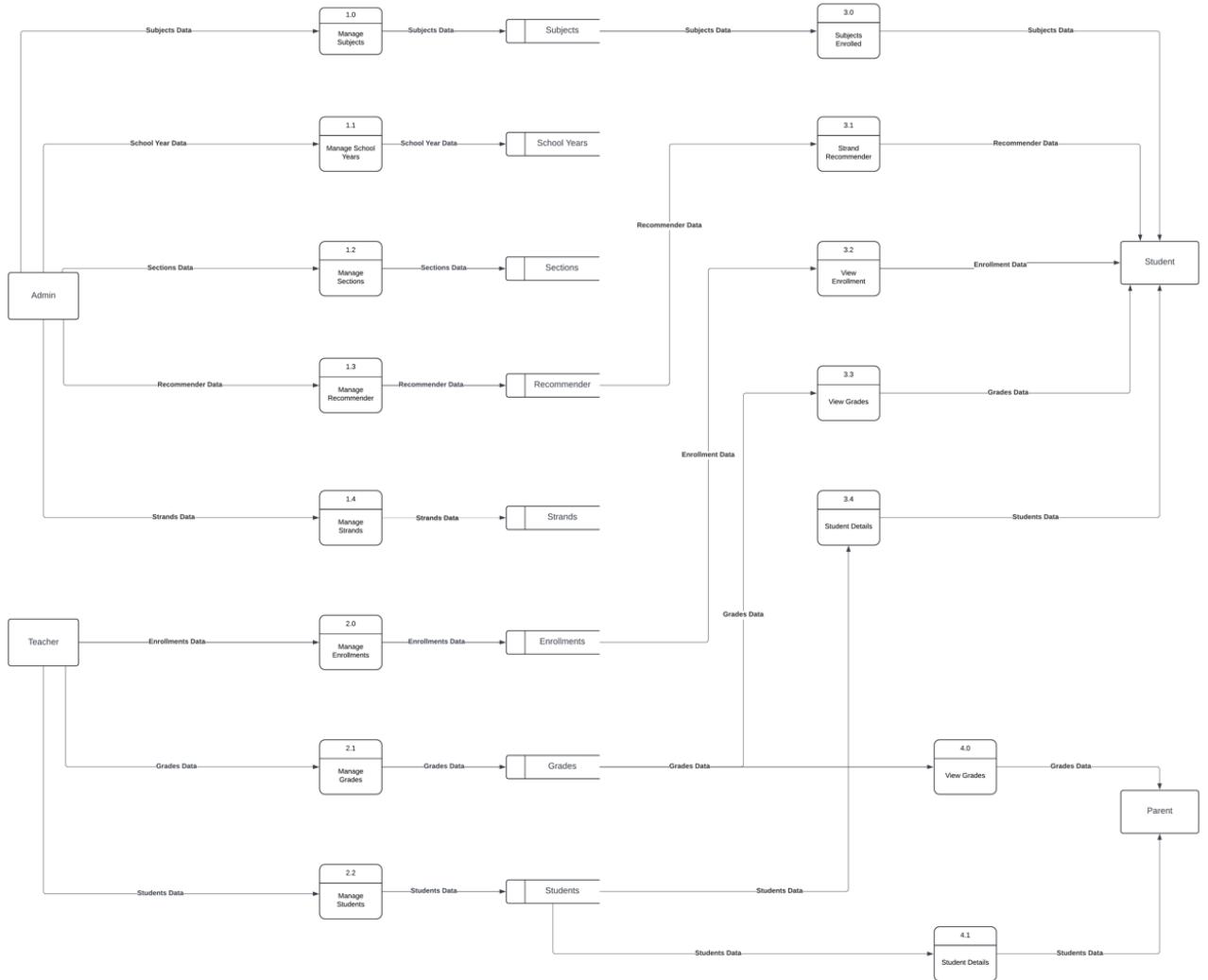
**Context Diagram.** A Context Diagram illustrates how a system interacts with external entities, defining its boundaries and showing interactions with users, other systems, and data sources. It clarifies the system's scope and integration within its environment, aiding in effective design and development.



**Figure 3-4.** Context Diagram

Figure 3-3 shows an integrated system connecting Teachers, Students, Admins, and Parents. Teachers enter grades, manage subjects, and handle student enrollment. Students can view their profiles, grades, and subjects. Admins manage the overall system, including teachers, subjects, strands, and school years. Parents can access their child's profile, grades, and enrolled subjects.

## Data Flow Diagram



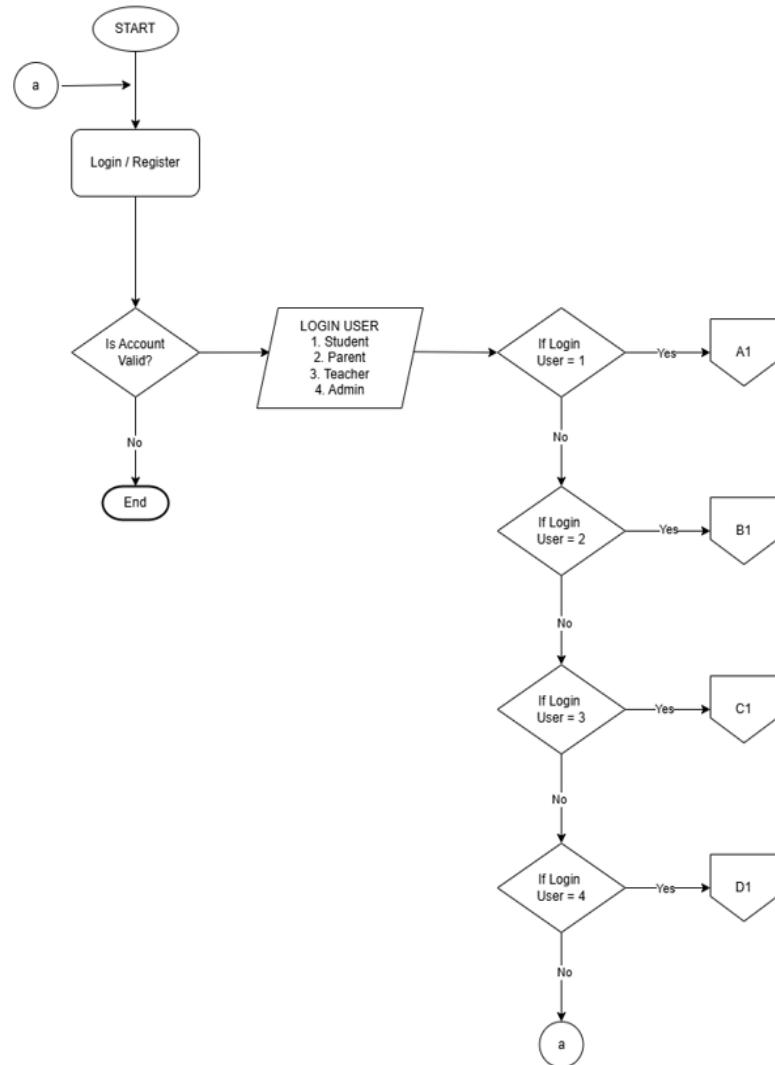
**Figure 3-5. Data Flow Diagram**

Figure 3-4 illustrates the interactions between various entities within a school system, focusing on subject management, student enrollments, grades, and a recommender system for strand selection. The admin manages core data such as subjects, school years, sections, strands, and the recommender system. This data flows into respective databases, which are then accessed by students and teachers. Teachers manage enrollments, grades, and student data, which are made available to both students and their parents. Students can view their enrolled subjects, grades,

enrollment details, and receive strand recommendations for grade 11 based on their performance.

Parents are also able to view their child's grades and student details.

**System Flowchart.** System flowcharts are the diagram type that shows you the flow of data and how decisions can affect the events surrounding it. Like other types of flowcharts, system flowcharts consist of start/end terminals, processes, and decisions, all connected by arrows showing the flow and how data moves in the flow.

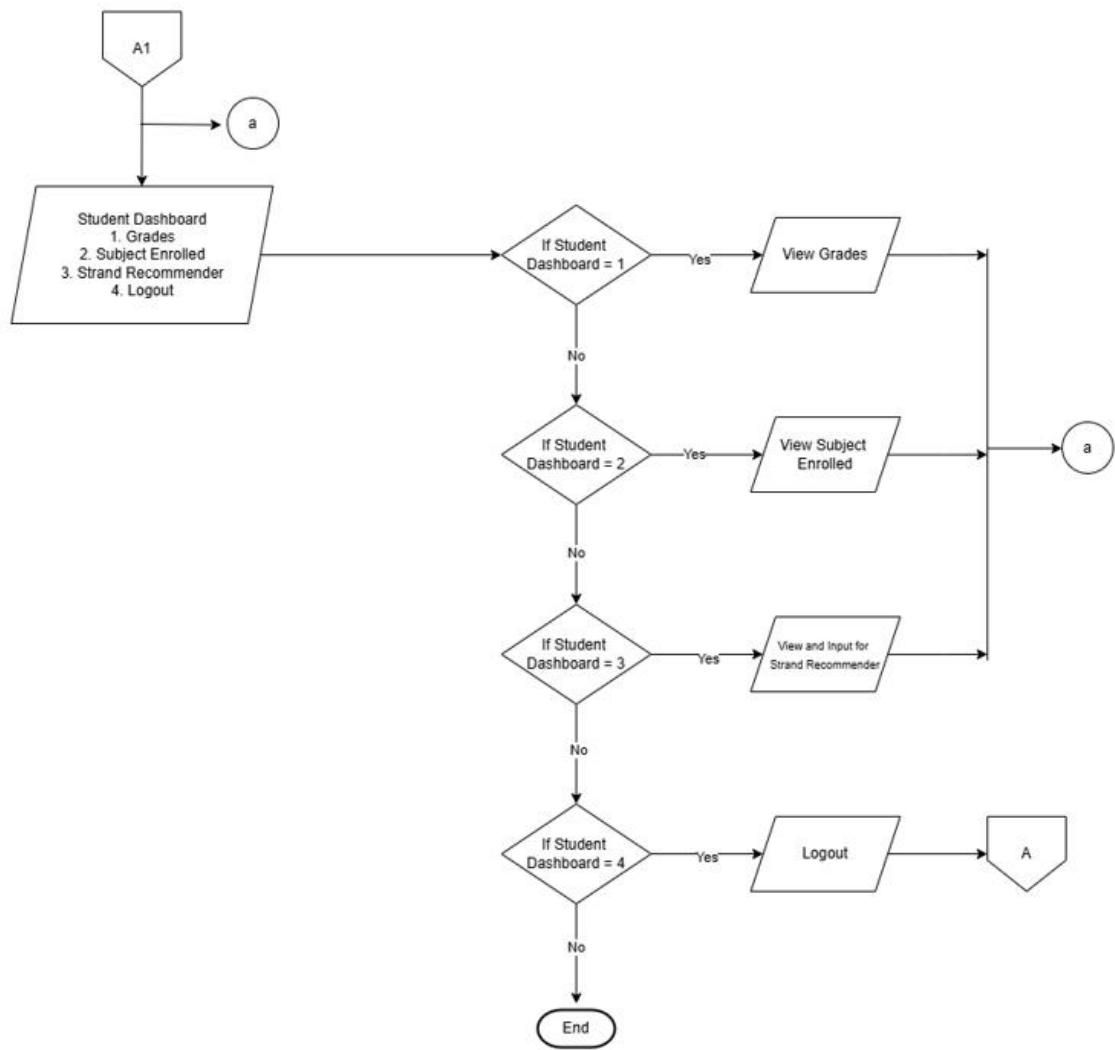


**Figure 3-6.** System Flowchart

Figure 3-5 shows a login process where users are identified as Admin, Teacher, or Student.

If the login is valid, users are directed to different sections based on their role: Admin, Teacher, or Student. Invalid logins lead to the end of the process.

**Program Flowchart.** A programming flowchart is a visualization tool programmers use when creating new applications to understand a process, workflow or algorithm. It typically uses geometric shapes to represent steps and arrows to communicate the flow of data.



**Figure 3-7.** Student Flowchart

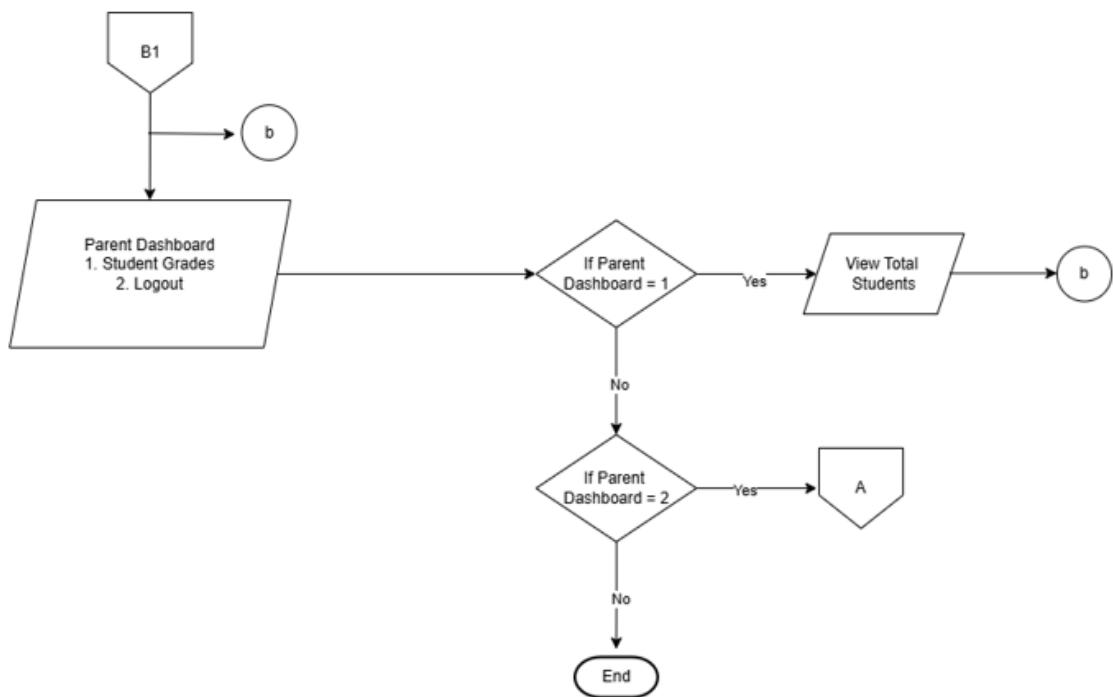
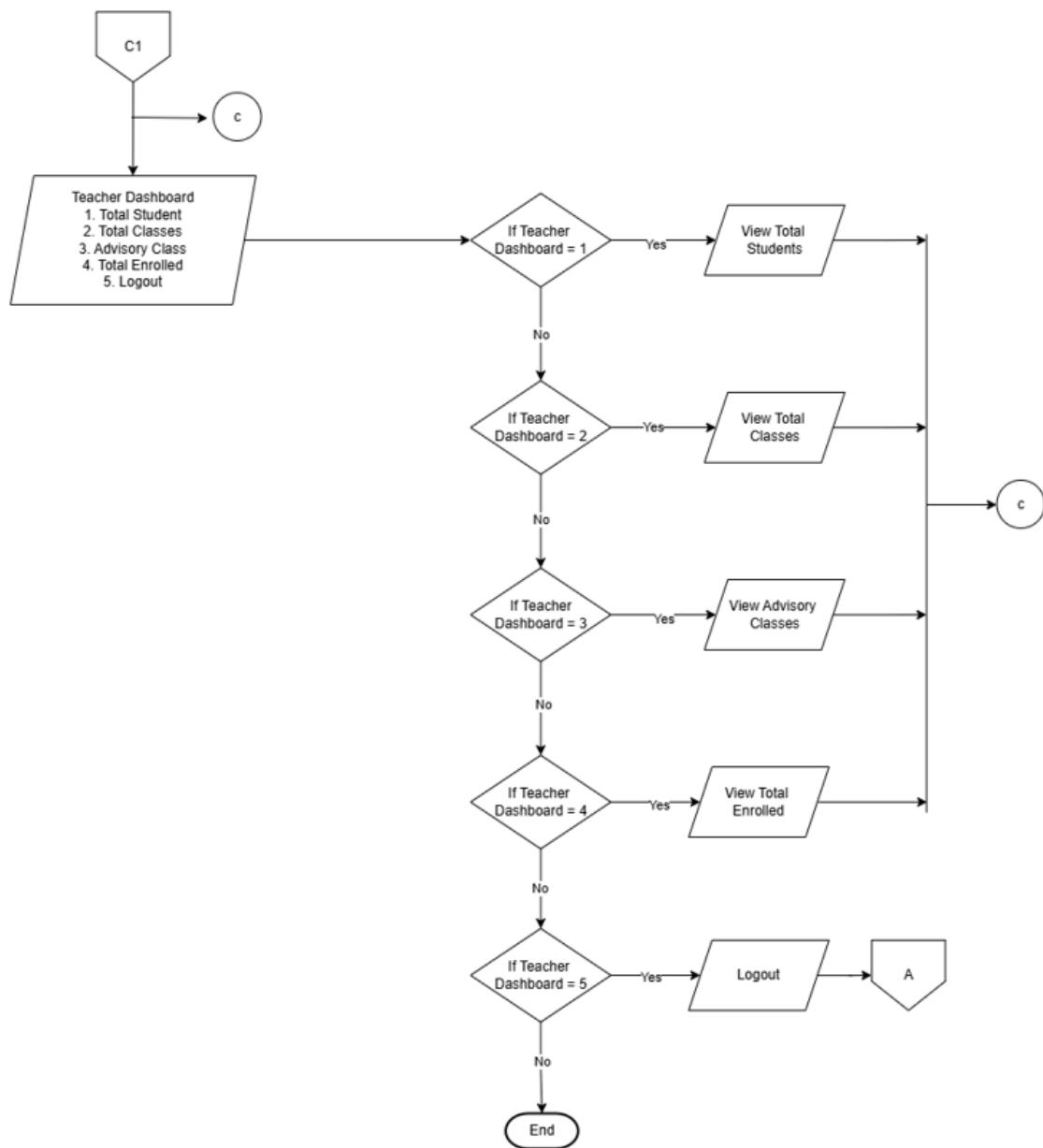


Figure 3-8. Parent Flowchart



**Figure 3-9.** Teacher Flowchart

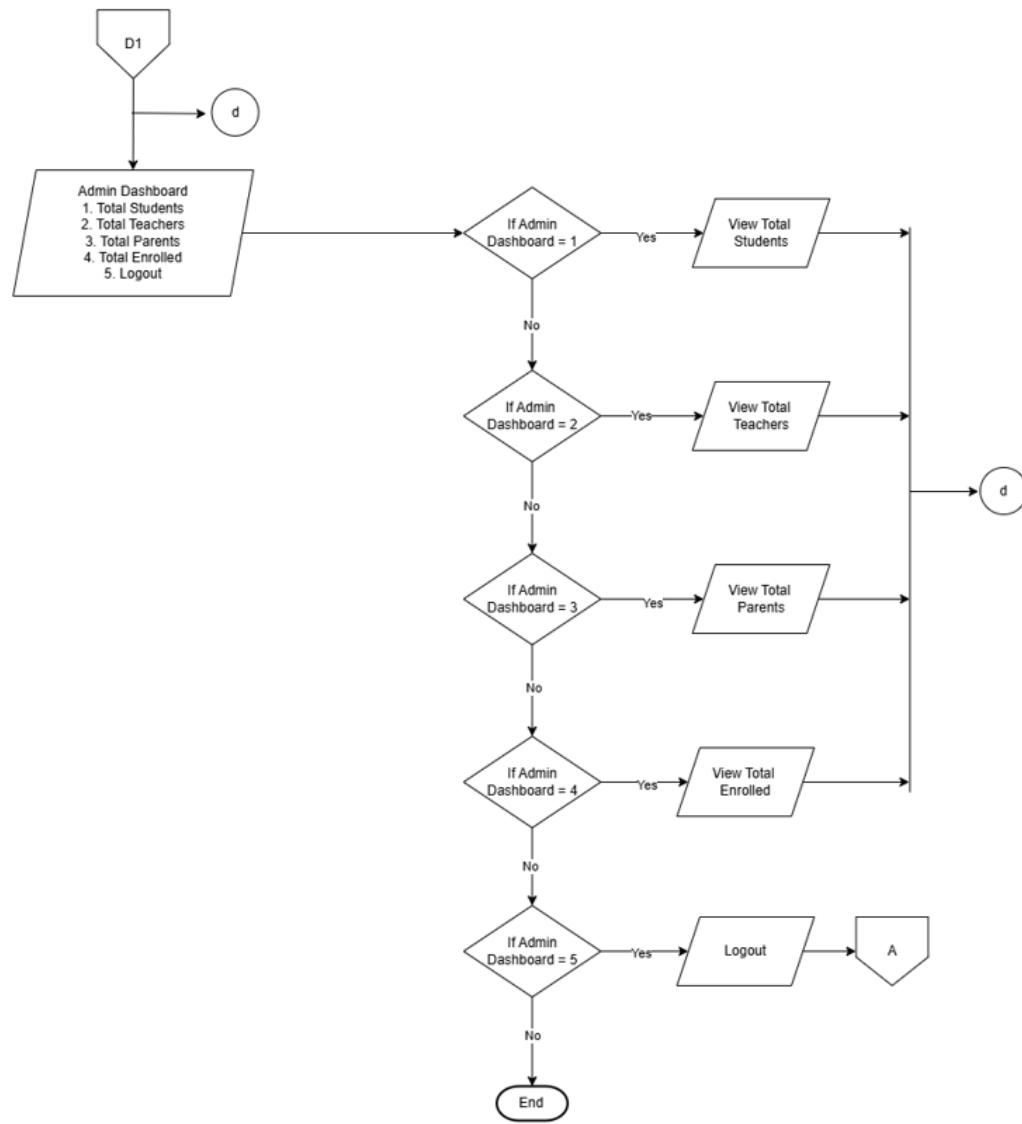


Figure 3-10. Admin Flowchart

**Database Schema.** is the structure of a database described in a formal language supported typically by a relational database management system. The term "schema" refers to the organization of data as a blueprint of how the database is constructed

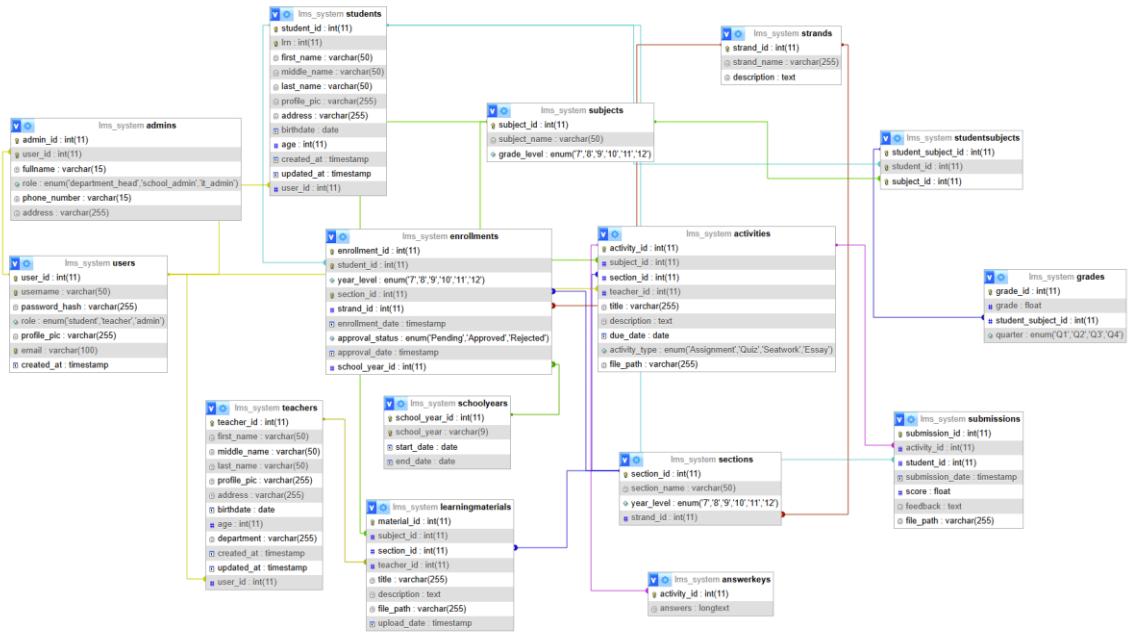
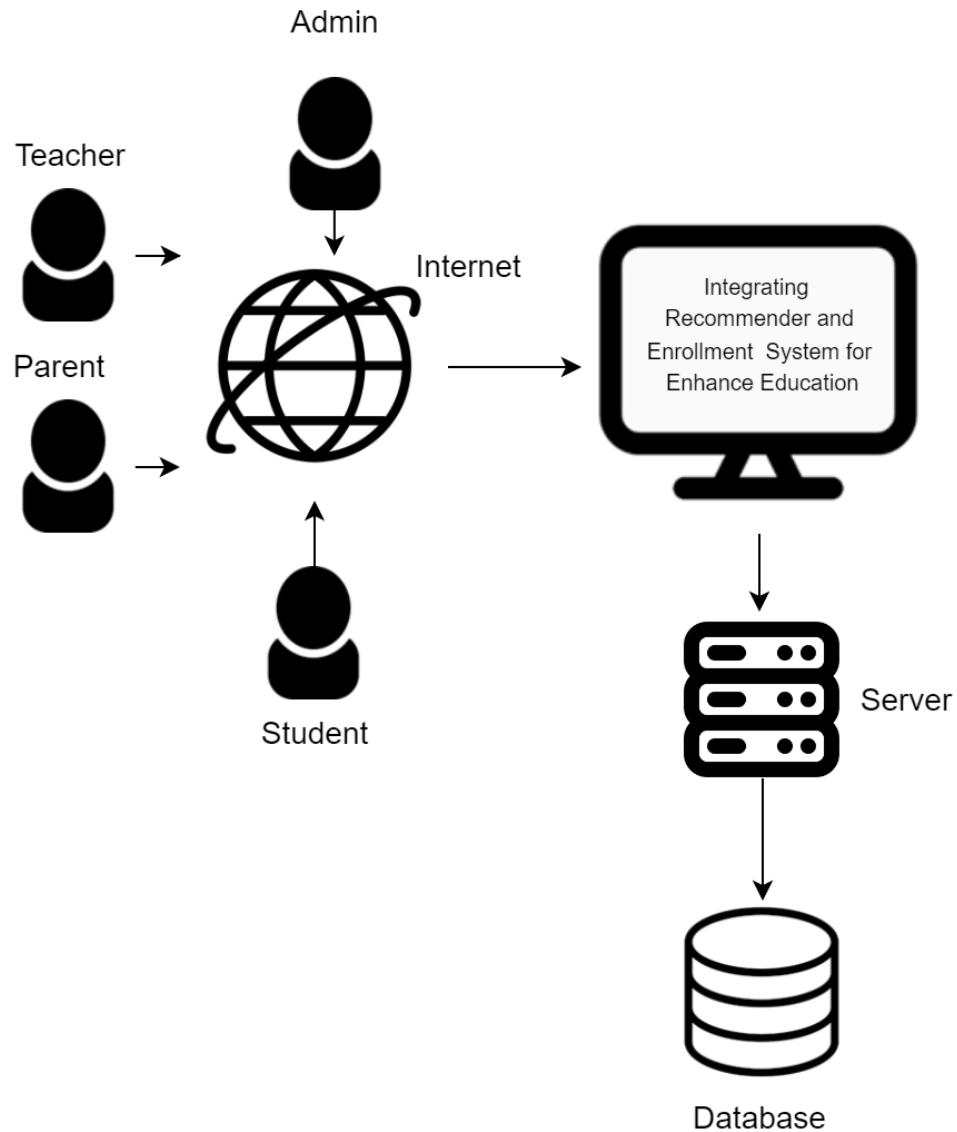


Figure 3-11. Database Schema

**System Architecture.** This system architecture includes various components and an expandable system that will work together to implement the entire system.



**Figure 3-12. System Architecture**

Figure 3-12 shows a platform where admins, teachers, and students use an integrated educational system for recommendations and enrollment. The platform, accessible via the internet, stores all data in a central back-end database, streamlining the educational process and enhancing the learning experience.

## Output and User-Interface Design



Figure 3-13. Homepage

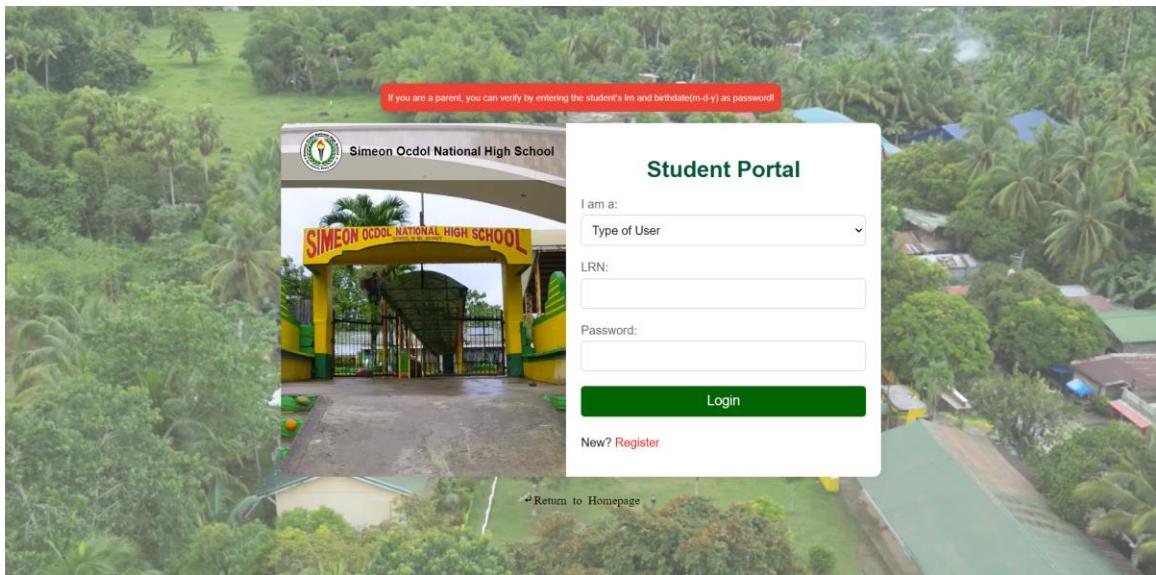


Figure 3-14. Student and Parent Login Page

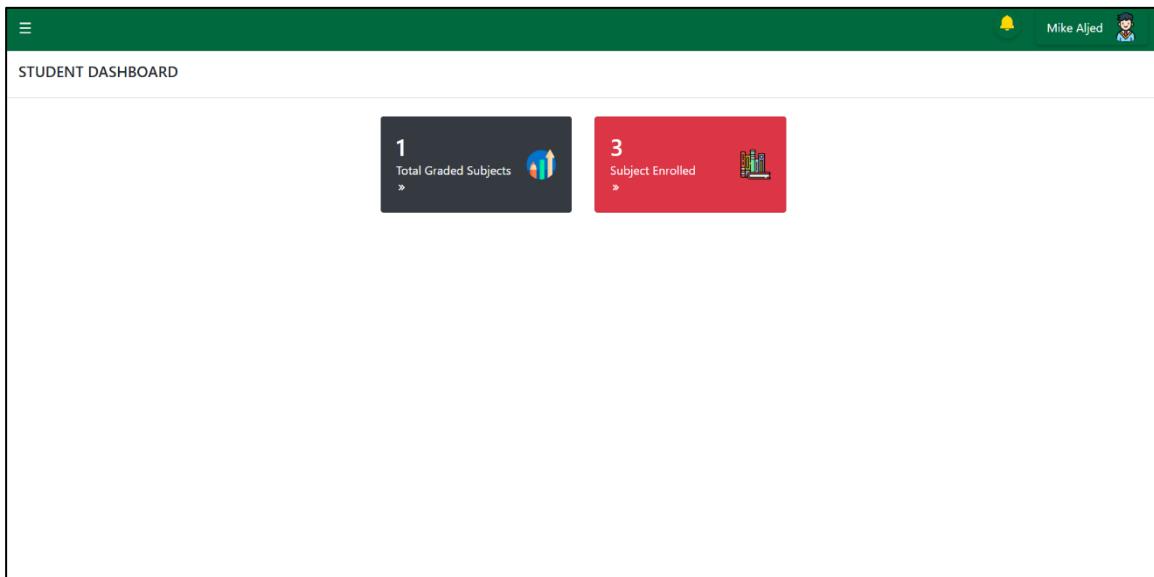


Figure 3-1. Student Dashboard Page

A screenshot of a student subject enrolled page. The header is identical to the dashboard, with a green bar, menu icon, notification bell, and user profile for "Mike Ajed". The title "SUBJECT ENROLLED" is shown. Below the title, there's a dropdown menu labeled "Select School Year" with the value "2024-2025". A table lists three subjects: Filipino, Math, and Science, all assigned to the section "Jade" at Year Level 7, with the teacher listed as "teacher sample".

Subject Name	Section	Year Level	Teacher
Filipino	Jade	7	teacher sample
Math	Jade	7	teacher sample
Science	Jade	7	teacher sample

Figure 3-16. Student Subject Enrolled Page

The screenshot shows a student's academic record. At the top, it says "GRADES - ENROLLED SUBJECTS". Below that, a dropdown menu shows "Select School Year" with "2024-2025" selected. A section titled "Quarterly" displays the following data:

Subject Name	Section	Year Level	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Final Rating	Remarks	Graded by
Filipino	Jade	7							
Math	Jade	7	78.00	81.00	83.00	76.00	79.50	Passed	sample teacher
Science	Jade	7							

At the bottom right of the table area, it says "Final Average:".

Figure 3-17. Student Grades Page

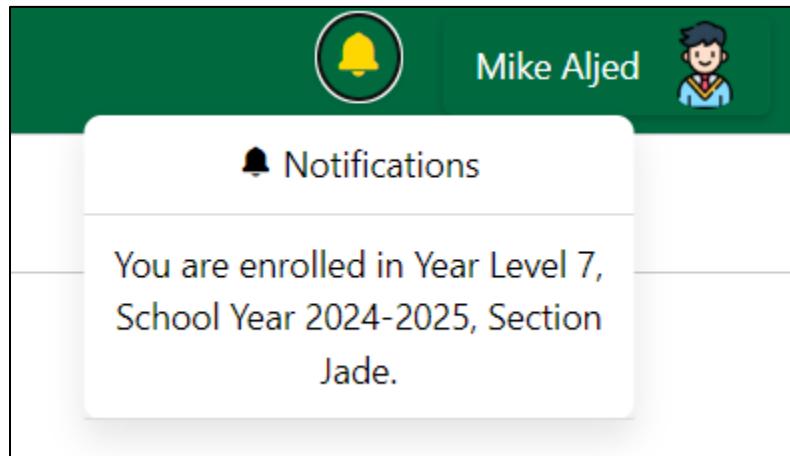


Figure 3-18. System Notification Page



[Details](#) [Parent/Guardian Info.](#)

Personal Info.

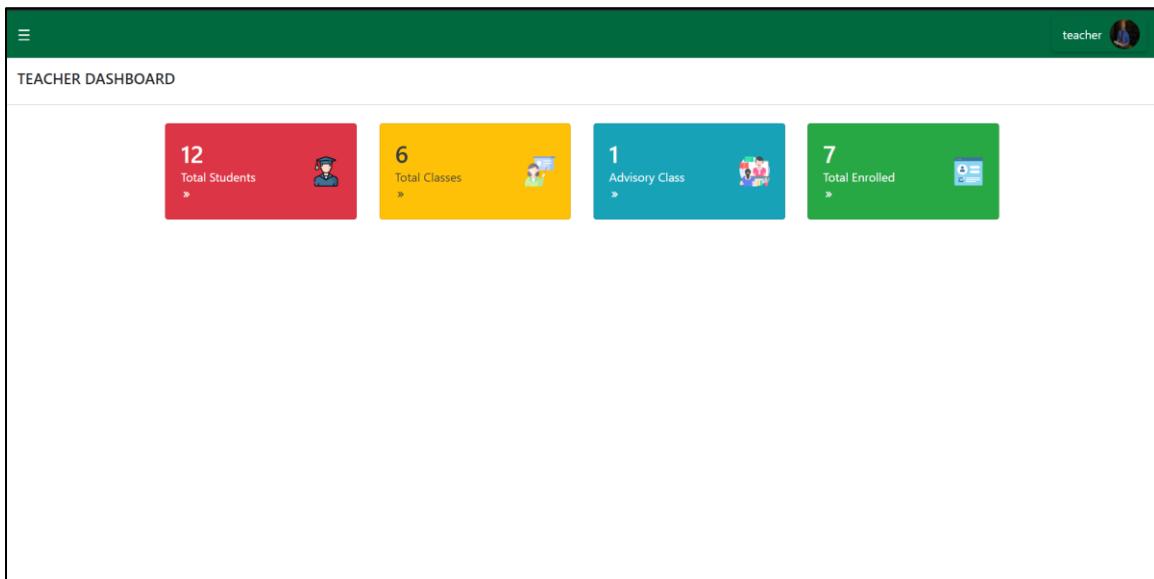
LRN  
123307160034

Last Name Abud	First Name Mike Aljed	Middle Name Inocando
Gender Male	Birthdate 2011-12-04	
Address Bacubac, Basey		

Account Details

Email student@gmail.com	New Password	Type Old Password	Confirm New Password
----------------------------	--------------	-------------------	----------------------

[Update](#)

**Figure 3-19.** Student Profile Info Page**Figure 3-20.** Teacher Dashboard Page

STUDENT LIST				
Actions LRN Last Name First Name Middle Name				
	112233445566	Co	Ronnell Andrei	Projas
	111111111111	Torgs	Kim	D.
	123351170036	Cahingcoy	Rodley	
	123456789123	Jordan	Kerwin	
	123307160034	Abud	Mike Aljed	Inocando
	107936160333	Amistoso	Liljan moris	Bacasno
	123328140001	Alcones	John Mark	Barras
	123351150014	Aguilina	Jean	Dela Cruz
	124227150006	Bacasno III	Winfredo	Batuto

**Figure 3-21.** Student List Page

CLASSES				
Select School Year:				
<input type="button" value="All Years"/>				
Subject	Section	Year Level	Semester	Type of Subject
Math	Jade	7		<a href="#">Check Students</a>
Science	Jade	7		<a href="#">Check Students</a>
Filipino	Jade	7		<a href="#">Check Students</a>
Math	Copernicus	10		<a href="#">Check Students</a>
Science	Copernicus	10		<a href="#">Check Students</a>
Filipino	Copernicus	10		<a href="#">Check Students</a>

**Figure 3-22.** Total Classes of Teacher Page

The screenshot shows a web page titled "ADVISORY CLASSES". At the top, there is a dropdown menu labeled "Select School Year" with "All Years" selected. Below this is a table with two columns: "Section" and "Year Level". A single row is present, showing "Jade" in the Section column and "7" in the Year Level column. To the right of the table, there is a blue link labeled "Check Students". The top right corner of the page has a "teacher" icon.

Section	Year Level
Jade	7

**Figure 3-23.** Advisory Class Page

The screenshot shows a web page titled "ADVISORY CLASS STUDENTS". It displays a table with six columns: "Forms", "LRN", "Last Name", "First Name", "Middle Name", and "View Grades". There are four rows of data:

Forms	LRN	Last Name	First Name	Middle Name	
<a href="#">download</a> <a href="#">print</a>	123307160034	Abud	Mike Aljed	Inocando	<a href="#">View Grades</a>
<a href="#">download</a> <a href="#">print</a>	107936160333	Amistoso	Liljan moris	Bacasno	<a href="#">View Grades</a>
<a href="#">download</a> <a href="#">print</a>	123351170036	Cahingcoy	Rodley		<a href="#">View Grades</a>
<a href="#">download</a> <a href="#">print</a>	112233445566	Co	Ronnell Andrei	Projas	<a href="#">View Grades</a>

**Figure 3-24.** Advisory Class Students Page

The screenshot shows a web page titled "STUDENT ENROLLED LIST". It includes a dropdown menu for "School Year" set to "All Years". Below this is a list of sections, each preceded by a dropdown arrow:

- Year Level: 7 (Section: Jade)
- Year Level: 10 (Section: Alunsina)
- Year Level: 11 (Section: Copernicus)
- Year Level: 11 (Section: Laser)

**Figure 3-25.** Student Enrolled List Page

The screenshot shows a web-based application interface for managing student enrollment. At the top, there's a dark green header bar with a menu icon on the left and a user icon labeled "teacher" on the right. Below the header, the title "STUDENT ENROLLED LIST" is displayed. A dropdown menu for "School Year" is set to "All Years". Two filter boxes are present: one for "Year Level" set to "7" and another for "Section" set to "Jade". Below these filters, a horizontal bar indicates the gender distribution: "Females (1)" in pink and "Males (3)" in blue. The main content area is a table with columns: "LRN", "Last Name", "First Name", and "Middle Name". The data rows are:

LRN	Last Name	First Name	Middle Name
123307160034	Abud	Mike Aljed	Inocando
107936160333	Amistoso	Liljan moris	Bacasno
123351170036	Cahingcoy	Rodley	
112233445566	Co	Ronnell Andrei	Projas

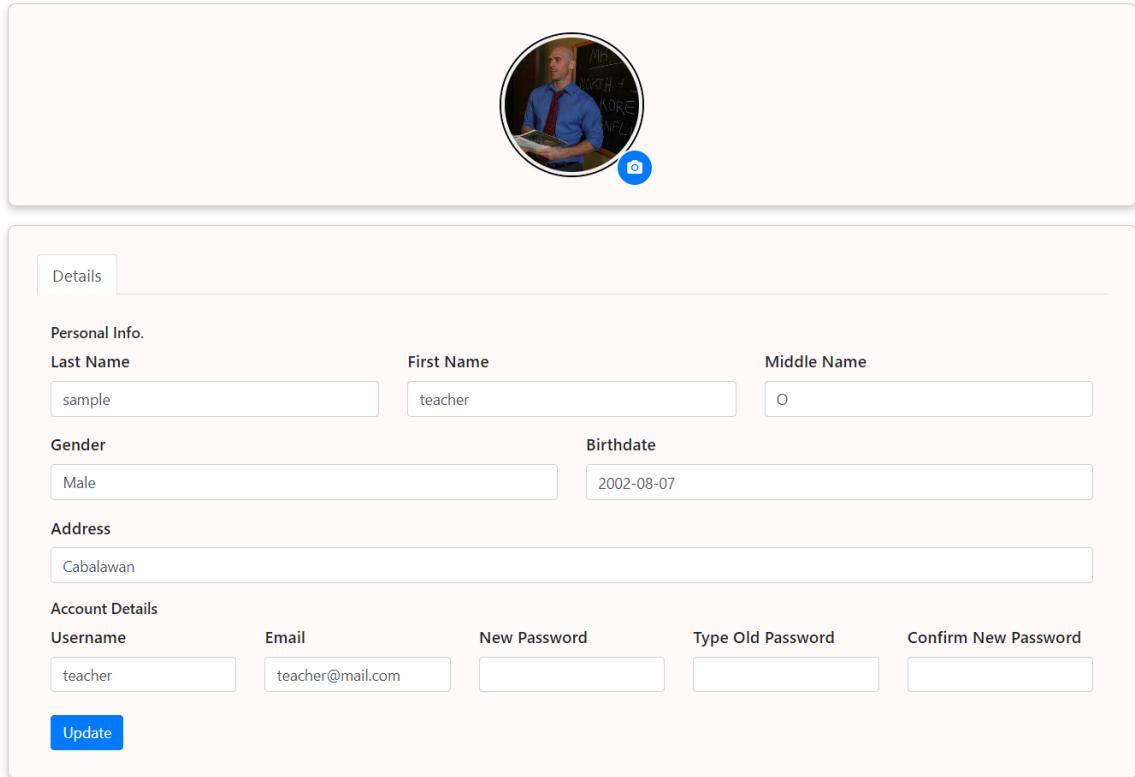
**Figure 3-25.1.** Student Enrolled List Page

This screenshot shows the "Input Student Grades" page. The header is identical to Figure 3-25.1, featuring a dark green bar with a menu icon, user icon, and "teacher" label. The title "STUDENT ENROLLED SUBJECT" is visible. A green banner at the top displays the message "Quarterly grades saved successfully!". Below this, a dropdown menu is set to "Number of Students per Grade Range per Quarter". The main content is a table with columns: "LRN", "Last Name", "First Name", "Middle Name", "Year Level", "Input Grades", and "Final Rating". A single row of data is shown for student ID 112233445566, with first name "Co", middle name "Projas", year level "7", and input grades 90.00, 98.00, 78.00, and 90.00. A "Save" button with a checkmark and a "89" rating are also present.

**Figure 3-26.** Input Student Grades Page

<b>Number of Students per Grade Range per Quarter:</b>	
<b>Quarter1</b>	<ul style="list-style-type: none"><li>• (90-100) Outstanding: 1</li><li>• (85-89) Very Satisfactory: 1</li><li>• (80-84) Satisfactory: 0</li><li>• (75-79) Fairly Satisfactory: 2</li><li>• (Below 75) Did Not Meet Expectations: 0</li></ul>
<b>Quarter2</b>	<ul style="list-style-type: none"><li>• (90-100) Outstanding: 2</li><li>• (85-89) Very Satisfactory: 1</li><li>• (80-84) Satisfactory: 1</li><li>• (75-79) Fairly Satisfactory: 0</li><li>• (Below 75) Did Not Meet Expectations: 0</li></ul>
<b>Quarter3</b>	<ul style="list-style-type: none"><li>• (90-100) Outstanding: 1</li><li>• (85-89) Very Satisfactory: 1</li><li>• (80-84) Satisfactory: 2</li><li>• (75-79) Fairly Satisfactory: 0</li><li>• (Below 75) Did Not Meet Expectations: 0</li></ul>

**Figure 3-27.** Grade Range Per Quarter Page



The screenshot shows a teacher profile page. At the top is a circular profile picture of a man in a blue shirt and red tie, holding a tablet. Below the picture is a blue camera icon. The page has a header 'Details' and sections for 'Personal Info.', 'Address', and 'Account Details'. Under 'Personal Info.', there are fields for Last Name ('sample'), First Name ('teacher'), Middle Name ('O'), Gender ('Male'), Birthdate ('2002-08-07'), and Address ('Cabalawan'). Under 'Account Details', there are fields for Username ('teacher'), Email ('teacher@mail.com'), New Password, Type Old Password, and Confirm New Password. A blue 'Update' button is at the bottom.

Last Name	First Name	Middle Name
sample	teacher	O

Gender	Birthdate
Male	2002-08-07

Address				
Cabalawan				

Username	Email	New Password	Type Old Password	Confirm New Password
teacher	teacher@mail.com			

**Update**

Figure 3-28. Teacher Profile Info Page

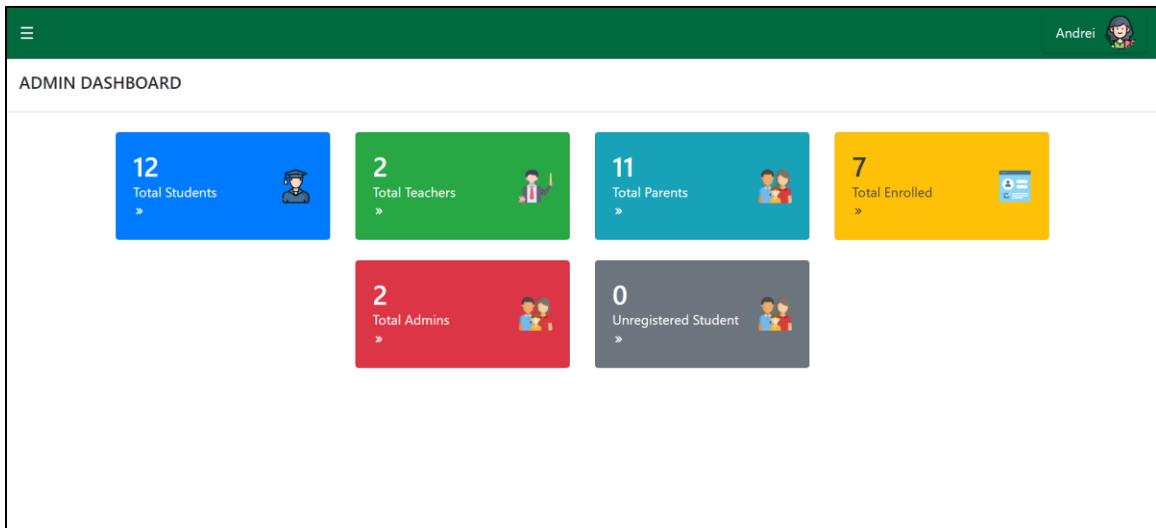
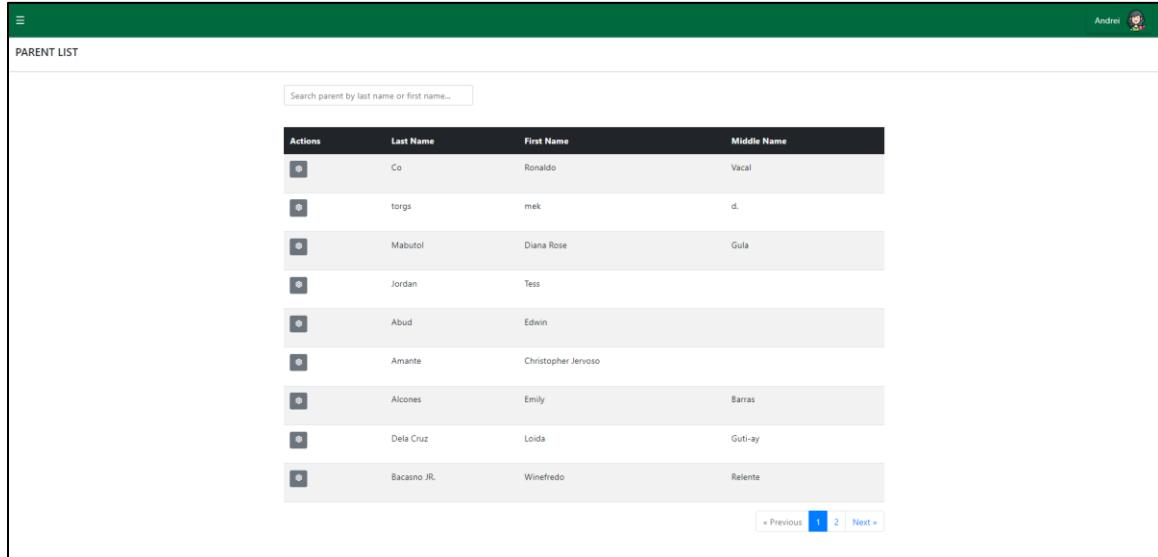


Figure 3-29. Admin Dashboard



PARENT LIST

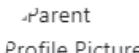
Search parent by last name or first name...

Actions	Last Name	First Name	Middle Name
	Co	Ronaldo	Vacal
	torgs	mek	d.
	Mabutol	Diana Rose	Gula
	Jordan	Tess	
	Abud	Edwin	
	Amante	Christopher Jervoso	
	Alcones	Emily	Barras
	Dela Cruz	Loida	Guti-ay
	Bacasno JR.	Winfredo	Relente

« Previous 1 2 Next »

Figure 3-30. Parent List Page

Parent and Student Information X

 Parent Profile Picture **Ronaldo Vacal Co**

**Gender:** Male  
**Phone Number:** 09952924845

**Associated Student**

**LRN:** 112233445566

**Name:** Ronnell Andrei Projas Co

**Gender:** Male

**Address:** San Antonio, Basey Samar

**Birthdate:** 2002-08-23

**LRN:** 556677889900

**Name:** Rita Projas Co

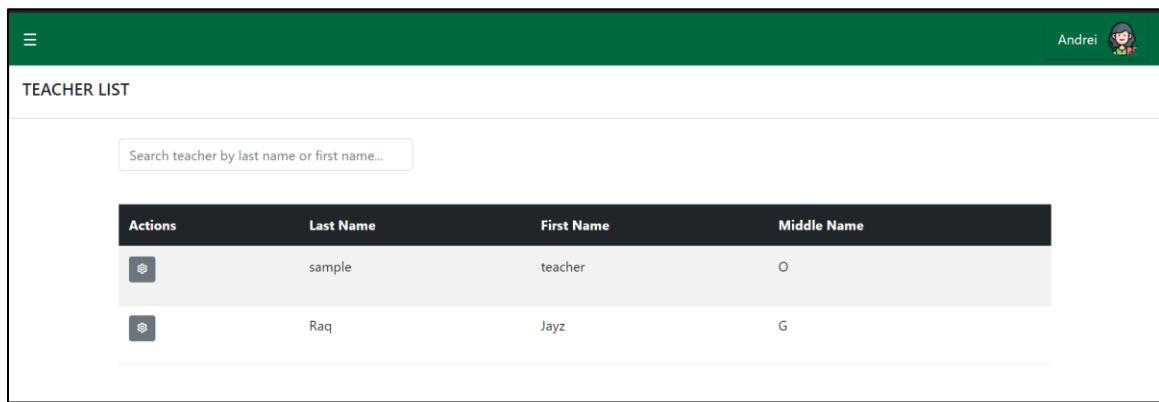
**Gender:** Female

**Address:** Brgy 103 Suhi

**Birthdate:** 2010-11-21

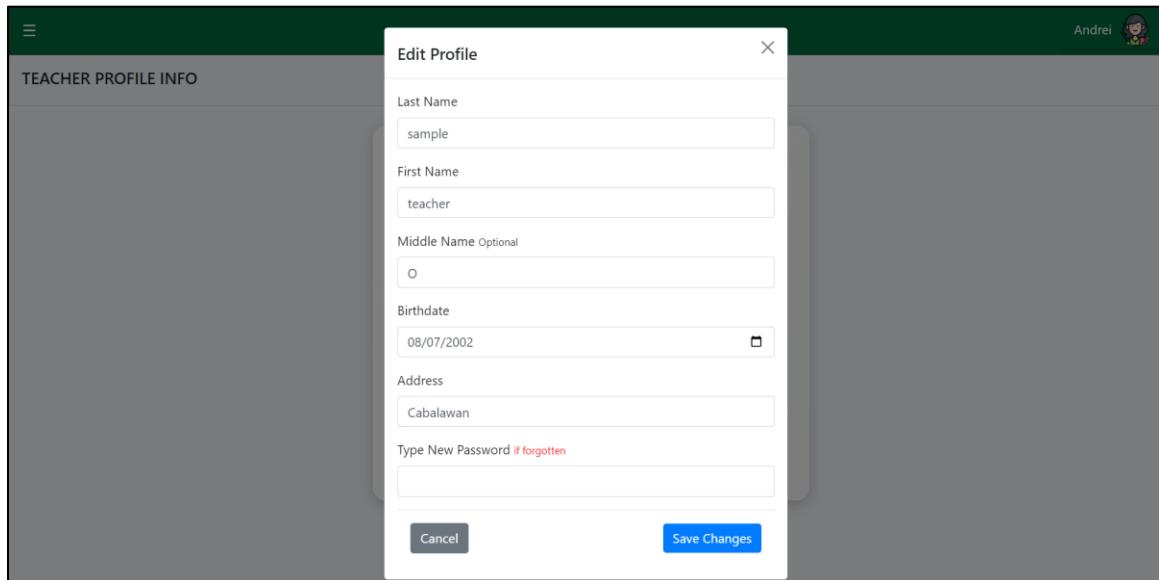
Close

Figure 3-31. Parent and Student Information Page



Actions	Last Name	First Name	Middle Name
	sample	teacher	O
	Raq	Jayz	G

Figure 3-32. Teacher List Page



TEACHER PROFILE INFO

Edit Profile

Last Name  
sample

First Name  
teacher

Middle Name Optional  
O

Birthdate  
08/07/2002

Address  
Cabalawan

Type New Password if forgotten

Cancel Save Changes

Figure 3-33. Edit Teacher Information Page

**ASSIGN SUBJECT**

**teacher sample**

**Gender:** Male

**Address:** Cabalawan

**Email:** teacher@mail.com

**Assign Subjects to Teacher**

Section:

School Year:

Available Subjects:

**Add Subject**

Subject Name	Year Level	Type of Subject	Actions

**Assign Subjects** **Back to Teacher List** **View Assigned Subjects**

**Figure 3-34.** Assign Subject Page

**Assigned Subjects**

Select School Year:

Year Level	Subject Name	Section	Semester	Type of Subject	Action
7	Math	Jade			<b>Update</b> <b>Remove</b>
7	Science	Jade			<b>Update</b> <b>Remove</b>
7	Filipino	Jade			<b>Update</b> <b>Remove</b>
10	Math	Copernicus			<b>Update</b> <b>Remove</b>
10	Science	Copernicus			<b>Update</b> <b>Remove</b>
10	Filipino	Copernicus			<b>Update</b> <b>Remove</b>

**Back** **Back to Teacher List**

**Figure 3-35.** Assigned Subject Page

**ASSIGN ADVISORY**



teacher sample

Gender: Male

Address: Cabalawan

Email: teacher@mail.com

**Assign Advisory Role to Teacher**

Section: Jade | Grade: 7

School Year: 2024-2025

**Assign Advisory Role** **Back to Teacher List** **View Assigned Advisory**

**Figure 3-36.** Assign Advisory Page

**ASSIGNED ADVISORY CLASSES**



teacher sample

Gender: Male

Address: Cabalawan

Email: teacher@mail.com

**Assigned Advisory Classes**

Select School Year: All Years

Section Name	Year Level	Action
Jade	7	<b>Update</b> <b>Remove</b>

**Back to Teacher List**

**Figure 3-37.** Assigned Advisory Classes Page

**MANAGE SUBJECTS**

**Create Subject**

**Actions**

Subject Name	Grade Level	Type	Strand	Semester	Actions
Math	7				<b>Edit</b> <b>Delete</b>
Science	7				<b>Edit</b> <b>Delete</b>
Filipino	7				<b>Edit</b> <b>Delete</b>
Math	8				<b>Edit</b> <b>Delete</b>
Science	8				<b>Edit</b> <b>Delete</b>
Filipino	8				<b>Edit</b> <b>Delete</b>
Math	9				<b>Edit</b> <b>Delete</b>
Science	9				<b>Edit</b> <b>Delete</b>
Filipino	9				<b>Edit</b> <b>Delete</b>
Math	10				<b>Edit</b> <b>Delete</b>
Science	10				<b>Edit</b> <b>Delete</b>
Filipino	10				<b>Edit</b> <b>Delete</b>

**Figure 3-38.** Manage Subject Page

MANAGE SECTIONS

Section Name: Year Level: Strand: (optional)

Section Name	Year Level	Strand	Actions
Garnet	7		Edit Delete
Jade	7		Edit Delete
Hambrawon	8		Edit Delete
Mahogany	8		Edit Delete
Aqua	9		Edit Delete
Deuterium	9		Edit Delete
Alunsina	10		Edit Delete
Copernicus	10		Edit Delete
Addition	11	ABM	Edit Delete
Java	11	ICT	Edit Delete
Laser	11	HUMSS	Edit Delete

Figure 3-39. Manage Sections Page

MANAGE STRANDS

Strand Name: Description:

Strand Name	Description	Actions
HUMSS	Humanities of Social Sciences	Edit Delete
STEM	Science Technology Mathematics	Edit Delete
ABM	Accountancy Business Management	Edit Delete
ICT	Information Communication Technology	Edit Delete
TVL	Technical Vocational Livelihood	Edit Delete

Figure 3-40. Manage Strands Page

MANAGE SCHOOL YEAR

School Year	Start Date	End Date	Actions
2024-2025	2024-08-15	2025-08-15	<button>Edit</button> <button>Delete</button>
2025-2026	2025-08-20	2026-08-20	<button>Edit</button> <button>Delete</button>

Figure 3-41. Manage School Year Page

MANAGE RECOMMENDER

Manage Specializations    Manage Skills    Manage Hobbies    Manage Strand Skills    Manage Strand Hobbies  
 Manage Strand Requirements    Manage Specialization Skills    Manage Specialization Hobbies

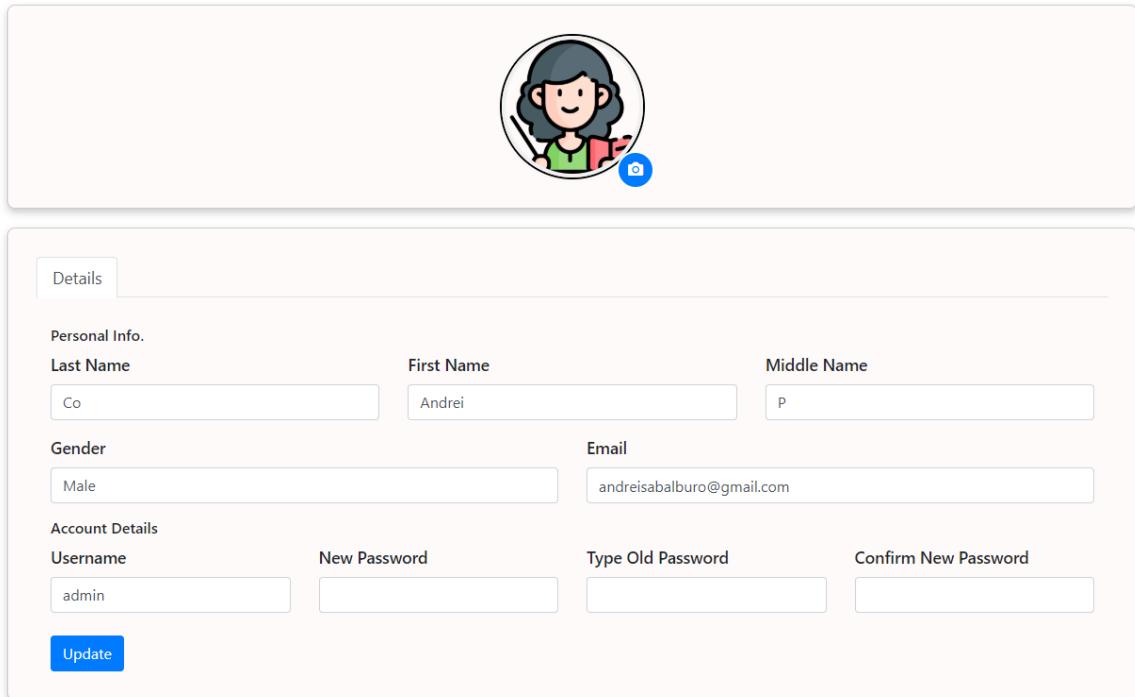
**Specializations**

Specialization Name	Strand	Action
Public Speaking	HUMSS	<button>Edit</button> <button>Delete</button>
Cookery	TVL	<button>Edit</button> <button>Delete</button>
Electrical Installation and Maintenance	ICT	<button>Edit</button> <button>Delete</button>
Consumer Electronics	ICT	<button>Edit</button> <button>Delete</button>

**Existing Specializations**

Specialization Name	Strand	Action
Public Speaking	HUMSS	<button>Edit</button> <button>Delete</button>
Cookery	TVL	<button>Edit</button> <button>Delete</button>
Electrical Installation and Maintenance	ICT	<button>Edit</button> <button>Delete</button>
Consumer Electronics	ICT	<button>Edit</button> <button>Delete</button>

Figure 3-42. Manage Strand Recommender Page



The screenshot shows the Admin Profile Page. At the top is a circular profile picture placeholder with a camera icon. Below it is a tab labeled "Details". The page contains two sections: "Personal Info." and "Account Details". In "Personal Info.", there are fields for Last Name (Co), First Name (Andrei), Middle Name (P), Gender (Male), and Email (andreisabalburo@gmail.com). In "Account Details", there are fields for Username (admin), New Password, Type Old Password, and Confirm New Password. A blue "Update" button is located at the bottom left.

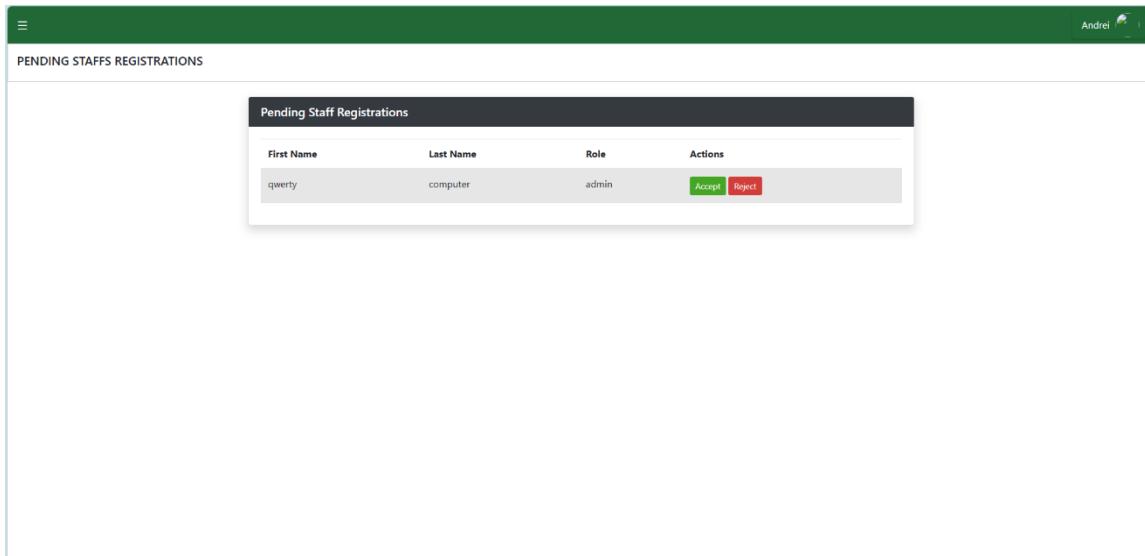
Last Name	First Name	Middle Name
Co	Andrei	P

Gender	Email
Male	andreisabalburo@gmail.com

Username	New Password	Type Old Password	Confirm New Password
admin			

**Update**

Figure 3-43. Admin Profile Page



The screenshot shows the Pending Staff Registrations page. The header has a dark green bar with the text "PENDING STAFFS REGISTRATIONS". Below it is a table titled "Pending Staff Registrations" with columns: First Name, Last Name, Role, and Actions. There is one entry: First Name - qwerty, Last Name - computer, Role - admin. The Actions column contains "Accept" and "Reject" buttons.

First Name	Last Name	Role	Actions
qwerty	computer	admin	<b>Accept</b> <b>Reject</b>

Figure 3-44. Pending Staff Registrations

ACTIVITY LOGS					
Created at	User ID	Role	Action	Details	IP Address
2025-02-11 02:53:04	2021-08674	Teacher	New Enrollment	Student: Angeline Alcones (LRN: 123328140013), enrolled in Year Level: 7, Section: Unassigned; Strand: ; School Year: 2024-2025, Enrolled by: Roswell Dane Gaquing	:1
2025-02-11 02:53:07	2021-08674	Teacher	New Enrollment	Student: Angeline Alcones (LRN: 123328140013), enrolled in Year Level: 8, Section: Unassigned; Strand: ; School Year: 2025-2026, Enrolled by: Roswell Dane Gaquing	:1
2025-02-11 02:53:11	2021-08674	Teacher	New Enrollment	Student: Angeline Alcones (LRN: 123328140013), enrolled in Year Level: 9, Section: Unassigned; Strand: ; School Year: 2026-2027, Enrolled by: Roswell Dane Gaquing	:1
2025-02-11 02:53:19	2021-08674	Teacher	New Enrollment	Student: Angeline Alcones (LRN: 123328140013), enrolled in Year Level: 10, Section: Unassigned; Strand: ; School Year: 2027-2028, Enrolled by: Roswell Dane Gaquing	:1
2025-02-11 02:55:57	2021-08674	Teacher	Assign Retake Subject	Student: 123456789123, Is Retaking a Math 7 in 2024-2025. Jade Assigned by Roswell Dane Gaquing	:1
2025-02-11 02:56:15	2021-08674	Teacher	Update Retake Subject	Student: Kerwin Jordan (LRN: 123456789123), Retake Subject Updated to: Math, Updated by: Roswell Dane Gaquing	:1
2025-02-11 02:57:18	2021-08674	Teacher	Update Enrolled Subject	Student: Angeline Alcones (LRN: 123328140013), Enrolled Subject Updated to: Math, Updated by: Roswell Dane Gaquing	:1
2025-02-16 22:01:04	2021-08674	Teacher	Remove Retake Subject	Student: Kerwin Jordan (LRN: 123456789123), Removed Retake Subject: Math, Removed by: Roswell Dane Gaquing	:1
2025-02-16 22:28:42	2021-08674	Teacher	Remove Subject	Student: Angeline Alcones (LRN: 123328140013), Removed Enrolled Subject: Math, Removed by: Roswell Dane Gaquing	:1
2025-02-16 22:31:36	2021-08674	Teacher	Assign Retake Subject	Student: 123456789123, Is Retaking a Math 7 in 2024-2025. Jade Assigned by Roswell Dane Gaquing	:1
2025-02-17 17:42:53	2021-08674	Teacher	Assign Retake Subject	Student: 123456789123, Is Retaking Filipino 7 in 2024-2025. Jade Assigned by Roswell Dane Gaquing	:1
2025-02-17 17:43:31	2021-08674	Teacher	Remove Retake Subject	Student: Kerwin Jordan (LRN: 123456789123), Removed Retake Subject: Filipino, Removed by: Roswell Dane Gaquing	:1
2025-02-17 17:43:33	2021-08674	Teacher	Remove Retake Subject	Student: Kerwin Jordan (LRN: 123456789123), Removed Retake Subject: Math, Removed by: Roswell Dane Gaquing	:1
2025-02-17 17:43:49	2021-08674	Teacher	Assign Retake Subject	Student: 123456789123, Is Retaking Math 7 in 2024-2025. Garnet Assigned by Roswell Dane Gaquing	:1
2025-02-17 17:47:13	2021-08674	Teacher	Assign Retake Subject	Student: Kerwin Jordan (LRN: 123456789123), Is Retaking Science 7 in 2024-2025. Garnet Assigned by Roswell Dane Gaquing	:1
2025-02-23 19:11:02	1	Admin	Assign Subject	Assigned subject ID 18 to teacher ID 4 for section 31 in school year 3	:1

Figure 3-45. Activity Logs

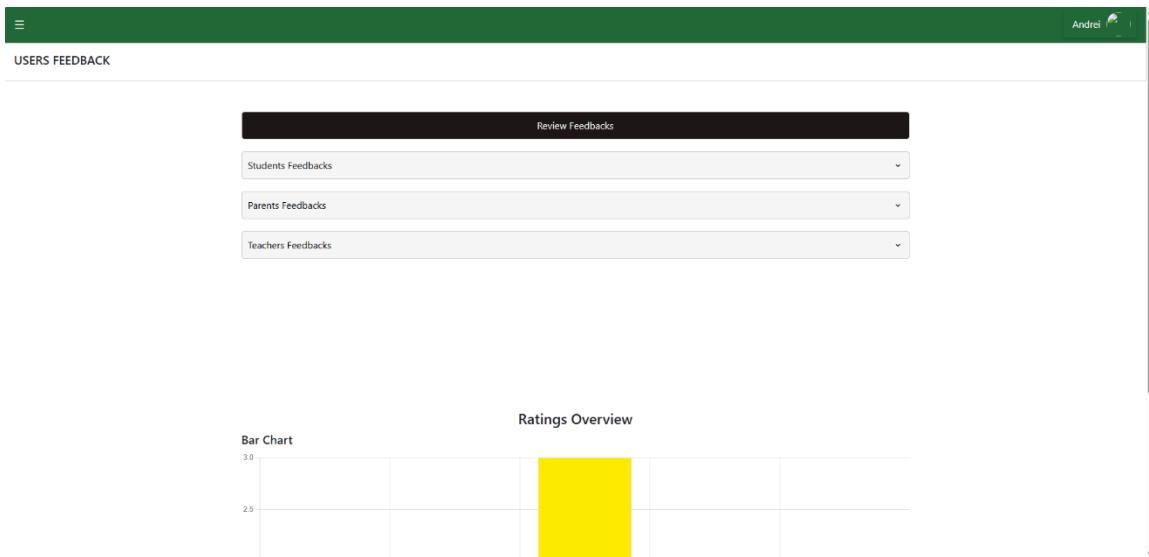


Figure 3-46. User Feedback



**Figure 3-47.** Ratings Overview

**Learner Permanent Record for Junior High School (SF10-JHS)**  
(Formerly Form 137)

**LEARNER'S INFORMATION**

Last Name: Co	First Name: Ronnell Andrei	Middle Name: Prisca
Learner Reference Number(LRN): 112233445566		Birthday: 2002-06-23
Sex: Male		

**ELIGIBILITY FOR JHS ENROLLMENT**

<input type="checkbox"/> Elementary School Completer	General Average: _____	Citation: _____
Name of Elementary School: _____	School ID: _____	Address of School: _____
Other Credential Presented:		Others (Please Specify): _____
<input type="checkbox"/> PEPT Passer Rating: _____	<input type="checkbox"/> ALS A&E Passer Rating: _____	Others (Please Specify): _____
Date of Examination/Assessment (mm/dd/yyyy): _____		Name of Testing Center: _____

**SCHOLASTIC RECORDS**

School: Simeon Ordoñez School ID: _____	District: _____	Division: _____	Region: I				
Classified as Grade: _____		School Year: 2024-2025	Section: Jada				
Signature: _____							
<b>Learning Areas</b>	<b>Quarter</b>			<b>Final Grade</b>	<b>Remarks</b>		
	1	2	3				
	Filipino					0.00	Failed
	Math					0.00	Failed
	Science					0.00	Failed
General Average			0.00				
<b>Remedial Classes</b>		Conducted from (mm/dd/yyyy): _____ to (mm/dd/yyyy): _____					
Learning Areas		Final Rating	Remedial Class Mark	Recomputed Final Grade	Remarks		

**CERTIFICATION**

I CERTIFY that this is a true record of \_\_\_\_\_ with LRN \_\_\_\_\_ and that he/she is eligible for admission to Grade \_\_\_\_\_ Name of School: \_\_\_\_\_ School ID: \_\_\_\_\_ (Last School Year Attended: \_\_\_\_\_)

Date: \_\_\_\_\_ Name of Principal/School Head over Printed Name: \_\_\_\_\_ (Affix School Seal here)

**Figure 3-48.** Student's Form 137

Attendance Record												
	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
No. of School Days												
No. of Days Present												
No. of Times Absent												

PARENT/GUARDIAN'S SIGNATURE

1st Quarter \_\_\_\_\_  
 2nd Quarter \_\_\_\_\_  
 3rd Quarter \_\_\_\_\_  
 4th Quarter \_\_\_\_\_

Certificate of Transfer

Admitted to Grade: \_\_\_\_\_ Section: \_\_\_\_\_  
 Eligibility for Admission to Grade: \_\_\_\_\_  
 Approved: \_\_\_\_\_

Head Teacher/Principal \_\_\_\_\_ Teacher \_\_\_\_\_

Cancellation of Eligibility to Transfer

Admitted in: \_\_\_\_\_  
 Date \_\_\_\_\_ Principal \_\_\_\_\_

School Head \_\_\_\_\_ Teacher \_\_\_\_\_

Republic of the Philippines  
 Department of Education  
 Region VIII  
 Division of Samar  
 Simeon Odol National High School

SIMEON ODL NATIONAL HIGH SCHOOL

LEARNER'S PROGRESS REPORT CARD

Name: Co, Ronnell Andrei, Projas  
 LRN: 112233445566  
 Age: 22 Sex: Male  
 Grade: 7 Section: Jade  
 School Year: 2024-2025 Section: teacher sample

Dear Parent,  
 This report card shows the ability and progress your child has made in different learning areas, as well as their progress in core values.  
 The school welcomes you if you wish to know more about your child's progress.

**Figure 3-49. Student's Form 138**

## Implementation

### Programming Development

Programming development involved studying the system development process in this research. This section of the paper examined the environment in which the program operated.

### Programming Environment

The developer utilized a combination of technologies to create the front end and back end of the Integrated Recommender and Enrollment System.

### Front End

The developer used Bootstrap and CSS to design responsive and visually appealing web pages that adjusted smoothly to various devices. HTML5 was utilized for the

fundamental structure and presentation of web content, leveraging its advanced features for improved functionality. The combination of Bootstrap, CSS, and HTML5 resulted in a well-designed and user-friendly web application.

### **Back End**

The developer used MySQL and PHP to create the back end. MySQL, a free database system, helped manage and retrieve data, while PHP handled server-side tasks such as processing form submissions and interacting with the database. This setup made the back end efficient and capable of managing complex data and reports.

### **Testing**

The system underwent testing to evaluate its compliance with the specified requirements. This testing stage demonstrated the system's efficiency and functionality for users.

### **Test Plan**

To ensure the proposed system functioned effectively, the proponents tested it with actual users. The stakeholders in this study were the users who participated in the testing.

**Table 3-4.** Test Plan for Client

Steps	Description	Execute	Error	Remarks
Login	Test the login functionality for different user roles (admin, teacher, student and teachers).	✓		Login functionality for different roles (admin,

				teacher, student) works as expected.
Verify User	Verify that the system correctly authenticates users.	✓		User authentication is functioning correctly without any issues.
Manage Users	Test the admin's ability.	✓		Admin can manage user accounts successfully.
Manage System	Verify that users can manage the system properly.	✓		System Management features are working as intended.
Generate Grades	Ensure that Teachers can generate accurate and grades.	✓		Teachers can generate and submit grades accurately.

## Deployment

The deployment phase began with thorough preparation, during which the final version of the Integrated Recommender and Enrollment System was tested, reviewed, and packaged for installation on Simeon Ocdol National High School's servers. The installation process involved setting up the database, configuring the server environment, and ensuring all necessary dependencies were in place. Existing data, including student records and enrollment information, was migrated into the system. Training sessions were conducted for teachers, administrators, and selected students to familiarize them with the system's functionalities, ensuring a smooth transition. After successful installation and training, the system was officially launched, with initial support provided to address any immediate issues. Continuous monitoring and support followed the go-live phase to resolve unforeseen issues, perform updates, and ensure the system's effective operation.

## Evaluation

The system underwent a detailed evaluation based on the testing plan, which aimed to assess its overall quality and ensure compliance with the standards upheld by the proponents.

**Software Quality Assurance.** The software quality assurance process aimed to ensure that the system functioned as intended, focusing on reliability, security, and performance. The development team conducted rigorous testing throughout the development process, addressing any issues that arose. The team used ISO 25010 guidelines to help define what was needed for the project and ensure the software met high-quality standards.

**Table 3-5.** Likert Scale

Rating	Qualitative Description	Descriptive Interpretation
5	4.21 - 5.00	Highly Acceptable
4	3.41 – 4.20	Acceptable
3	2.61 – 3.40	Moderately Accepted
2	1.81 – 2.60	Disagree
1	1.00 – 1.80	Strongly Disagree

The ratings were used to compute the weighted average for each category. This report offers an in-depth analysis of how each category performed, emphasizing its strengths and pinpointing areas that need improvement based on the gathered feedback.

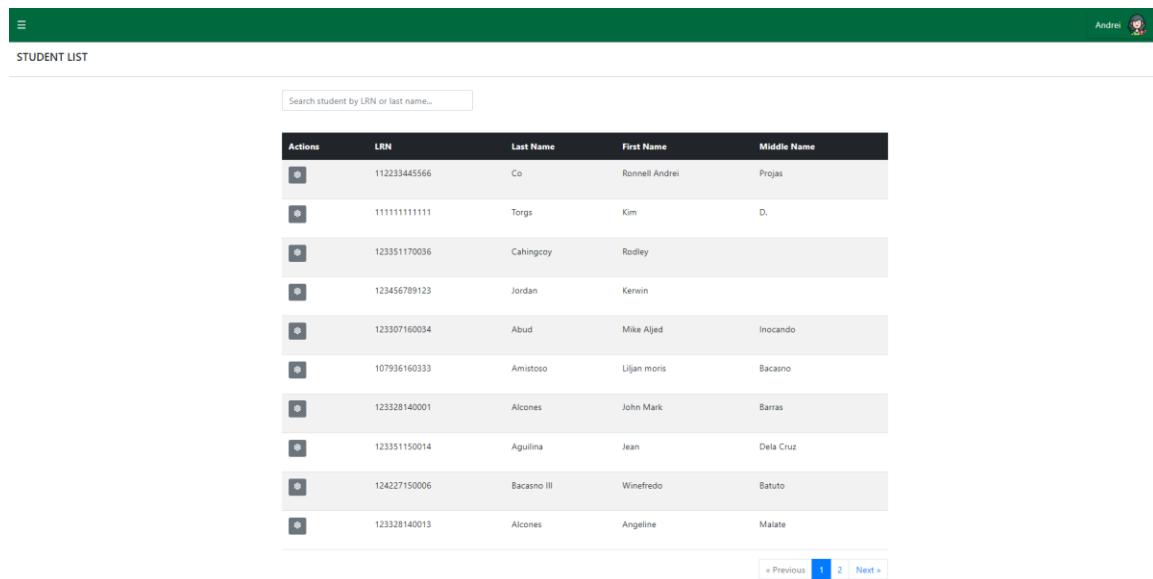
# Chapter IV

## RESULTS AND DISCUSSION

This chapter presents the results achieved in meeting the specific objectives of the study. It also discusses and interprets the findings based on the final processes applied. Additionally, it evaluates the system's functionality to ensure better usability by the end of the research study.

### Accessible Enrollment System with Automated Notifications

The enrollment system was designed to enhance accessibility for all users, providing seamless navigation and inclusive features. It also integrated real-time system notifications, keeping students informed of their enrollment status and ensuring a responsive enrollment experience.



Actions	LRN	Last Name	First Name	Middle Name
<a href="#">Edit</a>	112233445566	Co	Ronell Andrei	Projas
<a href="#">Edit</a>	111111111111	Torgs	Kim	D.
<a href="#">Edit</a>	123351170036	Cahingcoy	Rodley	
<a href="#">Edit</a>	123456789123	Jordan	Kerwin	
<a href="#">Edit</a>	123307160034	Abud	Mike Ajed	Inocando
<a href="#">Edit</a>	107936160033	Amistoso	Ulijan moris	Bacasno
<a href="#">Edit</a>	123328140001	Alicones	John Mark	Barras
<a href="#">Edit</a>	123351150014	Aguilina	Jean	Dela Cruz
<a href="#">Edit</a>	124227150006	Bacasno III	Winefredo	Batuto
<a href="#">Edit</a>	123328140013	Alicones	Angelina	Malate

**Figure 4-1.** Students List

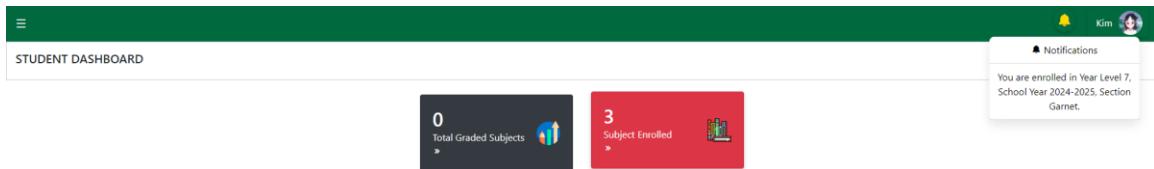
Figure 4-1 illustrates a table of students with their LRN, last name, first name, and middle name. It includes a search bar for filtering students and pagination to navigate the list.

**Figure 4-2.** Enrollment Process

Figure 4-2 illustrates the Enrollment Process. There are options to edit the information or return to the student list. The interface is designed for a teacher, as indicated by the role in the top-right corner.

**Figure 4-3.** Student Enrolled List

Figure 4-3 This illustrates a student enrollment list for the school year 2024-2025, detailing the number of male and female students in two sections along with their Local Registration Numbers (LRN) and names.



**Figure 4-4** Student System Notification

Figure 4-4 Illustrates that the notification informs the student that they are enrolled in Year Level 7 for the School Year 2024-2025, Section Garnet, highlighting the system's functionality in keeping students updated about their enrollment status.

The screenshot shows a 'STUDENT SUBJECTS LOADS' page with a green header. It includes a dropdown for 'Select School Year' set to '2024-2025', a student profile picture, and basic information: 'Winefredo Bacasno III', 'LRN 124227150006', 'Gender Male', and 'Address Can-abay, Basey'. Below this is a table of subject loads:

Subject Name	Section	Year Level	Teacher
Filipino	Copernicus	10	teacher sample
Math	Copernicus	10	teacher sample
Science	Copernicus	10	teacher sample

**Figure 4-5.** Student Subject Load

Figure 4-5 This illustrates a student's subject load for the school year 2024-2025, including their personal details and enrolled subjects in the Copernicus section for Year Level 10.

The screenshot shows a user interface for a student enrollment system. At the top, there is a green header bar with a menu icon and a user profile icon labeled "teacher". Below the header, the title "STUDENT ENROLLED SUBJECT" is displayed. A sub-header "Number of Students per Grade Range per Quarter:" is followed by a table. The table has columns for LRN, Last Name, First Name, Middle Name, Year Level, Input Grades, and Final Rating. There are four rows of data:

LRN	Last Name	First Name	Middle Name	Year Level	Input Grades	Final Rating
123351170036	Cahingcoy	Rodley		7	89.00 89.00	90.00 91.00 89.75
112233445566	Co	Ronnel	Projas	7	98.00 98.00	90.00 89.00 93.75
123307160034	Abud	Mike Aljed	Inocando	7	78.00 76.00	81.00 83.00 79.5
107936160333	Amistoso	Liljan moris	Bacasono	7	77.00 81.00	85.00 84.00 81.75

Each row contains a "Save" button at the bottom.

**Figure 4-6. Teacher Input of Grades**

Figure 4-6 Illustrates a user interface for a student enrollment system that allows teachers to input and save grades for Year Level 7 students, displaying their Local Registration Numbers (LRN), names, input grades for multiple assessments, and final ratings for performance evaluation.

The screenshot shows a student grades interface. At the top, there is a green header bar with a menu icon and a user profile icon labeled "Andrei". Below the header, the title "STUDENT GRADES" is displayed. A dropdown menu "Select School Year" shows "2024-2025". Below the dropdown is a circular profile picture of a student. The student's name is "Winefredo Bacasono III". Below the name, there is information about the student: "LRN 124227150006", "Gender Male", and "Address Can-abay, Basey".

Below this section is a table titled "Quarterly". The table has columns for Subject Name, Section, Year Level, Quarter 1, Quarter 2, Quarter 3, Quarter 4, Final Rating, Remarks, and Graded by. There are three rows of data:

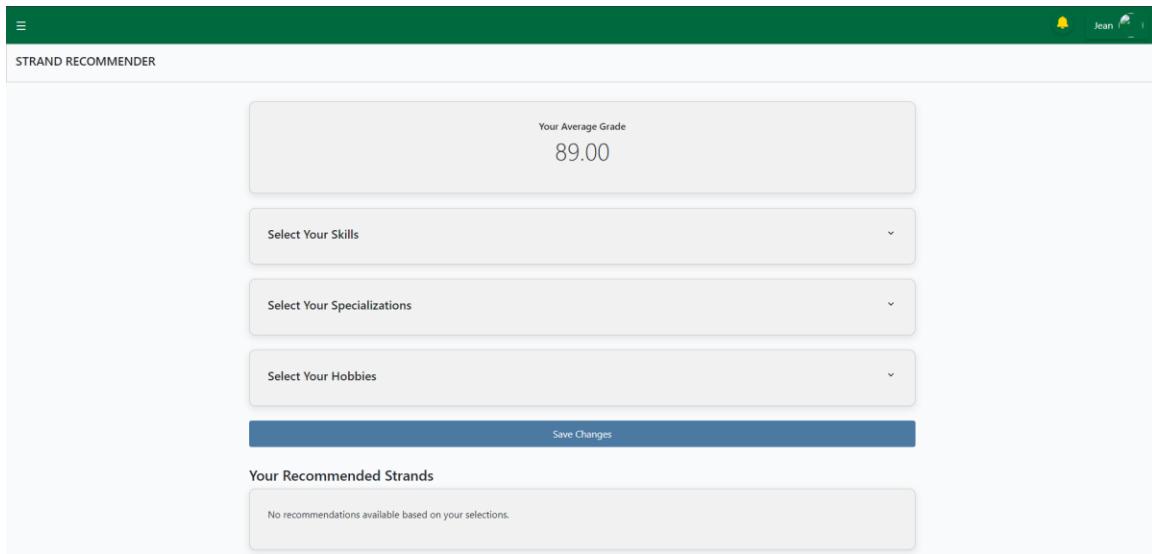
Subject Name	Section	Year Level	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Final Rating	Remarks	Graded by
Filipino	Copernicus	10	90.00	87.00	89.00	87.00	88.25	Passed	sample teacher
Math	Copernicus	10	90.00	89.00	89.00	98.00	91.50	Passed	sample teacher
Science	Copernicus	10	98.00	91.00	86.00	86.00	90.25	Passed	sample teacher

At the bottom of the table, it says "Final Average: 90.00 With Honors".

**Figure 4-7. Student Grades**

Figure 4-7 Illustrates a student grades interface displaying the academic performance for the school year 2024-2025, including quarterly grades, final rating, and overall average.

## Academic Strand Recommendation Module for Grade 10 Students



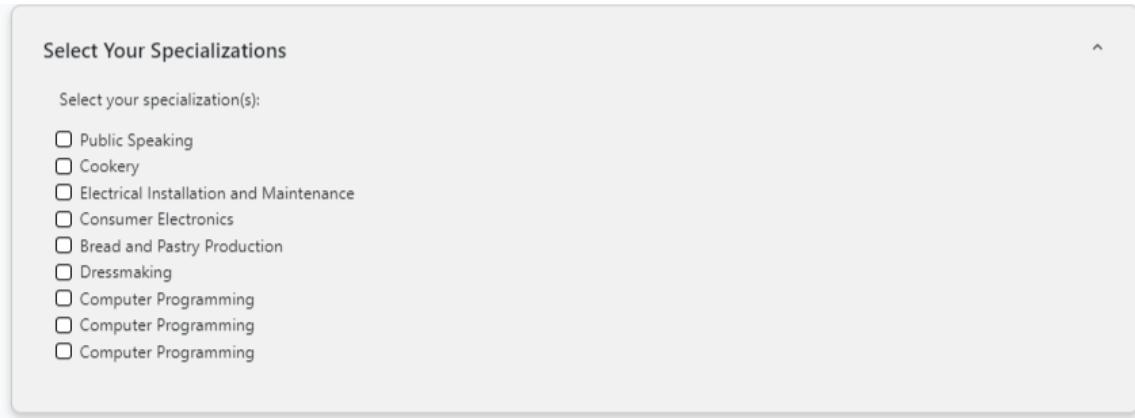
**Figure 4-8.** Strand Recommender User Interface

This figure 4-8 illustrates a strand recommender interface displaying the user's average grade of 89.00, with sections for selecting skills, specializations, and hobbies, but currently showing no available recommendations based on the selections made.

Skill	Rating
Programming	★★★★★
Critical Thinking	★★★★★
Communication Skills	★★★★★
Research Skills	★★★★★
Financial Literacy	★★★★★
Marketing Skills	★★★★★
Accounting Skills	★★★★★
Web Development	★★★★★
Networking Skills	★★★★★
Analytical Skills	★★★★★
Problem Solving	★★★★★
Scientific Inquiry	★★★★★

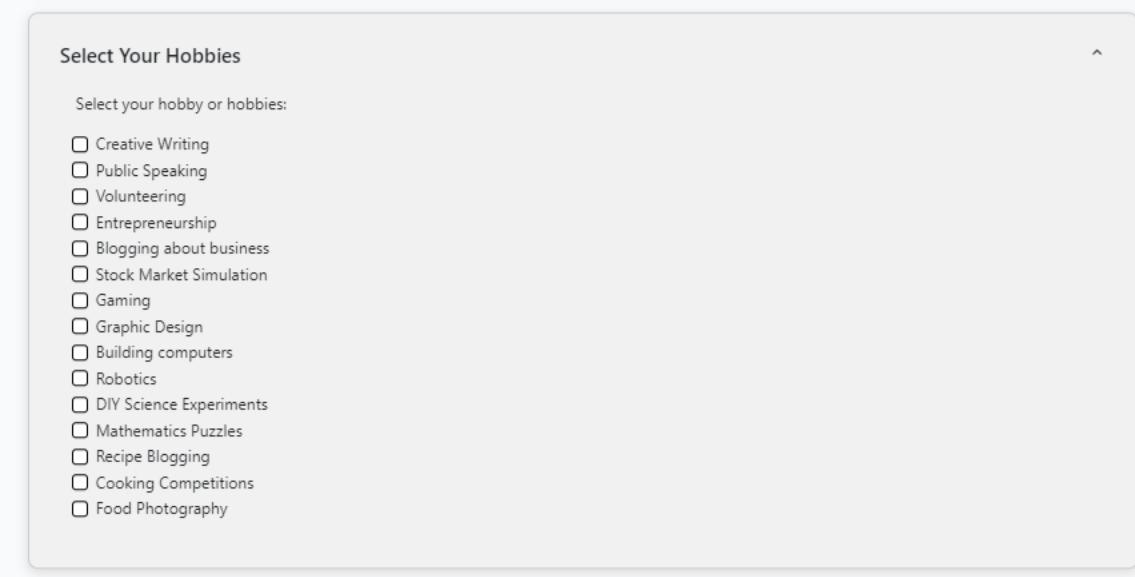
**Figure 4-9** Strand Recommender Select Your Skills

This figure 4-9 This Illustrates a skills selection interface where users can choose various skills and rate their proficiency using a star system, allowing for self-assessment in areas like programming, critical thinking, and communication skills.



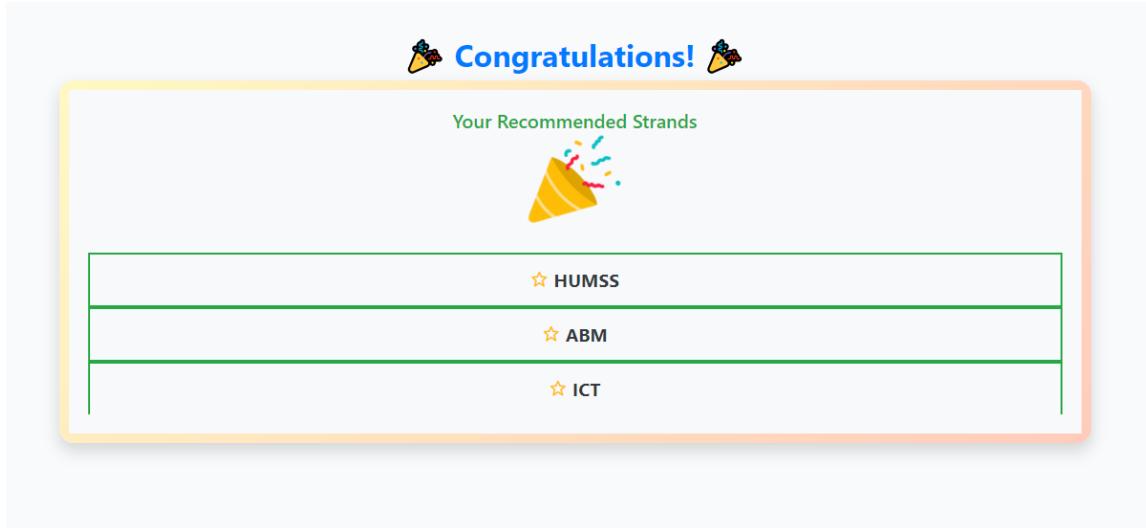
**Figure 4-10.** Strand Recommender Select Your Specializations

This figure 4-10 This Illustrates a specialization selection interface where users can choose from various options like public speaking, cookery, and computer programming to indicate their areas of focus or expertise.



**Figure 4-11.** Strand Recommender Select Your Hobbies

Figure 4-11 illustrates a hobby selection interface where users can choose from various activities like creative writing, gaming, and food photography to express their personal interests and pastimes.



**Figure 4-12.** Strand Recommender Recommended Strands

Figure 4-12 illustrates the result of your answer will determine the recommended strand that best fits your response.

**Evaluate the software quality of the developed system using the ISO 25010 standard.**

### **Evaluation Results and Analysis**

This section presents the results of the evaluation of Integrating Grading, Recommender, and Enrollment System for Enhance Education, focusing on key quality attributes as rated by the 2 types of respondents: students and teacher. The evaluation used a 5-point Likert scale to measure user satisfaction across several categories. In this analysis, each category's performance is discussed in detail, highlighting the strengths and areas for improvement based on the feedback received.

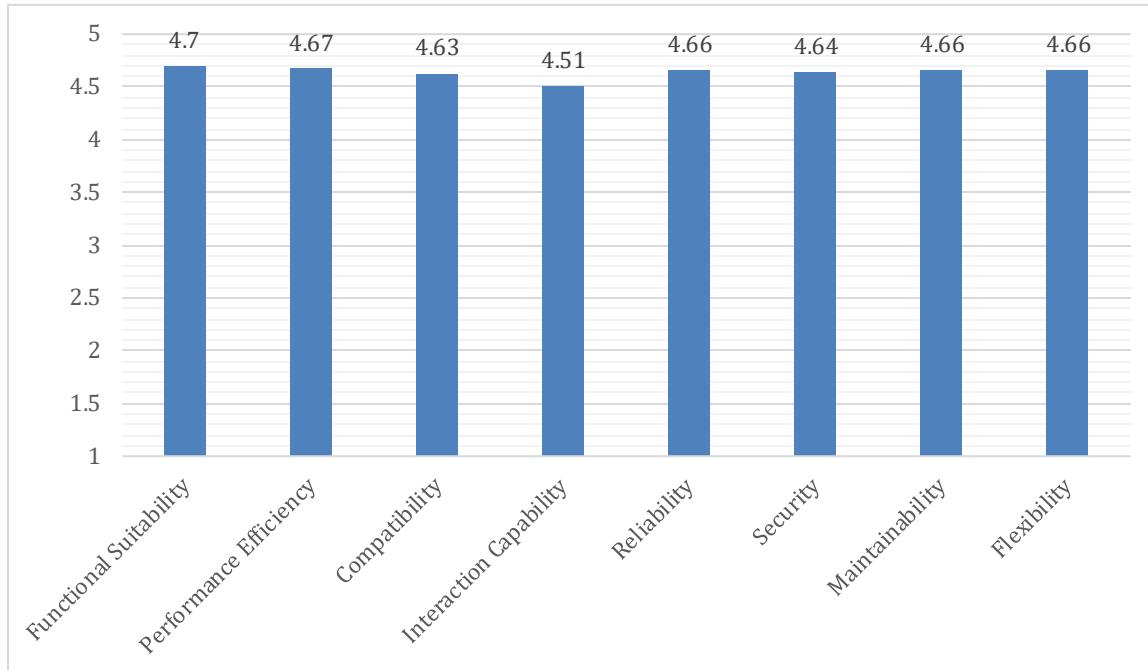
## Overview of Evaluation Results

The evaluation of the Integrating Grading, Recommender, and Enrollment System for Enhanced Education focused on its core functionalities, assessing its quality attributes based on feedback from 31 teachers and 7 students using a 5-point Likert scale. The results revealed consistent performance across all evaluation categories, with an overall interpretation of Acceptable.

In Functional Suitability, the system scored an average of 4.70, demonstrating its reliability in facilitating task completion and producing accurate results. Performance Efficiency received a weighted mean of 4.67, indicating optimized resource usage and timely responsiveness. Under Compatibility, the system achieved an average of 4.63, showcasing its ability to integrate with other platforms effectively.

The Interaction Capability category scored 4.51, reflecting user-friendly features, ease of learning, and strong error protection. Reliability was rated highly at 4.66, emphasizing the system's fault tolerance and availability. Security measures, including confidentiality and integrity, earned an average of 4.64, confirming its robustness in protecting user data.

Additionally, the system performed consistently in Maintainability, Flexibility, and Safety, each averaging 4.66, highlighting its adaptability, scalability, and operational safety. Overall, the system is a reliable, user-friendly, and efficient tool that meets the needs of educators and students, with potential for further enhancement in user engagement and system interaction to maximize its educational impact.



**Figure 4-13.** System Evaluation Results

Figure 4-13 shows the mean ratings of ISO 25010 software quality characteristics based on a survey conducted at Simeon Ocdol National High School in Basey, Samar, with 38 respondents (31 teachers and 7 students). Using a likert scale of 1 to 5, The evaluation of various system quality attributes, scored on a scale of 1 to 5. The attributes include Functional Suitability (4.7), Performance Efficiency (4.67), Compatibility (4.63), Interaction Capability (4.51), Reliability (4.66), Security (4.64), Maintainability (4.66), and Flexibility (4.66). The system excels in Functional Suitability, while Interaction Capability has the lowest score among the attributes.

**Table 4-1.** Overall Weighted Mean

Category	Average Weighted Mean	Rating Interpretation
A. Functional Suitability	4.70	Highly Acceptable
B. Performance Efficiency	4.67	Highly Acceptable
C. Compatibility	4.63	Highly Acceptable
D. Interaction Capability	4.51	Highly Acceptable

E. Reliability	4.66	Highly Acceptable
F. Security	4.64	Highly Acceptable
G. Maintainability	4.66	Highly Acceptable
H. Flexibility	4.66	Highly Acceptable

Table 4-1 categories show an average weighted mean between 4.51 and 4.70, indicating strong user satisfaction. While functional suitability, Performance Efficiency, Reliability, Maintainability and Flexibility received high ratings, the findings highlight the need to address some minor performance issues and improve feature flexibility to enhance the overall user experience.

## **Chapter V**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **Summary**

The project focused on developing an integrated enrollment system that combined grading and recommender systems to enhance educational experiences for students at Simeon Ocdol National High School. The system aimed to address the inefficiencies of the existing manual processes for managing student data, grades, and course recommendations. The enrollment system was designed to ensure accessibility, provide real-time notifications, and streamline the enrollment process for students. Additionally, a recommendation module was included to suggest suitable academic strands for Grade 10 students based on their interests and strengths.

The literature review highlighted the importance of educational recommendation systems in guiding students through their academic choices, emphasizing the need for personalized guidance to improve student outcomes. The system's development followed the ISO 25010 standard for software quality, ensuring that it met high standards of functionality, performance, and user satisfaction.

#### **Conclusions**

The discussion in Chapter 4 highlighted the development of an enrollment system that significantly improved accessibility and usability for both students and educators. Key features, such as a user-friendly interface and real-time notifications, streamlined the enrollment process, making it more efficient. An evaluation based on the ISO 25010 standard showed that the system performed well in reliability, performance efficiency, and safety, indicating its suitability for effective educational management. However, there was room for improvement in ensuring compatibility across various

platforms.

Additionally, the literature review emphasized the increasing importance of recommender systems (RS) in helping students make informed academic decisions, particularly at the high school level. These systems used computational techniques to provide personalized recommendations based on students' abilities, interests, and career aspirations. Research indicated that effective RS could enhance student engagement and decision-making, ultimately improving academic and career outcomes.

These findings highlighted the crucial role of technology in modern education. Enrollment systems and recommendation systems were essential tools for guiding students in their academic journeys, enabling them to make well-informed choices. Integrating these technologies enhanced administrative processes and provided students with a more customized educational experience.

## **Recommendations**

Here are some recommendations for future researchers aiming to enhance and advance the system in similar studies:

1. **Continuous User Training:** Regularly organize training sessions for teachers, administrators, and students to ensure they understand the system's features and can use them efficiently.
2. **LMS Integration:** Add a Learning Management System (LMS) to make course management easier, improve content delivery, and keep students more engaged. This will help teachers organize lessons, assignments, and quizzes more efficiently while giving students a smoother learning experience.
3. **Mobile Feature:** Create a mobile app or a mobile-friendly version of the system so students and teachers can access it anytime, anywhere.

4. **Attendance Tracking:** Add a real-time attendance tracking feature to monitor student attendance more easily. This will help teachers keep track of participation, improve accountability, and ensure students stay engaged in their classes.
5. **Expand Features:** Consider expanding the system's features to include additional functionalities, such as advanced analytics for tracking student performance and engagement, which can further aid in personalized learning.

## REFERENCES

- Al-Shaikhli, D., Jin, L., Porter, A., & Tarczynski, A. (2022). Visualising weekly learning outcomes (VWLO) and the intention to continue using a learning management system (CIU): the role of cognitive absorption and perceived learning self-regulation. *Education and Information Technologies*, 1–29. <https://doi.org/10.1007/s10639-021-10703>
- Alzahrani, L., & Panwar Seth, K. (2021). Factors influencing students' satisfaction with continuous use of learning management systems during the COVID-19 pandemic: An empirical study. *Education and Information Technologies*, 6787–6805. doi:10.1007/s10639-021-10492-5
- Anderson, J. (2019). Grading for Equity. Retrieved from gse.harvard.edu: <https://www.gse.harvard.edu/ideas/edcast/19/12/grading-equity>
- Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. L. E., Abdullah, A., & Ming, G. L. (2022). Blended learning adoption and implementation in higher education: A theoretical and systematic review. *Technology, Knowledge and Learning*, 27(2), 531–578. <https://doi.org/10.1007/s10758-020-09477-z>
- Awad, M., Salameh, K., & Leiss, E. L. (2019). Evaluating learning management system usage at a small university. ACM International Conference Proceeding Series. <https://doi.org/10.1145/3325917.3325929>
- Benedetto, L. (2023, May 10). Recommender systems: Benefits and practical guidelines for software professionals. SWForum.eu. <https://swforum.eu/online-sw-forum/software-technology/6/recommender-systems-benefits-and-practical-guidelines>
- Buijsse, R., Willemsen, M., & Snijders, C. (2023). Data-Driven Decision-Making. *Data Science for Entrepreneurship*, 239–277. doi:10.1007/978-3-031-19554-9\_11
- Camilleri, M. A., & Camilleri, A. C. (2022). The acceptance of learning management systems and

- video conferencing technologies: Lessons learned from COVID-19. *Technology, Knowledge and Learning*, 27(4), 1311–1333. <https://doi.org/10.1007/s10758-021-09561-y>
- Demir, F., Bruce-Kotey, C., & Alenezi, F. (2022). User experience matters: Does one size fit all? Evaluation of learning management systems. *Technology, Knowledge and Learning*, 27(1), 49–67. <https://doi.org/10.1007/s10758-021-09518-1>
- Evans, J. C., Yip, H., Chan, K., Armatas, C., & Tse, A. (2020). Blended learning in higher education: Professional development in a Hong Kong university. *Higher Education Research & Development*, 39(4), 643–656. <https://doi.org/10.1080/07294360.2019.1685943>
- Forrester, V. V. (2019). School management information systems: Challenges to educational decision-making in the big data era. *International Journal on Integrating Technology in Education*, 1-11. doi:10.48550/arXiv.1904.08932
- fullfabric. (2024, July 10). 6 benefits of an online admissions and enrollment system. Full Fabric. <https://www.fullfabric.com/articles/6-benefits-of-an-online-admissions-and-enrollment-system>
- Goh, T.-T., & Yang, B. (2021). The role of e-engagement and flow on the continuance with a learning management system in a blended learning environment. *International Journal of Educational Technology in Higher Education*, 18(49). <https://doi.org/10.1186/s41239-021-00285-8>
- Goh, T.-T., & Yang, B. (2022). The role of e-engagement and flow on the continuance with a learning management system in a blended learning environment. doi:10.1186/s41239-021-00285-8
- Huang, Q. (2022). Teachers' intention to use an electronic learning management system in the long term. *Interactive and Learning Environments*, 1–14. <https://doi.org/10.1080/10494820.2022.2062607>
- Joshi, M. (2023, July 21). What is an enrollment system and why does it matter? LeadSquared.

- <https://www.leadsquared.com/industries/education/what-is-an-enrollment-system/#:~:text=In%20simpler%20words%2C%20an%20enrollment>
- Kite, J., Schlub, T. E., Zhang, Y., Choi, S., Craske, S., & Dickson, M. (2020). Exploring lecturer and student perceptions and use of a learning management system in a postgraduate public health environment. *E-Learning and Digital Media*, 17(3), 183–198.  
<https://doi.org/10.1177/2042753020909217>
- Maria, S. A. A., Cazella, S. C., & Behar, P. A. (2019). Sistemas de Recomendação: conceitos e técnicas de aplicação. *Recomendação Pedagógica em Educação a Distância*, 19–47, Penso.
- Mthembu, T. (2022, May 11). Attention required! Attention Required! | Cloudflare.  
[https://education.adaptit.tech/blog/top-5-benefits-of-an-online-enrollment-management-system/#What\\_is\\_the\\_importance\\_of\\_an\\_online\\_enrollment\\_system](https://education.adaptit.tech/blog/top-5-benefits-of-an-online-enrollment-management-system/#What_is_the_importance_of_an_online_enrollment_system)
- Notermans, M. (2023, July 30). Online Enrollment Process: Advantages & Best Practices. Think Orion. <https://www.thinkorion.com/blog/online-enrollment-process>
- Rahul, R. (2024). Learning Management System 101: All You Need To Know. Retrieved from <https://www.vdocipher.com/blog/learning-management-system>
- Ralph, M., Schneider, B., Benson, D. R., Ward, D., & Vartia, A. (2021). Student enrollment decisions and academic success: evaluating the impact of classroom space design. *Learning Environments Research*. doi:10.1007/s10984-021-09379-6
- Rajabalee, Y. B., & Santally, M. (2020). Learner satisfaction, engagement and performances in an online module: Implications for institutional e-learning policy. *Education and Information Technologies*, 2623–2656. doi:10.1007/s10639-020-10375-1
- Rana, R. (2024, April 7). Learning management system 101: All you need to know. VdoCipher Blog.

<https://www.vdocipher.com/blog/learning-management-system>

Roy, D., & Dutta, M. (2022). A systematic review and research perspective on recommender systems. *Journal of Big Data*. doi:10.1186/s40537-022-00592-5

Sharma, L., & Srivastava, M. (2019). Teachers' motivation to adopt technology in higher education.

*Journal of Applied Research in Higher Education*, 12(4), 673–692.

<https://doi.org/10.1108/JARHE-07-2018-0156>

Tarus, J. K., Niu, Z., & Mustafa, G. (2019). Knowledge-based recommendation: A review of ontology-based recommender systems for e-learning. *Artificial Intelligence Review*, 50(1), 21–48.

<https://doi.org/10.1007/s10462-017-9539-5>

Timotheou, S., Miliou, O., Dimitriadis, Y., Villagrá Sobrino, S., Giannoutsou, N., Cachia, R., ...

Ioannou, A. (2022). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*

## APPENDIX A

### Letter to Client



**Republic of the Philippines  
EASTERN VISAYAS STATE UNIVERSITY  
Tacloban City**

COLLEGE OF ENGINEERING



October 31, 2024

**Maria Teresa Refugio**  
**School Head**  
**Simeon Ocdol National Highschool**  
**Brgy. San Antonio Basey, Samar**

Dear Ma'am Maria Teresa,

Greetings!

As a valued stakeholder in our capstone project, the undersigned would like to formally invite you to sit in and observe during the mock defense of our Capstone Project and Research 2 titled "Integrating Recommender and Enrollment System for Enhance Education." The mock defense is scheduled to take place in November 6, 2024 the Eastern Visayas State University Main Campus Information Technology Building.

Your insights and feedback would be invaluable during this session, and we would greatly appreciate your presence as we present our developed system. Your expertise will provide a unique perspective that can help refine our final defense. Please let us know if you are available to attend. We would be honored to have you join us and offer your feedback. Please feel free to reach out directly at 0910 683 2023 for any questions or further details regarding the mock defense. Thank you for considering this invitation. We look forward to your response.

Sincerely,

KIM D. TORGANO

RONNELL ANDREI P. CO

KERWIN O. JORDAN

Noted:

MA. WINDIE C. VERLARDE, PhD  
 Capstone Project Adviser

JESSIE B. PABAGAS, DIT  
 Head, Information Technology Department



*"Building Globally Competitive Professionals"*

## APPENDIX B

### Evaluation Tool

#### Functional Suitability

This characteristic represents the degree to which a product or system provides functions that meet stated and implied needs when used under specified conditions. (5 as the highest and 1 as the lowest.)

**Functional completeness** - Degree to which the set of functions covers all the specified tasks and intended users' objectives \*



**Functional correctness** - Degree to which a product or system provides accurate results when used by intended users. \*



**Functional appropriateness** - Degree to which the functions facilitate the accomplishment of specified tasks and objectives. \*



### Performance Efficiency

This characteristic represents the degree to which a product performs its functions within specified time and throughput parameters and is efficient in the use of resources (such as CPU, memory, storage, network devices, energy, materials...) under specified conditions. (5 as the highest and 1 as the lowest.)

**Time Behaviour** - Degree to which the response time and throughput rates of a product or system, when performing its functions, meet requirements. \*

1            2            3            4            5



**Resource utilization** - Degree to which the amounts and types of resources used by a product or system, when performing its functions, meet requirements. \*

1            2            3            4            5



**Capacity** - Degree to which the maximum limits of a product or system parameter \* meet requirements.

1            2            3            4            5



### Compatibility

Degree to which a product, system or component can exchange information with other products, systems or components, and/or perform its required functions while sharing the same common environment and resources. (5 as the highest and 1 as the lowest.)

**Co-existence** - Degree to which a product can perform its required functions efficiently while sharing a common environment and resources with other products, without detrimental impact on any other product. \*

1            2            3            4            5



**Interoperability** - Degree to which a system, product or component can exchange \* information with other products and mutually use the information that has been exchanged.

1            2            3            4            5



### Interaction Capability

Degree to which a product or system can be interacted with by specified users to exchange information via the user interface to complete specific tasks in a variety of contexts of use. (5 as the highest and 1 as the lowest.)



**Appropriateness recognizability** - Degree to which users can recognize whether a \* product or system is appropriate for their needs.



**Learnability** - Degree to which the functions of a product or system can be learnt \* to be used by specified users within a specified amount of time.



**User error protection.** Degree to which a system prevents users against operation \* errors.

1      2      3      4      5



**User engagement** - Degree to which a user interface presents functions and information in an inviting and motivating manner encouraging continued interaction. \*

1      2      3      4      5



**Inclusivity** - Degree to which a product or system can be used by people of various backgrounds (such as people of various ages, abilities, cultures, ethnicities, languages, genders, economic situations, etc.). \*

1      2      3      4      5



**User assistance** - Degree to which a product can be used by people with the widest range of characteristics and capabilities to achieve specified goals in a specified context of use. \*

1      2      3      4      5



**Self-descriptiveness** - Degree to which a product presents appropriate information, where needed by the user, to make its capabilities and use immediately obvious to the user without excessive interactions with a product or other resources (such as user documentation, help desks or other users). (5 as the highest and 1 as the lowest.) \*



### Reliability

Degree to which a system, product or component performs specified functions under specified conditions for a specified period of time. (5 as the highest and 1 as the lowest.)

**Faultlessness** - Degree to which a system, product or component performs specified functions without fault under normal operation. \*



**Availability** - Degree to which a system, product or component is operational and accessible when required for use. \*



**Fault tolerance** - Degree to which a system, product or component operates as intended despite the presence of hardware or software faults. \*

1

2

3

4

5



**Recoverability** - Degree to which, in the event of an interruption or a failure, a product or system can recover the data directly affected and re-establish the desired state of the system. \*

1

2

3

4

5



## Security

Degree to which a product or system defends against attack patterns by malicious actus and protects information and data so that persons or other products or systems have the degree of data access appropriate to their types and levels of authorization. (5 as the highest and 1 as the lowest.)

1            2            3            4            5



**Integrity** - Degree to which a system, product or component ensures that the state of its system and data are protected from unauthorized modification or deletion either by malicious action or computer error. \*

1            2            3            4            5



**Non-repudiation** - Degree to which actions or events can be proven to have taken place so that the events or actions cannot be repudiated later. \*

1            2            3            4            5



**Accountability** - Degree to which the actions of an entity can be traced uniquely \* to the entity.

1      2      3      4      5



**Authenticity** - Degree to which the identity of a subject or resource can be proved \* to be the one claimed.

1      2      3      4      5



**Resistance** - Degree to which the product or system sustains operations while \* under attack from a malicious actor.

1      2      3      4      5



### Maintainability

This characteristic represents the degree of effectiveness and efficiency with which a product or system can be modified to improve it, correct it or adapt it to changes in environment, and in requirements. (5 as the highest and 1 as the lowest.)

**Modularity** - Degree to which a system or computer program is composed of discrete components such that a change to one component has minimal impact on other components. \*



**Reusability** - Degree to which a product can be used as an asset in more than one system, or in building other assets. \*



**Analyzability** - Degree of effectiveness and efficiency with which it is possible to assess the impact on a product or system of an intended change to one or more of its parts, to diagnose a product for deficiencies or causes of failures, or to identify parts to be modified. \*



**Modifiability** - Degree to which a product or system can be effectively and efficiently modified without introducing defects or degrading existing product quality. \*



**Testability** - Degree of effectiveness and efficiency with which test criteria can be established for a system, product or component and tests can be performed to determine whether those criteria have been met. \*



**Flexibility**

Degree to which a product can be adapted to changes in its requirements, contexts of use or system environment. (5 as the highest and 1 as the lowest.)

**Adaptability** - Degree to which a product or system can effectively and efficiently \* be adapted for or transferred to different hardware, software or other operational or usage environments.



**Scalability** - Degree to which a product can handle growing or shrinking workloads or to adapt its capacity to handle variability. \*



**Installability** - Degree of effectiveness and efficiency with which a product or system can be successfully installed and/or uninstalled in a specified environment. \*



**Replaceability** - Degree to which a product can replace another specified software product for the same purpose in the same environment. \*



### Safety

This characteristic represents the degree to which a product under defined conditions to avoid a state in which human life, health, property, or the environment is endangered. (5 as the highest and 1 as the lowest.)

**Operational constraint** - Degree to which a product or system constrains its operation to within safe parameters or states when encountering operational hazard. \*



**Risk identification** - Degree to which a product can identify a course of events or operations that can expose life, property or environment to unacceptable risk. \*



**Fail safe** - Degree to which a product can automatically place itself in a safe operating mode, or to revert to a safe condition in the event of a failure. \*

1      2      3      4      5



**Hazard warning** - Degree to which a product or system provides warnings of unacceptable risks to operations or internal controls so that they can react in sufficient time to sustain safe operations. \*

1      2      3      4      5



**Safe integration** - Degree to which a product can maintain safety during and after integration with one or more components. \*

1      2      3      4      5



## APPENDIX C

### Evaluation Tool Result

#### **Functional Suitability**

<b>Questions</b>	<b>Teachers (31)</b>	<b>Students (7)</b>	<b>Weighted Mean</b>	<b>Rating</b> <b>Interpretation</b>
1. All the features function as expected.	4.6	4.7	4.65	Highly Acceptable
2. Degree to which a product or system provides accurate results when used by intended users.	4.7	4.8	4.75	Highly Acceptable
3. Degree to which the functions facilitate the accomplishment of specified tasks and objectives.	4.7	4.7	4.7	Highly Acceptable
<b>Average Category</b>			4.70	Highly Acceptable

This table scored 4.65 for having features that work as expected, 4.75 for providing accurate results, and 4.7 for helping users accomplish tasks and goals. Overall, the system received an

average score of 4.7, which is rated as "Highly Acceptable". This means the system works well, is reliable, and supports users effectively in completing their tasks.

### Performance Efficiency

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
<b>Time Behavior - Degree to which the response time and throughput rates of a product or system, when performing its functions, meet requirements.</b>	4.65	4.74	4.69	Highly Acceptable
<b>Resource utilization - Degree to which the amounts and types of resources used by a product or system, when performing its functions, meet requirements.</b>	4.7	4.6	4.65	Highly Acceptable
<b>Capacity</b> Degree to which the maximum limits of a product or system	4.6	4.7	4.65	Highly Acceptable

parameter meet requirements.				
Average Category		4.67	Highly Acceptable	

This table shows how well the system performs in terms of response time and resource usage. For Question 1 (response time and throughput), the system received a weighted mean of 4.69, with teachers rating it 4.65 and students giving it 4.74, indicating good performance. For Question 2 (resource usage), the system scored a 4.65 on average, with teachers giving it 4.7 and students 4.6, showing it meets resource requirements effectively. Overall, the system is efficient in both speed and resource use, earning an acceptable rating.

### Compatibility

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Co-existence  Degree to which a product can perform its required functions efficiently while sharing a common environment and resources with other	4.57	4.64	4.60	Highly Acceptable

products, without detrimental impact on any other product.				
Interoperability  Degree to which a system, product or component can exchange information with other products and mutually use the information that has been exchanged.	4.74	4.56	4.65	Highly Acceptable
Average Category			4.63	Highly Acceptable

This table shows how well the system works with other products. For co-existence, it scored 4.60, meaning it works well with other products. For interoperability, it scored 4.65, showing it can exchange information smoothly with other systems. Overall, the system is rated as acceptable in both areas.

### Interaction Capability

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Appropriateness recognizability	4.5	4.2	4.45	Highly Acceptable

Degree to which users can recognize whether a product or system is appropriate for their needs.				
Learnability  Degree to which the functions of a product or system can be learnt to be used by specified users within a specified amount of time.	4.6	4.3	4.5	Highly Acceptable
Operability  Degree to which a product or system has attributes that make it easy to operate and control.	4.7	4.5	4.65	Highly Acceptable
User error protection  Degree to which a system prevents users against operation errors.	4.8	4.6	4.7	Highly Acceptable
User engagement  Degree to which a user	4.4	4.0	4.3	Highly Acceptable

interface presents functions and information in an inviting and motivating manner encouraging continued interaction.				
Inclusivity Degree to which a product or system can be used by people of various backgrounds.	4.6	4.3	4.5	Highly Acceptable
User Assistance Degree to which a product can be used by people with the widest range of characteristics and capabilities to achieve specified goals in a specified context of use.	4.7	4.2	4.6	Highly Acceptable
Average Category			4.51	Highly Acceptable

This table shows that the system is easy to use and supportive. It scored well in Operability

(4.65) and User Error Protection (4.7), meaning it's easy to operate and prevents mistakes. It's also easy to learn (4.5) and helpful to users with different needs (4.6). However, it could improve in Appropriateness Recognizability (4.45) and User Engagement (4.3), as students rated these areas lower. Overall, the system is user friendly and it has 4.51 average weighted mean.

## Reliability

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Faultlessness - Degree to which a system, product or component performs specified functions without fault under normal operation.	4.6	4.5	4.58	Highly Acceptable
Availability  Degree to which a system, product or component is operational and accessible when required for use.	4.7	4.6	4.65	Highly Acceptable
Fault Tolerance Degree to which a system, product or component operates as intended despite the	4.8	4.7	4.75	Highly Acceptable

presence of hardware or software faults.				
Average Category			4.66	Highly Acceptable

This table summarizes the system reliability in producing accurate outputs and recovering data after system failures, scoring a weighted mean of 4.66.

## Security

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Confidentiality  Degree to which a product or system ensures that data are accessible only to those authorized to have access.	4.6	4.5	4.58	Highly Acceptable
Integrity  Degree to which a system, product or component ensures that the state of its system and data is protected from unauthorized modification or deletion either by	4.7	4.6	4.65	Highly Acceptable

malicious action or computer error.				
Non-Repudiation  Degree to which actions or events can be proven to have taken place so that the events or actions cannot be repudiated later.	4.8	4.7	4.75	Highly Acceptable
Accountability  Degree to which the actions of an entity can be traced uniquely to the entity.	4.6	4.4	4.55	Highly Acceptable
Authenticity  Degree to which the identity of a subject or resource can be proved to be the one claimed.	4.7	4.5	4.65	Highly Acceptable
Average Category			4.64	Highly Acceptable

The system security features received an overall weighted mean rating of 4.64, reflecting user trust in its data protection measures. Recommendations for improvements, like better authentication methods or event tracking, could further boost the app's reliability and user trust.

## Maintainability

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Modularity  Degree to which a system or computer program is composed of discrete components such that a change to one component has minimal impact on other components.	4.7	4.6	4.65	Highly Acceptable
Reusability - Degree to which a product can be used as an asset in more than one system, or in building other assets.	4.6	4.5	4.58	Highly Acceptable
Analyzability Degree of effectiveness and efficiency with which it is possible to assess the impact on a product or system of an intended change to one or more of	4.8	4.7	4.75	Highly Acceptable

its parts, to diagnose a product for deficiencies or causes of failures, or to identify parts to be modified.				
Modifiability  Degree to which a product or system can be effectively and efficiently modified without introducing defects or degrading existing product quality.	4.7	4.6	4.65	Highly Acceptable
Average Category			4.66	Highly Acceptable

The system received a high rating of 4.66 for its ease of maintenance. Users found it simple to keep the app running smoothly. However, to better adapt to changing user needs, the app could benefit from improvements in its flexibility.

## Flexibility

Questions	Teachers (31)	Students (7)	Weighted Mean	Rating Interpretation
Adaptability  Degree to which a product or system can effectively and efficiently be adapted for or transferred to different hardware, software or other operational or usage environments.	4.6	4.5	4.58	Highly Acceptable
Scalability - Degree to which a product can handle growing or shrinking workloads or to adapt its capacity to handle variability.	4.7	4.6	4.65	Highly Acceptable
Replaceability - Degree to which a	4.8	4.7	4.75	Highly Acceptable

product can replace another specified software product for the same purpose in the same environment.				
Average Category		4.66	Highly Acceptable	

This table shows how well a product can adapt to different situations, handle varying workloads, and replace other products, with both teachers and students generally finding it acceptable. It scores a weighted mean of 4.66.

## APPENDIX D

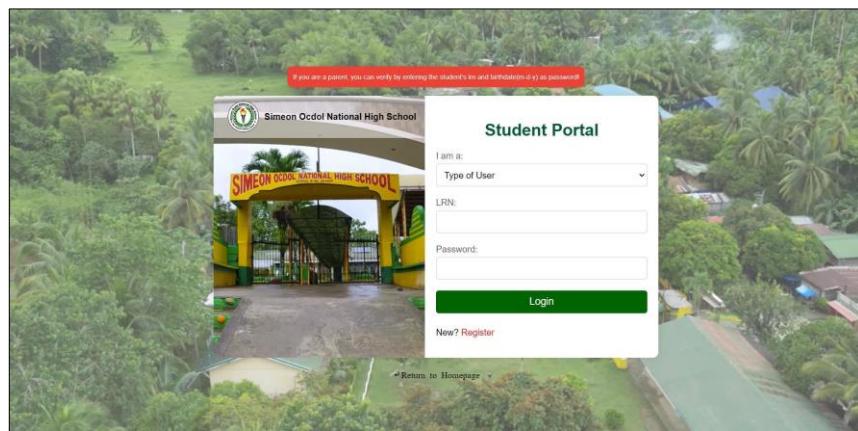
### User Manual

#### STUDENT PORTAL

##### LOGIN SYSTEM

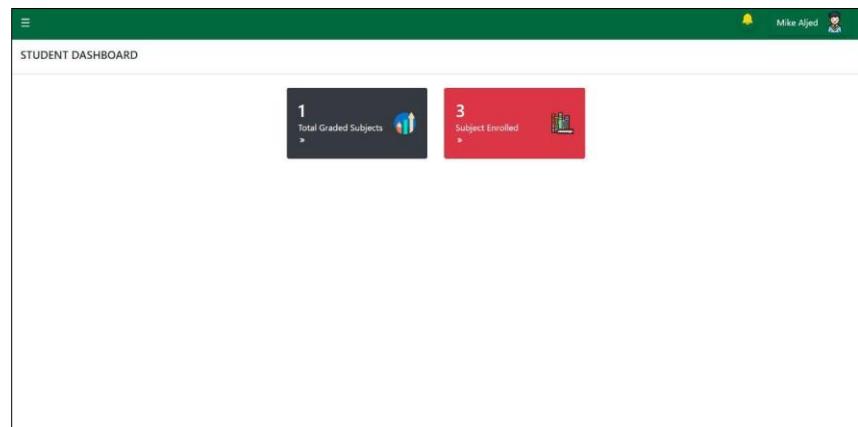
###### A. LOGIN

1. Provide the assigned LRN and password for the Student Portal.



###### B. DASHBOARD

2. After this, the student will be directed to the system's dashboard, where they can view total graded subjects and subject enrolled.



## C. USERS

3. The student can view total subject enrolled, grades – enrolled subjects and update their details.

SUBJECT ENROLLED

Subject Name	Section	Year Level	Teacher
Filipino	Jade	7	teacher sample
Math	Jade	7	teacher sample
Science	Jade	7	teacher sample

GRADES - ENROLLED SUBJECTS

Subject Name	Section	Year Level	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Final Rating	Remarks	Graded by
Filipino	Jade	7							
Math	Jade	7	78.00	81.00	83.00	76.00	79.50	Passed	sample teacher
Science	Jade	7							

Final Average:

4. The student can update their new information and password.

Details Parent/Guardian Info.

Personal Info.

LRN  
123307160034

Last Name Abud	First Name Mike Aljed	Middle Name Inocando
Gender Male	Birthdate 2011-12-04	

Address  
Bacubac, Basey

Account Details

Email student@gmail.com	New Password	Type Old Password	Confirm New Password
----------------------------	--------------	-------------------	----------------------

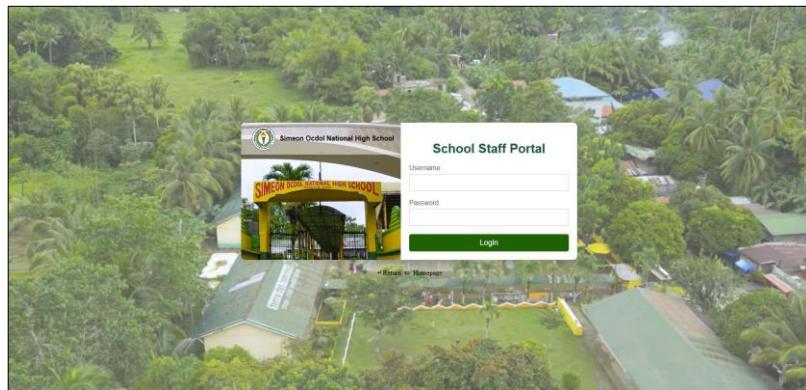
**Update**

## School Staff Portal

### LOGIN SYSTEM

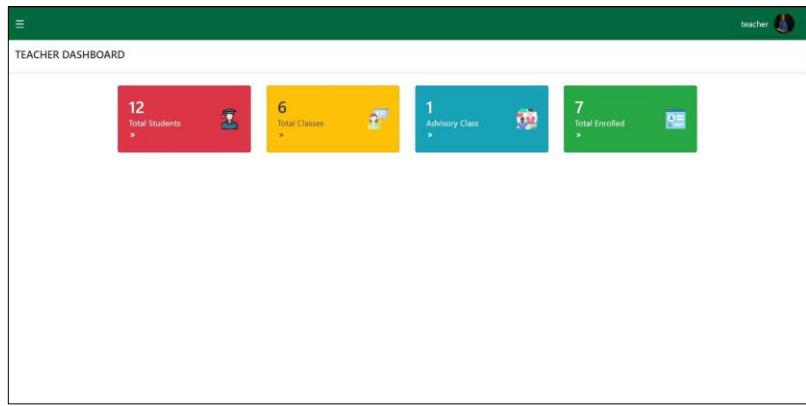
#### A. LOGIN

1. Provide the assigned username and password for the teacher and admin.



#### B. Teacher

1. After that, the teacher will be directed to the system's dashboard, where they can view total students, total classes, advisory class and total enrollee.



2. The teacher can view student information, including LRN, last name, first name and middle name.

STUDENT LIST					
	Actions	LRN	Last Name	First Name	Middle Name
<a href="#">Edit</a>		112233445566	Co	Ronnell Andrei	Projas
<a href="#">Edit</a>		111111111111	Torgs	Kim	D.
<a href="#">Edit</a>		123351170036	Cahingcoy	Rodley	
<a href="#">Edit</a>		123456789123	Jordan	Kerwin	
<a href="#">Edit</a>		123307160034	Abud	Mike Aljed	Inocando
<a href="#">Edit</a>		107936160333	Amistoso	Ulijan moris	Bacasno
<a href="#">Edit</a>		123328140001	Alcones	John Mark	Barras
<a href="#">Edit</a>		123351150014	Aguilina	Jean	Dela Cruz
<a href="#">Edit</a>		124227150006	Bacasno III	Winefredo	Batuto

3. The teacher can view subject, section, year level and also can check the subject.

CLASSES				
Select School Year:				
Subject	Section	Year Level	Semester	Type of Subject
Math	Jade	7		Check Students
Science	Jade	7		Check Students
Filipino	Jade	7		Check Students
Math	Copernicus	10		Check Students
Science	Copernicus	10		Check Students
Filipino	Copernicus	10		Check Students

4. The teacher can check also their advisory class and download/print forms of their advisory class students.

ADVISORY CLASSES		
Select School Year:		
Section	Year Level	
Jade	7	Check Students

ADVISORY CLASS STUDENTS					
Forms	LRN	Last Name	First Name	Middle Name	
<a href="#">Download</a> <a href="#">Print</a>	123307160034	Abud	Mike Aljed	Inocando	<a href="#">View Grades</a>
<a href="#">Download</a> <a href="#">Print</a>	107936160333	Amistoso	Liljan moris	Bacasno	<a href="#">View Grades</a>
<a href="#">Download</a> <a href="#">Print</a>	123351170036	Cahingcoy	Rodley		<a href="#">View Grades</a>
<a href="#">Download</a> <a href="#">Print</a>	112233445566	Co	Ronnell Andrei	Projas	<a href="#">View Grades</a>

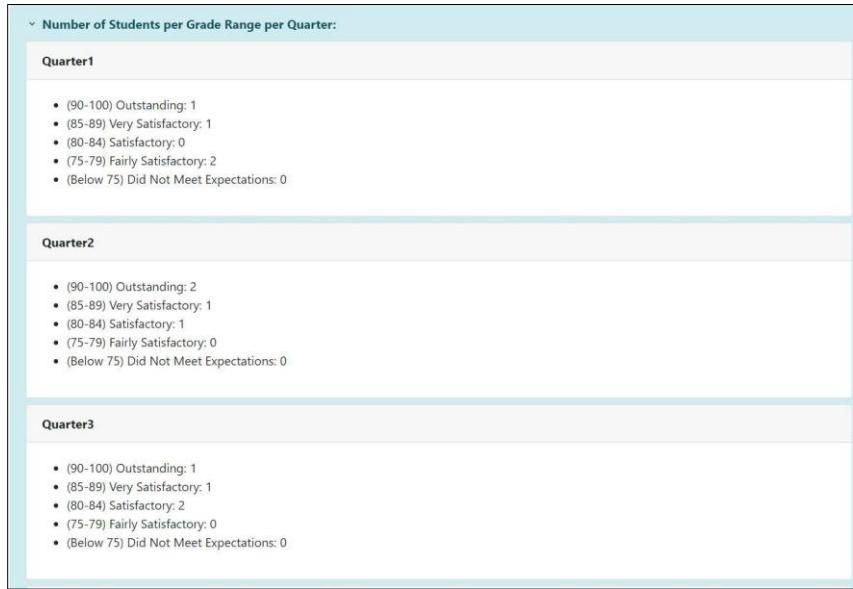
5. The teacher can input grades for students enrolled in various subjects. It lists students' LRNs, last names, first names, middle names, year level, and allows for the input of grades for each quarter, along with a final rating for each student.

STUDENT ENROLLED SUBJECT							
▼ Number of Students per Grade Range per Quarter:							
LRN	Last Name	First Name	Middle Name	Year Level	Input Grades	Final Rating	
123307160034	Abud	Mike Aljed	Inocando	7	Quarter 1: 78.00 Quarter 2: 81.00 Quarter 3: 83.00 Quarter 4: 76.00	79.5	<a href="#">Save</a>
107936160333	Amistoso	Liljan moris	Bacasno	7	Quarter 1: 77.00 Quarter 2: 85.00 Quarter 3: 84.00 Quarter 4: 81.00	81.75	<a href="#">Save</a>

6. The teacher can view the list of students enrolled in Year Level 7, Section Jade. It includes a summary of the total number of male (3) and female (1) students, along with their Local Registration Numbers (LRN), last names, first names, and middle names.

STUDENT ENROLLED LIST					
School Year:	All Years	Year Level:	Section: Jade	Males (3)	Females (1)
LRN	Last Name	First Name	Middle Name		
123307160034	Abud	Mike Aljed	Inocando		
107936160333	Amistoso	Liljan moris	Bacasno		
123351170036	Cahingcoy	Rodley			
112233445566	Co	Ronnell Andrei	Projas		

7. The teacher can view the presents a summary of student performance across different quarters. It categorizes students based on their grades into ranges such as Outstanding, Very Satisfactory, Satisfactory, Fairly Satisfactory, and Did Not Meet Expectations, providing a count for each category per quarter.



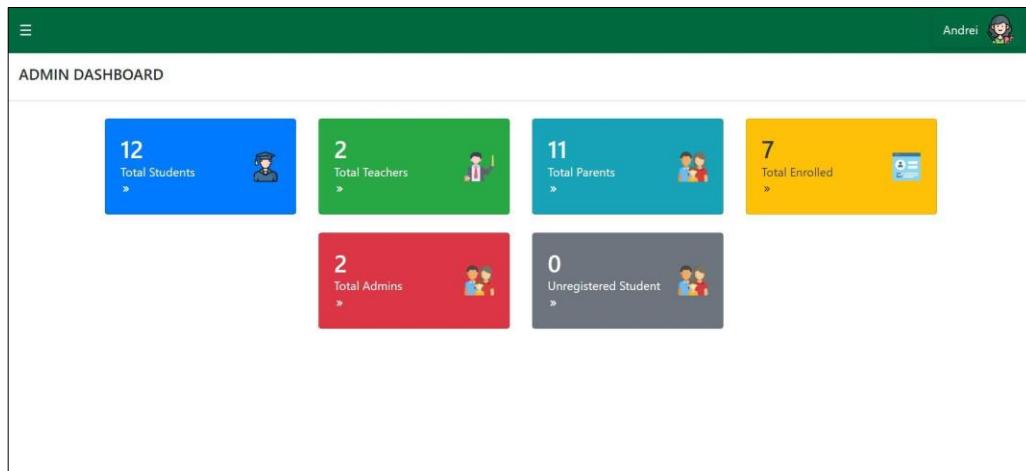
8. The user profile for a teacher, featuring sections for personal information and account details. Users can input their last name, first name, middle name, gender, birthdate, and address. Additionally, there are fields for the username, email, and password management, allowing for updates to account information.

The screenshot shows a user profile edit form for a teacher. At the top, there is a circular profile picture placeholder with a camera icon. Below it, the tab "Details" is selected. The form is divided into several sections:

- Personal Info.** Contains fields for Last Name ("sample"), First Name ("teacher"), Middle Name ("O"), Gender ("Male"), and Birthdate ("2002-08-07").
- Address.** Contains a single field with the value "Cabalawan".
- Account Details.** Contains fields for Username ("teacher"), Email ("teacher@mail.com"), New Password, Type Old Password, and Confirm New Password. A blue "Update" button is located at the bottom left of this section.

### C. Admin

9. After login, the admin will be directed to the system's dashboard, where they can view total students, total teachers, total parents, total admins, unregistered student and total enrolled.



10. The admin can view user interface for managing a list of parents. The table below shows columns for last names, first names, and middle names of parents.

PARENT LIST			
<input type="text" value="Search parent by last name or first name..."/>			
Actions	Last Name	First Name	Middle Name
	Co	Ronaldo	Vicar
	torgs	meki	d.
	Mabutol	Diana Rose	Gula
	Jordan	Tess	
	Abud	Edwin	
	Amante	Christopher Jervoso	
	Alcones	Emily	Barras
	Dela Cruz	Loida	Guti-ay
	Bacalso IR.	Winfredo	Reiente

« Previous 1 2 Next »

11. This action shows detailed information about a parent, including contact details and associated students' information.

**Parent and Student Information**

<b>Profile Picture</b>	Ronaldo Vacal Co
<b>Gender:</b>	Male
<b>Phone Number:</b>	09952924845

**Associated Student**

<b>LRN:</b> 112233445566	<b>LRN:</b> 556677889900
<b>Name:</b> Ronnell Andrei Projas Co	<b>Name:</b> Rita Projas Co
<b>Gender:</b> Male	<b>Gender:</b> Female
<b>Address:</b> San Antonio, Basey Samar	<b>Address:</b> Brgy 103 Suhì
<b>Birthdate:</b> 2002-08-23	<b>Birthdate:</b> 2010-11-21

**Close**

12. This is a user interface for a teacher list. This setup enables efficient management and organization of teacher data.

**TEACHER LIST**

Search teacher by last name or first name...

Actions	Last Name	First Name	Middle Name
edit icon	sample	teacher	O
edit icon	Raq	Jayz	G

13. Admin can edit the teacher information and to enter new password if forgotten.

The screenshot shows a modal window titled "Edit Profile". It contains fields for "Last Name" (sample), "First Name" (teacher), "Middle Name Optional" (O), "Birthdate" (08/07/2002), "Address" (Cabalawan), and a "Type New Password if forgotten" field. At the bottom are "Cancel" and "Save Changes" buttons.

14. The admin can assign subjects, school year to a teacher.

The screenshot shows a "Assign Subject" page. On the left is a teacher profile for "teacher sample" with details: Gender: Male, Address: Cabalawan, Email: teacher@mail.com. On the right is a form titled "Assign Subjects to Teacher" with sections for "Section" (Select Section dropdown), "School Year" (2024-2025 dropdown), "Available Subjects" (Select Subject dropdown), and "Selected Subject" (table with columns: Subject Name, Year Level, Type of Subject, Actions). Buttons include "Assign Subjects", "Back to Teacher List", and "View Assigned Subjects".

15. This is the list of subjects assigned to the teacher, showing year level, subject name, section, and type, with options to update or remove each subject.

The screenshot shows a "Assigned Subjects" page. On the left is a teacher profile for "teacher sample" with details: Gender: Male, Address: Cabalawan, Email: teacher@mail.com. On the right is a table titled "Assigned Subjects" with a "Select School Year: All Years" dropdown. The table has columns: Year Level, Subject Name, Section, Semester, Type of Subject, and Action (Buttons for Update and Remove). Data rows include:

Year Level	Subject Name	Section	Semester	Type of Subject	Action
7	Math	Jade			<button>Update</button> <button>Remove</button>
7	Science	Jade			<button>Update</button> <button>Remove</button>
7	Filipino	Jade			<button>Update</button> <button>Remove</button>
10	Math	Copernicus			<button>Update</button> <button>Remove</button>
10	Science	Copernicus			<button>Update</button> <button>Remove</button>
10	Filipino	Copernicus			<button>Update</button> <button>Remove</button>

At the bottom are "Back" and "Back to Teacher List" buttons.

16. The admin is assigning an advisory role to a teacher, displaying the teacher's details, section, and school year.

The screenshot shows a user interface titled 'ASSIGN ADVISORY'. On the left, there is a circular profile picture of a teacher labeled 'teacher sample'. Below the picture, the teacher's details are listed: Gender: Male, Address: Cabalawan, and Email: teacher@mail.com. To the right, there is a form titled 'Assign Advisory Role to Teacher' with fields for 'Section' (Jade | Grade: 7) and 'School Year' (2024-2025). At the bottom of the form are three buttons: 'Assign Advisory Role' (green), 'Back to Teacher List' (grey), and 'View Assigned Advisory' (blue).

17. This is the list of assigned advisory classes for the teacher, showing the section name and year level, with options to update.

The screenshot shows a user interface titled 'ASSIGNED ADVISORY CLASSES'. On the left, there is a circular profile picture of a teacher labeled 'teacher sample'. Below the picture, the teacher's details are listed: Gender: Male, Address: Cabalawan, and Email: teacher@mail.com. To the right, there is a table titled 'Assigned Advisory Classes' with a dropdown menu 'Select School Year: All Years'. The table has columns: Section Name, Year Level, and Action. One row is shown: Jade, 7, with 'Update' and 'Remove' buttons. At the bottom of the table is a 'Back to Teacher List' button.

18. The admin manages subjects, featuring a table of subjects with options to edit or delete, along with filters for year level, type, and strand.

The screenshot shows a user interface titled 'MANAGE SUBJECTS'. At the top, there is a search/filter bar with fields for 'Subject Name' (Math), 'Year Level' (7), 'Type of Subjects' (dropdown), 'Strands (optional)' (dropdown), and 'Semester' (dropdown). Below the search bar is a green 'Create Subject' button. The main area is a table with columns: Subject Name, Grade Level, Type, Strand, Semester, and Actions. The table contains 15 rows of subject data, each with 'Edit' and 'Delete' buttons in the Actions column. The subjects listed are: Math (Grade 7, 8, 9, 10), Science (Grade 7, 8, 9, 10), and Filipino (Grade 7, 8, 9, 10).

The screenshot shows a 'Manage Sections' interface. At the top, there are input fields for 'Section Name' (Garret), 'Year Level' (7), and 'Strand' (None). A green 'Create Section' button is below. The main area is a table with columns: Section Name, Year Level, Strand, and Actions (Edit, Delete).

Section Name	Year Level	Strand	Actions
Garret	7		Edit Delete
Jade	7		Edit Delete
Hamorowen	8		Edit Delete
Mahogany	8		Edit Delete
Aqua	9		Edit Delete
Deuterium	9		Edit Delete
Alunina	10		Edit Delete
Copernicus	10		Edit Delete
Addition	11	ABM	Edit Delete
Jaria	11	ICT	Edit Delete
Laser	11	HUMSS	Edit Delete

19. The admin manages the strand, showing a list of strands with their names and descriptions.

For managing school years, you can create new school year input the school year, start date, and end date.

The screenshot shows two management pages. The top part is 'Manage Strands' with fields for 'Strand Name' (HUMSS) and 'Description' (Humanities of Social Sciences). The bottom part is 'Manage School Year' with fields for 'School Year' (2024-2025), 'Start Date' (2024-08-15), and 'End Date' (2025-08-15).

**Manage Strands:**

Strand Name	Description	Actions
HUMSS	Humanities of Social Sciences	Edit Delete
STEM	Science Technology Mathematics	Edit Delete
ABM	Accountancy Business Management	Edit Delete
ICT	Information Communication Technology	Edit Delete
TVL	Technical Vocational Livelihood	Edit Delete

**Manage School Year:**

School Year	Start Date	End Date	Actions
2024-2025	2024-08-15	2025-08-15	Edit Delete
2025-2026	2025-08-20	2026-08-20	Edit Delete

20. Adding and managing specializations in a recommendation system. It allows users to input new specialization names, assign them to specific strands, and manage existing ones through editing or deletion options.

Specialization Name	Strand	Action
Public Speaking	HUMSS	<a href="#">Edit</a> <a href="#">Delete</a>
Cookery	TVL	<a href="#">Edit</a> <a href="#">Delete</a>
Electrical Installation and Maintenance	ICT	<a href="#">Edit</a> <a href="#">Delete</a>
Consumer Electronics	ICT	<a href="#">Edit</a> <a href="#">Delete</a>

This is the admin profile management page where the user can view and update their personal information (name, gender, email) and account details such as username and password. It includes an option to update the profile picture.

## APPENDIX E

**Proofread Certificate**

## APPENDIX F

### Turnitin Certificate



Republic of the Philippines  
**EASTERN VISAYAS STATE UNIVERSITY**  
 Tacloban City

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### INFORMATION TECHNOLOGY DEPARTMENT

#### Certificate of Similarity Index

This is to certify that the Capstone Project entitled:

#### **Integrating Recommender and Enrollment to Enhance Education**

authored by:

**Kim Torgano**  
**Ronnell Andrei Co**  
**Kerwin Jordan**

*Bachelor of Science in Information Technology*  
 has been subjected to similarity check on March 2, 2025  
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Certified true and correct:

**MA. WINDIE C. VERLADE, PhD**  
 Capstone Project Adviser

Noted:

**JESSIE R. PARAGAS, DIT**  
 Capstone Project Instructor

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Civil Status: Single

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- PHOTO EDITING • VIDEO EDITING

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Tacloban City

Bachelor Of Science in Information Technology

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Basey, Sanar

**PRIMARY** Timpolok Elementary School

Lapu-Lapu City

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Tacloban City, Leyte

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Tacloban City, Leyte