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MODERNIZING RECORDS MANAGEMENT: IMPLEMENTATION OF AN INFORMATION SYSTEM FOR COLLEGE-LEVEL ACADEMIC EVALUATION

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ABSTRACT
This study presents the implementation and overall performance of the newly developed Christ the King College de Maranding, Inc. – College Department Grading System (CKCM-CDGS). The study emphasized how the system enhances both faculty and student experiences, solves the problems of manual grading methods, and improves academic processes. The system's reliability, usability, functionality, maintainability, portability, and efficiency were evaluated by 15 students and 15 instructors and IT professionals using developmental research supported by ISO 9126-1 software quality standards. The system was rated 4.06 (Effective) in reliability, 4.06 (Effective) in usability, 4.21 (Very Effective) in functionality, 4.02 (Effective) in maintainability, 4.05 (Effective) in portability, and 4.14 (Effective) in efficiency from its stakeholders. The results show that the system significantly enhanced accuracy in computing student grades and decreased processing times, and quickened grade report submission of instructors to college deans and the registrar, demonstrating its high institutional usefulness. These also offered students instant access to academic records and performance evaluations. However, minor technical issues, including documentation gaps and minor issues during peak hours were noted. Therefore, the study recommends system optimization, better documentation, integration with various academic platforms, and further development of analytics features.

Keywords:
College Grading System, Higher Education, Faculty and Student Experiences, ISO 9126-1 Software Quality Standard, Accuracy, Academic Records, Student Academic Evaluation

INTRODUCTION

Modern technology is being used by educational institutions more and more to improve information availability and simplify academic tasks. An institution like Christ the King College de Maranding, Inc., still practices manual grading methods. Which often led to computation errors, delayed releases of grades, and heavy faculty workloads. These challenges resulted in students' late academic assessment and lower institutional productivity. As the advantage of software development methodologies and innovations in information technology is now easy, shifting toward automated grading methods has become a global trend.

Recently, a number of implemented grading systems in different higher education institutions used modern advances. Including web-based systems, computerized decision support, and data-driven computation models. These systems have been successful because they offer and promote important parts of modern academic infrastructures.

Several higher education institutions have implemented grading systems. Using web-based platforms, computerized decision-support tools, and data-driven computation models. These systems have proven effective

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because they improve accuracy, transparency, retrieval efficiency, and security for their users. Institutions adapting from manual to automated grading also report better data management and reduced human errors. Which improves overall operational efficiency of the system. Similar solutions across Southeast Asia shows growing demand for computerized academic services. While many institutions in the Philippines have switched to such innovations, others still struggle with outdated manual methods.

The study aims to evaluate the performance of a recently implemented grading system in the institution. With a focus on its important features intended for instructors as well as students. Key areas of system evaluation include identifying aspects of the grading process that need enhancement. Understanding the objectives and preferences of both administrators and instructors. Enhancing system usefulness and reducing faculty workload. Increasing student engagement and evaluating the system according to ISO 9126-1 criteria. To relate the study in existing literature, research in educational data mining (EDM) emphasized the use of clustering and classification techniques. In order to predict student performance early before the semester ends [4]. Meanwhile, other studies on automated grading systems demonstrate their ability to significantly reduce instructor workload while enhancing student engagement [19]. Based on these studies, the Christ the King College de Maranidng, Inc. - College Department Grading System (CKCM-CGS) is developed to automate grading methods. As well as optimize accuracy and improve accessibility for instructors and students. The main goals of the research problem are assessing the system's efficacy and highlighting possibilities for improvement. To meet institutional needs, this research suggests system optimization and integration enhancements.

LITERATURE

Automated Grading Systems

An informative literature map of strengths and weaknesses is shown in automated college grading systems along with supporting technologies like EDM/ML, NLP, dashboards, and online portals. Automated systems enhance accuracy to students' academic performance, lessen faculty workload in computing and releasing of grades, and provide immediate access to student records [1], [19], [22]. Adaptive dashboards and analytics are also important for student engagement in academic tasks and allow informed decision-making [3], [12], [10]. However, the literature also maps a number of continuing weaknesses because many systems lack robust real-time monitoring and consistent intervention features addressed the struggle with integration and data accuracy problems when sources differ [6], [18], [8]. Deployment scalability/peak-load reliability are poorly addressed in practice [17], [24]. Most importantly, usability, documentation, and clarity remain notable weaknesses because systems that score highly on functionality are still frequently criticized for having insufficient user training, weak manuals, and confusing prediction logic that prevents successful system implementation in institutions.

Machine Learning & EDM Approaches

Feature engineering from online activity logs and machine-learning models such as SVM, Random Forest, and combined methods have improved early warning of at-risk students as well as generated high predictive accuracy for binary pass/fail detection [2], [7], [5]. Automated grading and feedback significantly decrease instructor time while increasing student engagement [19], [11]. Collaborative ML approaches utilized in activity logs increase tracking of struggling students [7]. In addition, many studies proved that generating a high prediction accuracy is possible when datasets are well organized and if classifiers are carefully chosen like SVM and Random Forest [5], [2].

NLP-Based Assessment Systems

NLP-based essay grading and evaluation of open-ended responses continue to show potential in assisting instructors; however, these systems still require human review for borderline or insufficient cases [23], [25]. Even with semantic similarity and NLP-based scoring, open responses continue to generate ambiguous cases that require manual assessment [23], [8]. This emphasized the need for hybrid approaches that maintain human oversight, especially when the model produces uncertain or low-confidence predictions.

Identified Weaknesses & Research Gap

The research gap has been identified by a number of similar issues that emerge. One of them reveals social and technical "breakages" when AGS interferes with standard assessment processes [24]. Other highlighted the lack of constant monitoring and poor data integration [6], [18]. From these findings, the research gap is clear which

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are the need for a highly deployable, scalable grading system. That integrates strong multi-source data integration and cleaning. Hybrid ML/NLP grading with transparent human-in-the-loop review. Real-time dashboards, analytics, and early-warning notifications. Lastly, improved usability, documentation, and explainability to support stakeholder trust. This gap is consistently emphasized across the recent five-year literature.

To address the identified weaknesses the reviewed literature provides specific solution components. Based on these, this study proposes a hybrid technical and human-centered implementation. First, as suggested, to create a data-driven backend like ETL, schema harmonization, and structured datasets to address disorganization and enhance the accuracy of ML input [8], [18]. Second, implement hybrid grading methods where deterministic criteria and NLP/semantic similarity, handle simple cases while an explainable ML classifier (SVM/ensemble) detects inconsistent or weak responses for human control [23], [25], [5]. Third, deploy the system on scalable cloud platforms with caching and load-balancing features to address peak-load issues [17]. Finally, combine these with thorough user training, ISO-aligned documentation, and explanation of models features so stakeholders can trust the outcomes [1], [21]. To put it simply, the implemented solution will combine an ETL/data-warehouse layer and system standards. Hybrid NLP with explainable ML grading with human-in-the-loop moderation. A real-time analytics/dashboard with notifying service. Cloud automatic scaling and caching for reliability. As well as ISO-based usability/documentation and training. This will implement the research gap into a deployable system upgrade that incorporates predictive analytics, strong integration, scalable deployment, transparent evaluation, and faculty training.

OBJECTIVE

The main objective of this study is to assess the implementation of the system's performance based on the ISO 9126-1 software quality model, specifically in terms of functionality, reliability, usability, maintainability, portability, and efficiency, and to evaluate the following:

1. To determine how the implemented grading system improves academic processes, including grade computation, verification, submission, and student access to academic performance
2. To identify challenges or system limitations experienced by faculty, deans, registrar staff, students, and IT personnel during system use
3. To evaluate the impact of the automated grading system on reducing manual workload, minimizing computation errors, and enhancing processing time for grade-related tasks
4. To analyze the system's effectiveness in providing transparency and real-time access to grades for students and supporting informed academic decision-making
5. To propose enhancements and optimization strategies, such as improved documentation, integration capabilities, and performance scalability to strengthen future system development and institutional adoption.
6.

METHODOLOGY

The methodology of this research is detailed including the research environment, research respondents, as well as the research design were discussed.

Research Design

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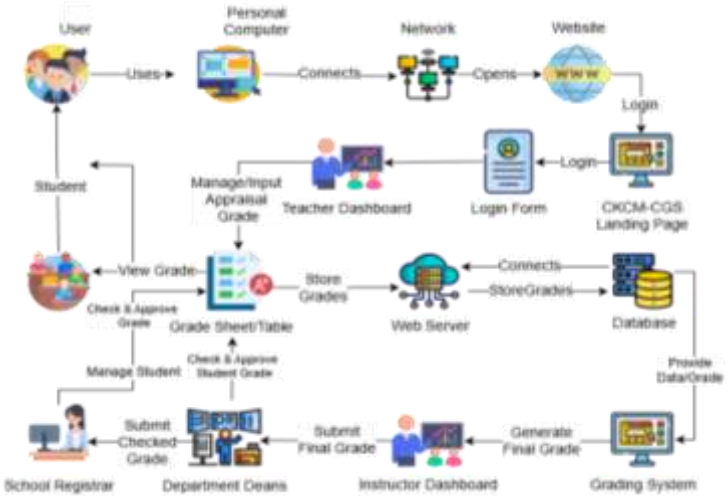

Figure 1. Detailed Design

Department deans had the duty to monitor grading reports, and manage and verify students' grades in accordance with their own programs. The only things instructors could do were enter student scores and the system will generate appraisal results and turn in final grade reports. The registrar head and staff added important information to the Christ the King College de Maranding, Inc. - College Department Grading System (CKCM-CDGS). However, only when the Registrar's head approved and validated them could students access their final grades and tests via the portal.

Architectural Design (SDLC Waterfall Model)

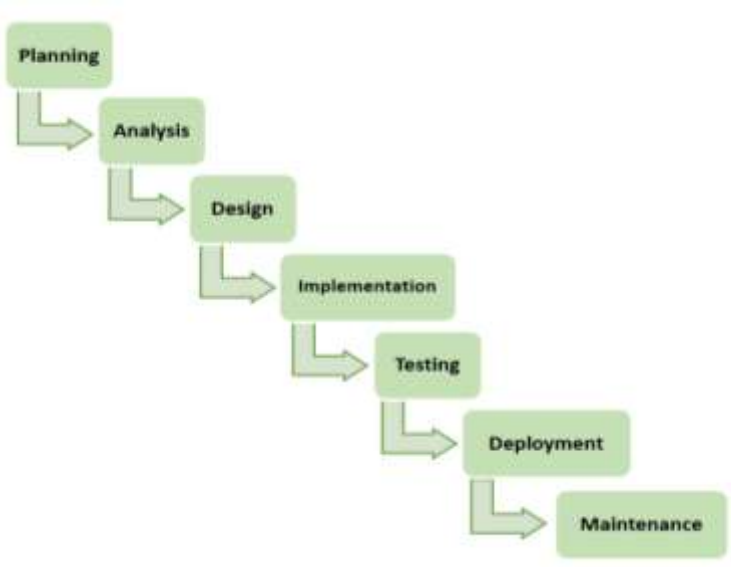

Figure 2. Waterfall Model

The researchers' development of the system was developed using the Waterfall Model. The illustrated waterfall diagram serves as a visual representation of this development process, how activities and results changed at each stage of the software development lifecycle. The system followed a sequential process, with each phase building upon the completion of previous ones. Organized and structured development process was assured with thorough planning, designing, and testing by utilizing this strategy.

The Waterfall Software Development Life Cycle, consists of the following:

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Requirements Gathering. The developers collaborated together with stakeholders inside the institution by conducting meetings, interviews, observations, and demonstration of calculating grades of the current manual grading process to determine their needs and goals. This phase was very important to the waterfall model for the grading system. The requirements were thoroughly documented among all parties involved to understand and identify the issues. Which served as the basis for the following phases, including analysis, design, implementation, testing, and deployment. To make sure the grading system would successfully satisfy the institution's needs, this step received a great deal of attention.

Requirement Analysis. The grading system developed underwent a requirement analysis focusing on stakeholder needs in the institution. To identify essential features such as grade input and reporting, and prioritized non-functional aspects like security and usability, the team used questionnaires, interviews, and document reviews. This is useful for a structured requirements document which serves as a guide to the software development phases. The team utilized a complete software stack, such as MySQL or PostgreSQL for database management, HTML and CSS for front-end design, JavaScript for interactivity, and PHP frameworks like Laravel or Symfony to ensure compatibility with Windows 7 to 10. As well as hardware specifications which included quad-core CPUs, RAM, SSD storage, fast internet, and cloud maintenance from AWS S3 or Google Cloud Storage. The top priority during the design phase were the system structure, user interaction, and educational grading criteria, and wireframes and prototypes were used to improve user experience, and server security was ensured by air conditioning and an Uninterruptible Power Supply (UPS).

System Design. In the design phase of the system, the development team focused on organizing system features and user interaction. This involved evaluating the requirements for grading methods, creating useful wireframes and prototypes, and selecting appropriate and compatible technologies for scalability and integration. Thorough documenting of specifications and procedures was necessary to guide the development team and stakeholders and create a strong foundation for the following phases.

Hierarchical Input-Process Output (HIPO)

The HIPO model (Hierarchy plus Input-Process-Output) is a systematic approach that significantly helped the developers in the analysis and design of a college grading system as it is used as a methodical framework addressing both functional and non-functional requirements to create a dependable and scalable system. It also outlines the hierarchical layers of the system, providing structured steps to understand operational processes, illustrating how system components interact, identifies opportunities for improvements and inefficiencies by analyzing complexity, allowing the system’s design to be clearly visualized. It also assesses procedural components such as role allocations, administrative duties, student grade evaluations, grade calculations, record keeping, and report generation for final grades.

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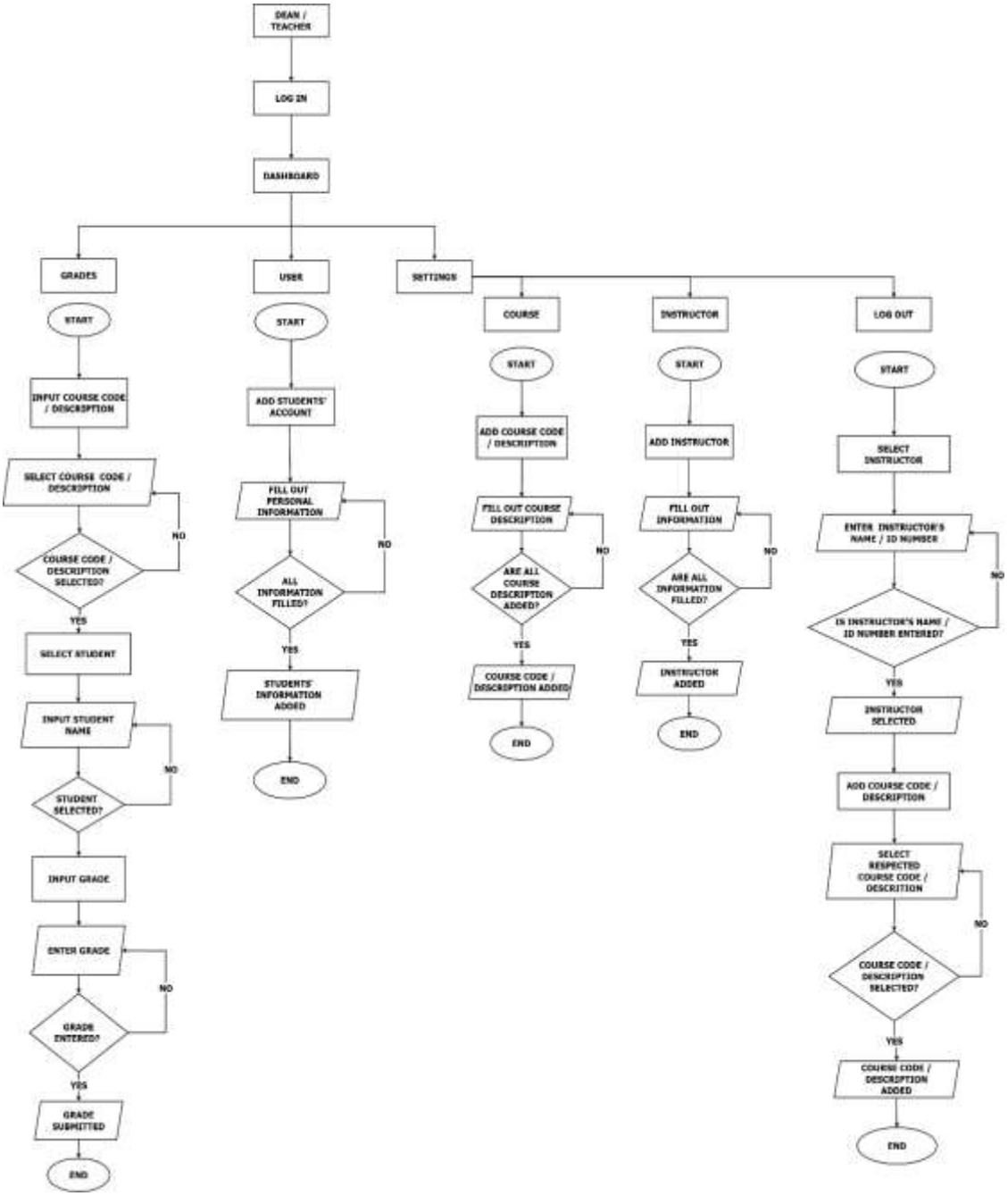

Figure 3. Hierarchical Input-Process Output (HIPO) Department Dean Page

In figure 3, the structure and functional data flow of the Christ the King College de Maranding - College Department Grading System is shown in the HIPO diagram from the point of view of the dean.It starts with a secure log-in, which leads to a dashboard that streamline specified system functions of a dean. The Settings function maintains configurations and guarantees data integrity. The Grades function permits the instructors to input student scores and generate final grades with the required criteria. A safe way out is offered in the Log Out feature to secure their information. Generally, the graphic improves usability for academic staff by helping to visualize processes of the system features based on their respective roles, it also spots inefficiencies, and guarantee strict guidelines to institutional policies.

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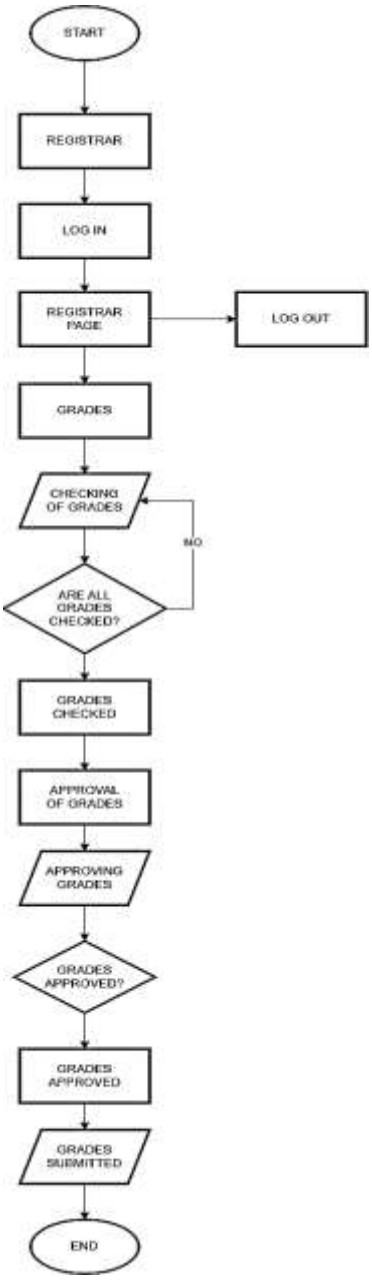

Figure 4. Hierarchical Input-Process Output (HIPO) Registrar Page

In figure 4, the flowchart serves as a guide step intended for administrators to log in, review submitted grades from instructors, and approve student grades. Only the authorized users can access this feature, navigate a dashboard to view organized grades by courses and semesters, and must review all grades for accuracy before submission to a centralized database. The process ends with a secure logout, making sure of the protection of student information and supporting a transparent grading process following educational standards.

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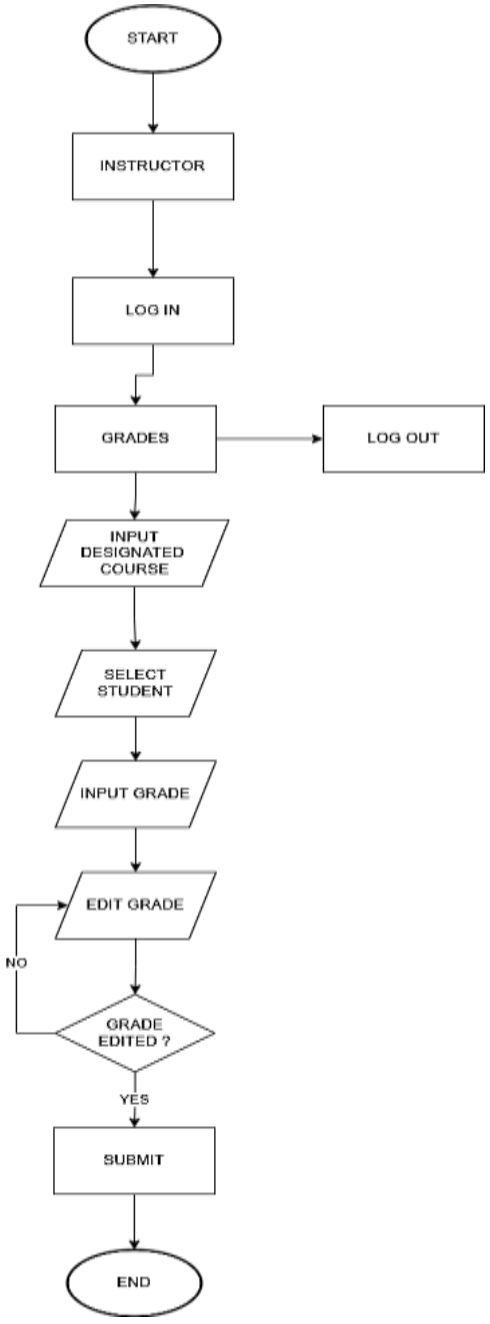

Figure 5. Hierarchical Input-Process Output (HIPO) Instructor

In Figure 5, the processes that instructors have to follow to be able to manage and submit student grades is shown in this flow chart. The instructor must log in the system first and navigate the main dashboard to begin the process. For them to input the grade, the instructor then picks a course containing a student list. Before the final submission, the grade can be updated using a review prompt. The instructor must validate the accuracy of the grade from each student for the submission of final grades to the program deans. After submitting, the grade is securely stored in the system's database after final submission and can only be accessed by permitted staff such as system admin (MIS staff), Registrar head and staff, and respective program head or dean, safeguarding the accuracy and confidentiality of student information.

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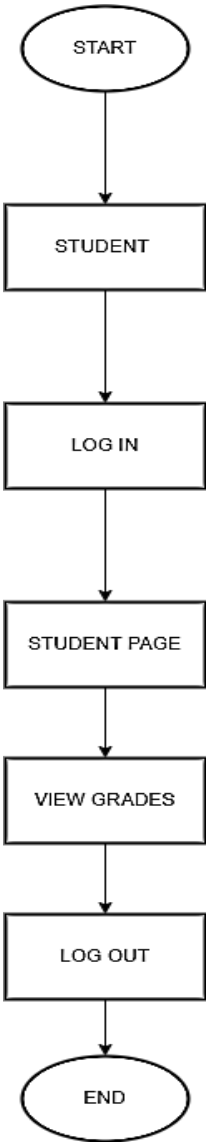

Figure 6. Hierarchical Input-Process Output (HIPO) Student

In figure 6, the flowchart illustrates a simple student process starting with a login feature in a school portal for secure access. Once logged in, students can access their personal dashboard for grade viewing per course enrolled to evaluate their performance. The steps, which ends with a data safety logout, shows the value of user-friendly interfaces improving the academic experience of students.

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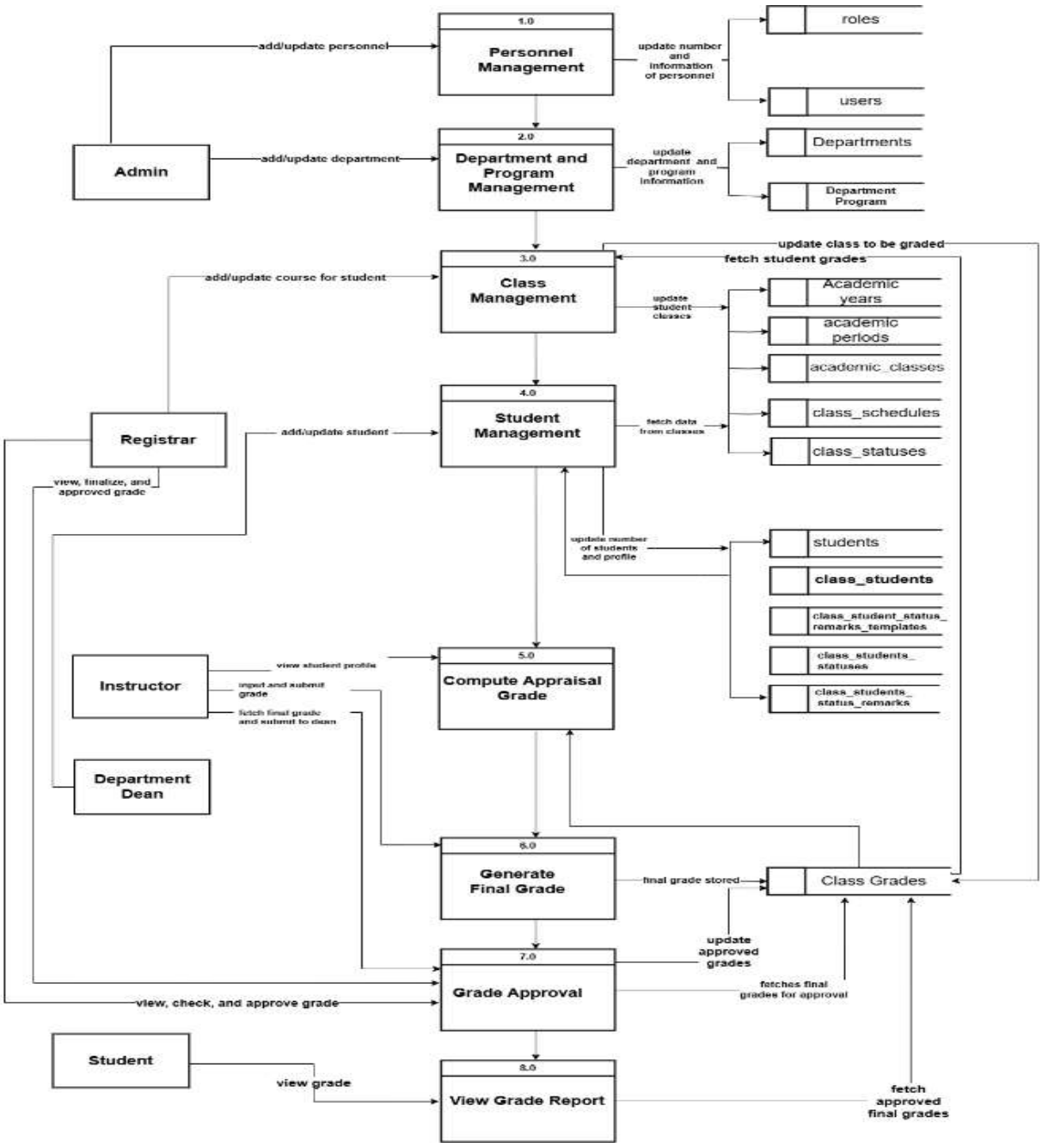

Figure 7. Data Flow Diagram

The Data Flow Diagram (DFD) demonstrates the complex flow of information across the entire system. The admin user from MIS Office integrates into management sections. Instructors manage grading criteria and student scores, and checks generated final grades then submit them for review. These submissions are partially evaluated and validated by the Dean to ensure accuracy and compliance for the sake of their students' fair performance. The Registrar is responsible for overseeing the management of entire submitted grades from each program for final approval, ensuring proper linkage to student and class records. Approved grades are stored and made accessible for report generation, allowing insights into academic performance. Generally, the DFD illustrates the system's efficiency in enhancing academic management at the college department.

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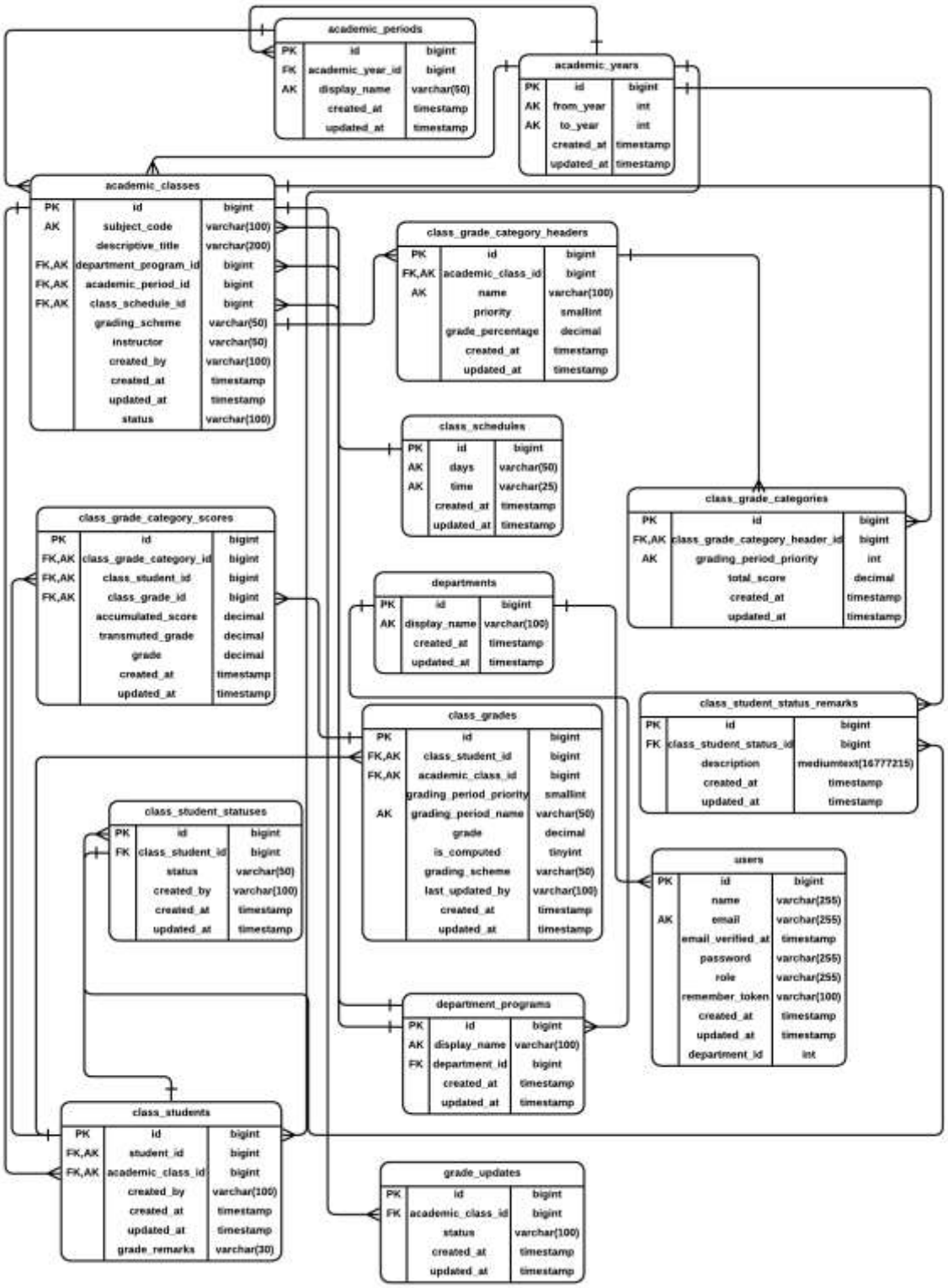

Figure 8. Entity Relationship Diagram

In figure 8, the database relationships of the grading system are shown where courses are represented by the main class object. It contains a number of tables intended for the entire database of the system. Department

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programs table for academic offers along with specific school year and semester, department for college divisions, and users for system users including students, instructors and administrators are examples of additional entities. The grading system's components and their relationships are illustrated in the Entity-Relationship Diagram (ERD), which improves the visual of how it works.

Implementation. One of the most important phases in developing a college grading system is the implementation phase where software coding was based on design specifications, utilizing Visual Studio Code as the key code editor.HTML was one of the foundations for web page structure and user interface creation, CSS improved design and responsiveness, JavaScript added interactivity and facilitated server communication, and MySQL was used as a database management system. It is known for its reliability and strong security features, providing easy data management and integration with online applications, while Node.js was utilized as a cross-platform runtime for applications that operate in real time.

Testing. The testing phase of the college grading system focused on validating its efficiency, reliability, and functionality, before the academic integration. Using methods including modules, integration, and system testing to find flaws, and errors. Thorough testing includes score recording, grade computation accuracy, performance tracking, data analysis, and reporting; while scaling and cyber-security protection were also assessed through performance, load, and security testing. The system's reliability and efficiency of enhancing academics. In the final deployment phase of the college grading system, key activities included infrastructures, and verified by user testing approval.

Deployment. In the deployment phase of the college grading system, key activities included system integration, customization for academic needs, and compatibility checks with existing IT systems. The phase involved rigorous testing and training for staff. A detailed rollout plan transitioned to advanced grading practices while emphasizing data migration and customization. The approach ended in an evaluation that used input from instructors as well as learners to address operational issues to ensure that the system satisfied the changing requirements of academic assessment.

Maintenance. The maintenance phase of the grading system was vital for its long-term functionality and adaptability in the institution which required continuous system examinations for improvements, modifications to user interface, adding new features in response to feedback and trends, and monitoring to ensure effectiveness and meet changing requirements. This proactive approach supported academic excellence by maintaining a reliable and evolving grading infrastructure.

Evaluation

The evaluation used the ISO 9126-1 Quality Model by the participation of the respondents of the research study such as Department Deans, Registrar's Office Staff, Instructors, Students, and IT Professionals, which measures:

Functionality. The system consistently completes its intended functions and enables the access and management of academic performance data for instructors as well as students, and demonstrates all necessary functions required by a grading system, including accurate grade computation, class management, immediate grade updates, and integration with academic databases.

Reliability. The system operates smoothly without constant glitches, maintaining its reliability by providing stable performance and precise assessments based on defined learning outcomes and grading criteria. It also consistently generates reliable and accurate results, with minimal errors and correctly computed score and final grades. It also operates smoothly without frequent glitches, maintaining its reliability by delivering stable performance and precise assessments based on defined learning outcomes and grading criteria.

Usability. The system is developed to be easy to use and convenient. Its responsiveness, clear labeling, and simple interface made sure that users with basic skills of technological proficiency can do their jobs without difficulty. It maintains an attractive and well-organized user experience, it was also made to be seamless for transitions between functions, and offers helpful instructions.

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Maintainability. The system is designed for long-term maintenance, including upgrades, debugging, modifications, as well as clear documentation, modular design, safe data management, and suitable version control. This guarantees that modifications may be done without affecting the whole system, preventing the data at risk, and allowing it to seamlessly adjust to future requirements of the institution.
Portability. The system supports devices, like tablets, smartphones, laptops, and desktop devices that integrate with other educational systems, and allows safe data sharing which may be used both on and off campus. Updates can be made without compromising key features, providing adaptable and practical access.
Efficiency. The system reduces the time for faculty to input and calculate grades, efficiently manages large volumes of student data during peak periods, and provides timely access to student performance data. It integrates moderately well with existing student information systems, but is viewed by students as only slightly efficient in delivering clear and timely feedback on their academic progress.

Instrumentation

A standardized ISO 9126-1–based questionnaire measured software quality using a 5-point Likert scale. Additional interviews and system usability observations were conducted.

Data Analysis

Weighted mean and descriptive interpretation were used to evaluate each software quality attribute.

RESULTS AND DISCUSSION

This chapter presents quantitative and qualitative findings based on user evaluation.

System Evaluation: ISO 9126-1 Standard Model

Statement	Mean	Interpretation
1. The grading system should consistently reflect the students' true performance and learning outcomes.	4.27	Very Effective
2. The system should accurately calculate grades based on the predefined criteria and weightages	3.97	Effective
3. The system towards frequency of errors or discrepancies is minimal.	4.10	Effective
4. The system should inspire trust among faculty and students by ensuring fairness and accuracy in evaluating academic performance.	3.97	Effective
5. The grading system functions without technical issues or downtime, ensuring grades are processed and recorded accurately	4.00	Effective
Average	**4.06**	**Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 1, Reliability System Evaluation

Reliability – 4.06 (Effective)

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Statement	Mean	Interpretation
1. The grading system's navigation should be intuitive and allows users to easily switch between different functionalities such as entering grades, viewing student records, and generating reports.	4.27	Very Effective
2. The system user interface design should be clean and organized, with clearly labeled menus and icons. However, some sections require multiple clicks to access specific features, slightly affecting efficiency.	3.97	Effective
3. The system should accommodate users with varying levels of technological expertise, offering clear instructions and help options where needed.	4.20	Very Effective
4. The system should respond quickly to user inputs and updates data in real-time, ensuring that grading and administrative tasks can be completed efficiently without delays.	3.97	Effective
5. The system should provide informative error messages that guide users effectively on resolving issues. However, the system occasionally experiences technical glitches during peak usage times, which negatively impact the overall user experience.	3.90	Effective
Average	**4.06**	**Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 2, Usability System Evaluation

Usability – 4.06 (Effective)

Statement	Mean	Interpretation
1. The system accurately calculates and displays final grades based on entered assessment scores.	4.17	Effective
2. The system should enable students to easily access their current grades and overall academic performance, providing them with a user-friendly and efficient platform for academic monitoring.	4.23	Very Effective
3. The system allows instructors to upload course materials such as lecture notes and assignments efficiently.	4.30	Very Effective
4. The system supports real-time updates and notifications for students regarding changes in course schedules or grading policies.	4.07	Effective

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5. The system facilitates easy integration with existing academic databases and administrative systems.	4.30	Very Effective
Average	**4.21**	**Very Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 3, Functionality System Evaluation

Functionality – 4.21 (Very Effective)

Statement	Mean	Interpretation
1. The system architecture and code structure are well-documented and follow industry standards, making it easy to understand and update.	4.20	Very Effective
2. The system has occasional comments in the code, but some parts lack clarity, requiring extra effort to comprehend during updates.	3.90	Effective
3. The system has a modular design, allowing individual components to be modified or replaced without affecting the entire system.	3.97	Effective
4. The system's documentation is sparse, and there's a high dependency on specific team members' knowledge for system maintenance.	3.97	Effective
5. The system lacks version control, and changes are often made without proper tracking or rollback capabilities.	4.07	Effective
Average	**4.02**	**Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 4, Maintainability System Evaluation

Maintainability – 4.02 (Effective)

Statement	Mean	Interpretation
1. The grading system can be easily accessed and used across different devices (e.g., desktop computers, laptops, tablets, smartphones).	4.27	Very Effective
2. The system allows for seamless integration with other educational management systems used by the college.	4.03	Effective
3. The system is designed to ensure that students and faculty can easily access it from various locations,	3.97	Effective

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whether on or off-campus.		
4. The grading system's data can be securely transferred and accessed across different platforms and operating systems.	4.00	Effective
5. The system should allow updates and modifications to be implemented seamlessly, ensuring minimal disruptions to its availability and functionality.	3.97	Effective
Average	**4.05**	**Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 5, Portability System Evaluation

Portability – 4.05 (Effective)

Statement	Mean	Interpretation
1. The College department grading system effectively reduces the time required for faculty to input and calculate grades.	4.37	Very Effective
2. The grading system efficiently handles a large volume of student data during peak periods, such as end-of-semester grading.	4.10	Effective
3. The system is regarded by faculty members as highly efficient in delivering timely access to student performance data.	4.20	Very Effective
4. The system moderately efficiently integrates with existing student information systems for seamless data exchange.	3.93	Effective
5. The system is perceived by students to be slightly efficient in delivering clear and timely feedback regarding their academic progress.	4.10	Effective
Average	**4.14**	**Effective**
Note: 5-4.2 Very Effective; 4.19-3.5 Effective; 3.40-2.7 Fairly Effective; 2.6-1.9 Minimally Effective; 1.8-1.0 Not Effective		

Table 6. Efficiency System Evaluation

Efficiency – 4.14 (Effective)

DISCUSSION

The implementation of the grading system successfully improved academic operational workflows within the institution. Instructors no longer need to compute grades manually. Registrar staff can quickly validate and approve grade entries. Students are also able to access their grades immediately after approval of their Program Deans, and Registrar Staff, promoting transparency and reducing problems since the system generates grade reports accurately. However, despite these enhancements, the institution still faces minor challenges like system

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load issues during peak times and a limited number of IT staff intended for maintenance. In summary, the system proved very helpful to the institution because it automates grade calculations accurately, minimizes manual errors, reduces workload and processing time, and provides well-organized class records each semester of the school year. All respondents consistently rated the system as "Effective" and "Very Effective," while students benefit from real-time grade access, increased transparency and fairness, and improved academic self-monitoring, which passed the standardized ISO 9126-1 Quality Model.

The findings of the study addressed the research gap noted in the literature. The technology produces grade reports, shows accurate grade computation, and gives students transparent access. In contrast to many of the reviewed automated grading systems, which frequently have issues with real-time analytics, scalability, and integration [6], [17]. However, small problems still exist, like peak-time load. The solution incorporates important advantages from earlier studies, such as user-centered design, real-time dashboards, and precise ML-based computations. It successfully closes gaps in operational effectiveness, usability, and transparency. By integrating automatic correctness, faculty workloads, and instant student access. The system offers a more complete solution as compared to solutions addressed in the literature. Minimizing common flaws while adhering to best practices in EDM/ML-enhanced grading systems.

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CONCLUSION

The development and implementation of College Department Grading System in Christ the King College de Maranding, Inc. have successfully improved accessibility to grades because of its streamlined grading processes, and guaranteed accurate assessments of student performance. The users can effectively monitor and track grades according to its integrated application that encourages a more structured and open approach. Despite of minor issues that still remain. Such as limited documentation that made troubleshooting and independent updates difficult for users. As well as occasional technical glitches during peak grading periods which slightly impacted reliability. Therefore, relying on a limited number for system updates is also risky. Resolving these concerns is necessary to boost system usability and sustainability in the institution. The system may better assist instructors, students, and administrators by improving documentation, eliminating errors, and enabling collaborative modifications based on the user's continuous feedback.

Based on the findings and conclusions, the researcher recommends future improvements of the system. Focusing in maintainability, integration, functionality, and user experience. In order to adopt a modular approach with version control that allows updates to each component without affecting the entire system. Attendance and course management systems, streamline administrative processes and improve operational efficiency must be integrated further by institutional platforms. Real-time notifications for grading activities and the inclusion of Latin honors and department-specific awards can increase transparency, engagement, and personalized recognition of student achievement. For Registrar's end, aligning the system with more inclusive student management system will enhance administrative operations, increase data accuracy, and make CHED submissions easier. Finally, improving the user interface and continuous usability tests will simplify navigation, cut down on steps for important tasks, for better overall experience for all system users.

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