Internship Monitoring and Record Management System For St. Clare College of Caloocan

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ABSTRACT

This study focused on the development of an Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan to address the inefficiencies of the existing manual internship process. The traditional system was found to be time-consuming, prone to errors, and lacked centralized monitoring, resulting in difficulties in attendance tracking, document management, and communication.

A quantitative research method was used, involving pre-survey and post-survey questionnaires distributed to student interns. The pre-survey results revealed major issues such as time-consuming submission of requirements and difficulty in receiving updates, both with a weighted mean of 4.60, indicating strong agreement among respondents.

The developed system includes features such as digital attendance (QR-based DTR), automated hour tracking, online document submission, centralized records management, real-time notifications, and report generation.

Post-survey results showed significant improvement, with respondents strongly agreeing that the system made internship monitoring easier (4.72) and improved overall efficiency. Additionally, user satisfaction was very high, with an overall system performance rating of 4.90, indicating that the system met and exceeded user expectations.

The findings conclude that the IMMS is an effective, reliable, and user-friendly solution that enhances internship monitoring, improves efficiency, and provides a centralized platform for managing internship records.

PROBLEM AND ITS BACKGROUND

Background of the Study

On-the-Job Training (OJT), also referred to as internship, is an essential academic requirement at St. Clare College of Caloocan that provides students with practical experience through assigned work environments relevant to their field of study. It serves as a bridge between theoretical knowledge acquired in the classroom and the practical skills needed in professional and institutional settings. Through internship and institutional deployment programs, students develop technical competencies, work ethics, communication skills, and practical experience that prepare them for future employment opportunities and academic completion requirements.

The implementation of internship programs in higher education institutions is guided by CHED Memorandum Order No. 104, s. 2017, which establishes the Student Internship Program in the Philippines (SIPP). This policy emphasizes the importance of providing students with relevant and quality practical training, as well as ensuring proper monitoring, documentation, and evaluation of student performance. It also outlines the responsibilities of higher education institutions, host training establishments, and student interns in maintaining accountability, safety, and alignment of internship activities with academic objectives.

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Currently, the internship monitoring and documentation process at St. Clare College of Caloocan is handled manually through physical logbooks, Daily Time Records (DTRs), and printed accomplishment reports. Students are required to manually record their attendance and daily activities, which are then verified and signed by company supervisors before submission to the school's internship coordinators for review and assessment. However, manual processes often lead to inefficiencies such as delayed submissions, inaccurate or incomplete records, misplaced documents, difficulties in verifying actual student attendance, and lack of transparency in monitoring internship progress. According to several studies, traditional paper-based internship monitoring systems increase the risk of human error, reduce accountability, and create challenges in record retrieval and long-term data management (Nurfaizi & Hindarto, 2023; Bartolome et al., 2025).

In response to these challenges, this study proposes the development of an Internship Monitoring and Management System (IMMS), a web-based platform designed to digitize and automate the entire internship and institutional deployment management process. The proposed system will provide a centralized digital platform where students, assigned supervisors, and academic coordinators can efficiently manage deployment-related activities and records. The system integrates QR code-based attendance monitoring with photo verification to improve attendance authenticity and validation of student presence during assigned duty hours. It also includes automated approval workflows that allow supervisors and coordinators to review and approve attendance records, daily task submissions, uploaded documents, and performance evaluations electronically.

Furthermore, the system features real-time dashboard monitoring, enabling coordinators and supervisors to efficiently track student attendance, deployment progress, pending approvals, and overall performance metrics through an interactive interface. Automated notifications and status updates are also integrated to improve communication among stakeholders and ensure timely submission and review of deployment requirements. By implementing role-based access control, the system ensures that users can securely access only the functionalities relevant to their designated responsibilities.

The proposed Internship Monitoring and Management System aims to improve efficiency, transparency, accountability, and accuracy in managing student deployment programs by replacing outdated manual procedures with a modern, centralized, and automated digital solution. Studies have shown that digital monitoring and academic management systems significantly reduce administrative workload, improve operational efficiency, and enhance transparency in educational institutions through centralized data management and automated workflows (Barrocan et al., 2025).

Statement of the Problem

The current student deployment monitoring process at St. Clare College of Caloocan remains largely manual and paper-based, relying on physical logbooks, Daily Time Records (DTRs), printed accomplishment reports, and handwritten supervisor validations. While this traditional process has been the standard practice for managing internship, on-the-job training, and institutional requirement hours, it presents several operational challenges, including delays in submission and approval, difficulty in verifying the actual presence of students during assigned duty hours, inconsistent communication among stakeholders, and challenges in tracking student progress efficiently. Furthermore, the lack of centralized reporting and digital record management makes monitoring, retrieval, and long-term storage of deployment records inefficient and prone to human error.

This study aims to address these challenges by developing an Internship Monitoring and Management System (IMMS), a web-based platform designed to automate and centralize student deployment management processes through digital attendance monitoring, approval workflows, dashboard-based tracking, reporting, and communication tools.

General Problem

How can a web-based Internship Monitoring and Management System (IMMS) be designed and developed to improve the efficiency, accuracy, transparency, and overall management of student deployment monitoring processes at St. Clare College of Caloocan?

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Specific Problems

Specifically, this study seeks to answer the following questions:

1. What challenges exist in the current internship monitoring process in terms of:
   a. Recording student attendance, daily tasks, and internship accomplishments manually;
   b. validating the actual presence of students during their assigned duty hours;
   c. Delays in approval workflows between company supervisors and internship coordinators;
   d. Monitoring student internship progress and completion in real time;
   e. Communication gaps between students, supervisors, and coordinators; and
   f. Managing, retrieving, and storing internship-related records efficiently?

2. How can a fully digital, web-based Internship Monitoring and Management System be designed and developed to:
   a. Enable students to record attendance using QR code-based monitoring with photo verification;
   b. Allow students to submit daily tasks, accomplishment reports, and required documents digitally;
   c. Allow assigned supervisors to validate attendance records, approve submissions, and submit evaluations online;
   d. Allow coordinators to monitor student progress and pending approvals through dashboard-based monitoring;
   e. Implement automated approval workflows for submissions, validations, and evaluations; and
   f. Provide centralized and secure storage of deployment-related records?

3. How effective is the proposed system in terms of:
   a. Usability;
   b. Accessibility;
   c. Security; and
   d. Reliability?

4. How can integrated system features improve communication, monitoring, and reporting through:
   a. automated notifications and alerts;
   b. dynamic dashboard monitoring;
   c. centralized reports and analytics; and
   d. audit logs for user activity tracking?

5. How can the proposed system enhance the overall efficiency and transparency of student deployment monitoring by consolidating attendance tracking, approval workflows, evaluation management, communication, and reporting into a centralized digital platform?

Objective of the Study

The primary objective of this study is to design and develop an Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan that automates and centralizes the internship monitoring and record management process through digital tools and real-time monitoring capabilities.

General Objective

To develop a web-based Internship Monitoring and Management System (IMMS) that improves the efficiency, transparency, accuracy, and accessibility of internship and institutional requirement monitoring at St. Clare College of Caloocan.

Specific Objectives

Specifically, the study aims to:

1. Identify the common problems encountered by student interns in the current manual internship process in terms of attendance monitoring, requirement submission, communication, progress tracking, and record management.

2. Develop a QR code-based attendance system that allows students to record their attendance faster, more accurately, and conveniently.

3. Implement an online document submission feature that enables students to upload internship requirements digitally and reduce the risk of lost or misplaced files.

4. Create an automated rendered-hours tracker that helps students monitor completed and remaining internship hours in real time.

5. Integrate a notification system that provides students with updates, reminders, announcements, and approval status regarding internship activities.

6. Develop a student dashboard that displays attendance records, submitted documents, rendered hours, pending requirements, and internship progress.

7. Provide coordinators and supervisors with tools to review attendance, validate documents, and monitor student internship performance efficiently.

8. Enhance transparency, accessibility, and convenience in managing internship records through a centralized digital platform.

9. Evaluate the developed system in terms of usability, accessibility, reliability, efficiency, and overall satisfaction of student users.

Scope and Delimitations of the Study

Scope of the Study

This study focuses on the design and development of an Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan that aims to digitize and automate the institution's manual internship and institutional requirement monitoring process. The proposed system provides a centralized, web-based platform for students, supervisors, and coordinators to efficiently manage attendance, task submissions, evaluations, records, and monitoring activities related to academic duty requirements.

The system consists of three major role-based modules: the Student Module, Supervisor Module, and Coordinator Module. The Student Module allows students to record attendance through QR code-based scanning, submit daily tasks and accomplishment reports, upload required documents, and monitor progress through a personalized dashboard. The Supervisor Module enables supervisors to validate attendance records, approve submitted tasks, evaluate student performance through a digital scoring system, and provide feedback electronically. The Coordinator Module serves as an administrative dashboard that allows coordinators to oversee attendance records, monitor student progress, review pending approvals, and manage records efficiently. Although the system supports three user roles, student interns serve as the primary operational users, as the core system processes such as attendance tracking, progress monitoring, document submission, and performance evaluation are centered on their internship activities.

Additionally, the system includes integrated features such as role-based dashboards, automated approval workflows, notification systems, evaluation and grading modules, reporting and export functions, audit logging mechanisms, and an AI Assistant feature. The AI Assistant is designed to provide users with guided access to relevant system information by responding to queries based only on authorized records stored in the system database and predefined system knowledge. Its purpose is to assist users in quickly retrieving information such as attendance summaries, progress updates, pending requirements, approval statuses, and other relevant monitoring details according to their assigned access level.

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The system is web-based and accessible through desktop computers, laptops, tablets, and mobile browsers with internet connectivity. It is designed with responsive functionality to support multiple screen sizes and provide convenient accessibility across devices. To maintain data privacy and security, the system implements role-based access control and centralized database storage, ensuring that users may only access functionalities relevant to their designated responsibilities.

The evaluation of the developed system will focus on its usability, accessibility, reliability, security, and overall effectiveness in improving internship and institutional requirement monitoring processes compared to the institution's current manual procedures.

Delimitation of the Study

This study is limited to the internship and institutional requirement monitoring processes officially recognized by St. Clare College of Caloocan and is intended solely for academic and institutional use within the organization. The system is designed to support students, supervisors, and coordinators involved in managing attendance, task submissions, evaluations, records, and monitoring activities related to internship and institutional academic requirements. Although the system supports three user roles, student interns serve as the primary operational users, and the evaluation of the developed system mainly focuses on student interaction, usability, and overall user experience.

While the system includes QR code-based attendance monitoring with photo verification, it does not implement biometric authentication, facial recognition, or artificial intelligence-based identity verification technologies for user authentication and attendance validation.

The proposed system is strictly web-based and does not include a standalone mobile application for Android or iOS platforms. Although the system supports dynamic updates through AJAX polling mechanisms, it does not implement WebSocket-based real-time communication technologies, and all updates rely solely on periodic data refresh processes. System functionality also depends on the availability of stable internet or local network connectivity.

The AI Assistant feature is limited to retrieving and presenting information based only on authorized system records stored in the database and predefined system knowledge. It is intended to assist users in accessing monitoring-related information more conveniently and does not function as an independent decision-making system. It does not replace official evaluation, approval, or administrative judgment by supervisors and coordinators. The AI Assistant is also limited to the scope of data made available within the system and does not access external websites, third-party platforms, or unrestricted online information sources.

Furthermore, the study excludes integration with payroll systems, Human Resource Information Systems (HRIS), third-party enterprise software, and other external institutional databases. Administrative functions unrelated to academic monitoring, such as payroll computation, salary tracking, employee management, and financial processing, are beyond the scope of this study.

Advanced enterprise-level security implementations such as intrusion detection systems, automated cloud backup solutions, end-to-end encryption, multi-factor authentication, and advanced cybersecurity frameworks are likewise excluded from this version of the system. Compatibility testing is limited to commonly used modern web browsers and standard desktop or mobile devices.

Additionally, this study does not cover long-term institutional deployment, enterprise-scale production implementation, or post-deployment maintenance evaluation beyond system testing, pilot implementation, and academic demonstration.

The proposed system is intended to serve as a functional academic platform and proof of concept for improving internship and institutional requirement monitoring processes, with potential future enhancements including mobile application development, biometric verification, expanded artificial intelligence capabilities, and broader third-party system integration.

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Significance of the Study

The development of the Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan holds significant value for the institution and all stakeholders involved in internship and institutional requirement programs. By transforming traditional manual and paper-based monitoring procedures into a centralized, automated, and web-based digital platform, the system aims to improve efficiency, transparency, accessibility, accountability, and accuracy in managing internship-related activities and records. The following stakeholders are expected to benefit from this study:

1. Students

This study benefits students by providing a more convenient, efficient, and accurate method of recording attendance, submitting tasks, and monitoring their internship or institutional requirement progress. Through QR code-based attendance with photo verification, students can record attendance more securely and accurately while minimizing discrepancies in time tracking. The system also enables students to monitor completed hours, submission statuses, evaluations, and pending requirements through a personalized dashboard. Automated notifications further help students stay informed regarding deadlines, approvals, and important academic updates.

2. Supervisors

Supervisors will benefit from an efficient digital validation and evaluation platform that eliminates the need for physical logbooks and manual signatures. The system allows supervisors to validate attendance records, approve daily task submissions, provide evaluations, and submit grading electronically. Automated notifications and approval workflows help supervisors manage pending validations more effectively while ensuring consistent and transparent monitoring of student performance.

3. INTERNSHIP Coordinators and Academic Staff

Internship coordinators and academic staff will benefit from a centralized and organized monitoring platform that enables dynamic tracking of student attendance, progress, pending approvals, and evaluation statuses through dashboard analytics. The system reduces administrative workload by automating validation workflows, report generation, and record management. It also enables coordinators to generate reports and analytics for attendance, evaluations, and student performance, thereby improving decision-making and oversight of internship-related activities.

4. The Institution (St. Clare College of Caloocan)

The study supports the institution’s digital transformation initiatives by replacing outdated manual monitoring procedures with a modern and automated digital solution. Through centralized record management, role-based access control, audit logs, and secure data storage, the institution can enhance operational efficiency, strengthen data security, improve record transparency, and maintain accurate documentation of internship and institutional requirements. The system also enhances institutional credibility by modernizing academic monitoring processes and improving coordination among departments.

5. Future Researchers

This study serves as a valuable reference for future researchers who aim to develop, improve, or expand internship monitoring systems, academic management platforms, or digital record management technologies. It provides insights into the implementation of QR-based attendance systems, automated approval workflows, dashboard analytics, notification systems, and audit logging features that may inspire future enhancements such as mobile applications, biometric attendance, or artificial intelligence integration.

6. Departments and Program Administrators

Academic departments and program administrators will benefit from improved organization and monitoring of student internship and institutional requirement compliance. The system enables departments to maintain

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accurate records of student participation, monitor completion rates, and efficiently oversee program implementation. This promotes better coordination between departments and ensures compliance with academic requirements and institutional standards.

Definition of terms

Internship / On-the-Job Training (OJT) – An academic program that allows students to gain practical work experience in a real workplace environment where they apply classroom knowledge, develop professional skills, and complete required training hours.

Institutional Requirement Hours – Required duty or service hours assigned by the institution as part of academic compliance, student development, or graduation requirements.

Internship Monitoring and Record Management System (IMMS) – A web-based system developed for St. Clare College of Caloocan that manages internship attendance, task submissions, evaluations, records, and monitoring processes through a centralized digital platform.

Web-Based System – A software application accessed through an internet browser without requiring installation on a local device.

Centralized Database – A structured digital storage system where records, transactions, and user information are securely stored and managed in one location.

Role-Based Access Control (RBAC) – A security method that limits system access based on the responsibilities of each user role such as student, supervisor, or coordinator.

Student Module – The part of the system where student interns can record attendance, submit daily tasks, upload documents, monitor rendered hours, and track internship progress.

Supervisor Module – The part of the system used by company supervisors to monitor assigned students, review attendance records, evaluate performance, and manage submitted daily logs.

Coordinator Module – The administrative section of the system used by coordinators to oversee internship operations, manage users, verify documents, monitor progress, and generate reports.

QR Code Attendance Monitoring – A digital attendance process that uses Quick Response (QR) codes for recording student time-in, lunch out, lunch in, and time-out.

Photo Verification – A feature that captures a student image during attendance scanning to support attendance authenticity and presence validation.

Attendance Record – A digital log containing student time-in, break times, time-out, status, and date of attendance.

Daily Time Record (DTR) – A record showing attendance entries and total hours rendered by a student during internship or institutional duty.

Daily Logs / Task Submission – A digital report submitted by students containing completed tasks, accomplishments, descriptions, and supporting images for a specific duty day.

Approval Workflow – A system process where submitted attendance, logs, documents, or evaluations are reviewed and approved or rejected by authorized users.

Document Verification – The process of checking and validating uploaded student requirements such as endorsement letters, waivers, resumes, or other required files.

Dashboard – A visual interface that displays summaries such as attendance status, rendered hours, pending approvals, notifications, and progress indicators.

Progress Monitoring – The process of tracking student completion status, rendered hours, attendance consistency, and internship performance.

Evaluation Module – A feature where supervisors assess student performance using criteria such as attendance, professionalism, communication, and work quality.

Notification System – A feature that sends alerts or updates regarding approvals, rejections, missing requirements, attendance reminders, or announcements.

Reports Generation – The automated creation of summaries such as attendance reports, hours rendered reports, evaluation summaries, and downloadable documents.

PDF Export – A feature that converts reports or records into Portable Document Format for printing or submission.

Audit Log – A system-generated history of important user actions such as logins, approvals, edits, deletions, and administrative changes.

Responsive Design – A web design approach that allows the system interface to adjust properly across desktop, tablet, and mobile screens.

AJAX Polling – A web technique used to periodically refresh system data without reloading the whole page, giving near real-time updates.

Session Authentication – A login security process that maintains user access only while an authorized session remains active.

AI Assistant – A built-in support feature that answers user queries using authorized database records and predefined system knowledge based on the user's access level.

Usability – The degree to which the system is easy to learn, easy to use, and efficient for intended users.

Accessibility – The ability of users to conveniently access and use the system across supported devices and browsers.

Reliability – The ability of the system to consistently perform its intended functions without failure.

Security – The protection of system data, records, and user accounts from unauthorized access or misuse.

Proof of Concept – A functional prototype or working version created to demonstrate that the proposed system design and features are practical and feasible.

RELATED LITERATURE AND STUDIES

This chapter presents the related literature and studies reviewed for discovering the facts about the topics under investigation. It presents the related literature and studies used reference that will give helpful insight on the direction of this study

Related Literature

A. Foreign

The integration of digital competencies into professional curricula is essential for modern workforce readiness, as highlighted by Ngoepe, Jacobs, and Mojapelo (2022), who emphasize the necessity of embedding computational methods and digital records management into educational programmes to align with Fourth Industrial Revolution demands. Their study advocates for a curriculum that includes data curation, information governance, and the use of technological tools for processing and preserving digital records, which are

fundamental components for an effective OJT monitoring system (Ngoepe et al., 2022). The application of a collaborative Framework for Team Approach (FTA) in curriculum development ensures that diverse stakeholder inputs are incorporated, a practice directly transferable to designing a robust and user-centric internship monitoring platform (Ngoepe et al., 2022). Furthermore, the focus on flexible, technology-guided delivery models like CODeL supports the creation of accessible and scalable digital systems for tracking and managing trainee progress (Ngoepe et al., 2022). Ultimately, their work underscores that preparing graduates to handle digital records efficiently is critical for accountability and decision-making, objectives that are equally vital for the success of any OJT or internship monitoring system (Ngoepe et al., 2022).

The integration of automated systems in education necessitates a critical examination of its broader implications beyond technical efficiency. Selwyn et al. (2021) caution that what is often heralded as full automation is frequently a state of "fauxtomation," reliant on new forms of human monitoring and labor to function. This raises concerns about the delegation of professional judgment, where the educator's expertise may be sidelined by algorithmic decisions, creating ambiguity in accountability. Furthermore, such technologies risk reducing rich, social educational processes into isolated, transactional activities, a phenomenon described as desocialisation. Therefore, while automation offers clear benefits, it is imperative to design systems that complement, rather than replace, human professional judgment and preserve the relational core of education.

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Technology-based internship programs have become increasingly critical in addressing the competency gap between academic preparation and industrial technology requirements in the era of globalization and Industry 4.0 (Widjaja, 2025). Research indicates that only approximately 60% of industrial engineering vocational graduates meet industry competency standards, with the remainder requiring additional training, highlighting a significant disconnect between educational outcomes and real-world industry needs (Widjaja, 2025). Studies have shown that direct participation in real-world industrial projects through experiential learning can significantly enhance both conceptual understanding and practical skills among students (Widjaja, 2025). However, the effectiveness of technology-based programs remains suboptimal due to factors such as inadequate systematic cooperation between educational institutions and industry, limited structured coaching, and misalignment between industrial projects and educational curricula (Widjaja, 2025). Recent research has shifted toward utilizing technologies such as Learning Management Systems, virtual reality, and online monitoring platforms to support internships, finding that technology application not only increases internship efficiency but also expands access to flexible and independent experiential learning (Widjaja, 2025).

B. Local

According to the study of Kevin Caratiquit (2021), the development of a Web-Based School Information and Publication System aimed to enhance school promotion and provide timely, engaging, and relevant information to stakeholders such as employees, learners, parents, and the community. The system served as an online platform for sharing school updates and offering downloadable instructional materials and resources. Using the iterative waterfall methodology, the study assessed the system based on the ISO 25010:2011 software quality standards, focusing on aspects like functionality, usability, reliability, and security. Results revealed that the system achieved an overall “Excellent” rating, indicating high compliance with software quality requirements. The findings further emphasized that the system was beneficial, informative, and effective in improving communication and access to educational information within the school community.

The implementation of a centralized Student Information Management System (SIMS) is critical for improving administrative efficiency in local colleges, as highlighted by Grepon et al. (2021), whose developed system

streamlined enrollment, grading, and reporting processes at a community college in Northern Mindanao. Research by Durnali (2013) further supports that e-school systems significantly enhance data accuracy, storage, and dissemination compared to manual methods. Moreover, Akinloye, Adu, and Ojo (2017) emphasize that proper electronic record-keeping promotes transparency, accessibility, and cost-effectiveness in academic institutions. Kurniawan and Andika (2019) also note that web-based school management systems effectively address the specific administrative needs of educational organizations. Therefore, adopting tailored SIMS solutions can substantially uplift service quality and operational coherence in local college settings.

Based on the research by Mindaña (2020), the automation of Information Technology (IT) system infrastructure is a critical driver for enhancing productivity within the Management Information Systems (MIS) of Higher Education Institutions (HEIs). The study establishes that implementing automation in areas such as server hardware, computer networks, and virtualization platforms significantly reduces manual tasks and human error, thereby streamlining operational processes. This technological shift allows the MIS workforce to transition from routine administrative duties to more complex and innovative activities, directly increasing their productivity and the institution's operational efficiency. The findings, which demonstrated a "High" level of improvement in meeting service level requirements and managing operational pressure, confirm a strong positive correlation between IT automation and MIS performance. Consequently, the research concludes that strategic investment in IT automation is essential for HEIs aiming to achieve long-term improvements in service delivery and institutional effectiveness.

While advanced technologies like Artificial Intelligence are revolutionizing domains such as cybersecurity (Essien & Ukut, 2024), the foundational technology for developing functional and accessible local school systems remains the robust combination of PHP and MySQL. This stack is particularly favored in educational institutions for its cost-effectiveness, open-source nature, and strong community support, which lowers the barrier to entry for custom system development. PHP serves as a reliable server-side scripting language to build dynamic web interfaces for students, faculty, and administrators, while MySQL provides a secure and efficient backend database for managing academic records. The reliability of this paradigm allows developers to focus on creating user-friendly features—like digital logbooks and real-time monitoring dashboards—without the complexity of more nascent technologies. Therefore, for practical and scalable academic systems, PHP and MySQL continue to be a highly relevant and powerful technological foundation.

Higher Education Institutions in the Philippines implement enterprise systems as the backbone of daily service delivery, comprising transactions from admission to grade management, recognizing that complex processes cannot be handled manually but require technological automation to reduce workloads, enhance time management, and generate timely quality reports (Grepon et al., 2021). The implementation of e-school systems has demonstrated improvements in data collection, processing, storage, accuracy, and dissemination of student information, significantly impacting how institutions manage educational services (Grepon et al., 2021). Student Information Systems (SIS) are software programs designed to handle student data for educational institutions, often known as Knowledge Management Systems for Students, created to provide solutions and feedback that encourage effectiveness in learning, teaching, and administration (Grepon et al., 2021). Innovative information management systems make students more inspired, enhance their learning effectiveness, and increase engagement with classes and schools, while also facilitating administrative relations and reducing work time for student affairs and report card processing (Grepon et al., 2021). Modern school management information systems provide necessary leverage by ensuring proper record-keeping, enhancing decision-making processes, and leading to cost savings, transparency, easy accessibility, accountability, and efficient retrieval of required information (Grepon et al., 2021).

The DepEd's Digital Rise Program highlights the importance of integrating technology in education to improve efficiency and reduce administrative burdens through digital literacy, ICT-assisted teaching, and ICT-assisted learning. Research by Balmeo (2021) demonstrates that teachers experience significant stressors, including workload and administrative tasks, which can be alleviated through effective document management systems. Recent studies underscore the significance of digital document management systems in educational settings, with Ahmad et al. (2023) emphasizing the importance of digitalization in improving document management efficiency and accessibility. Security and access control are critical components of digital systems, as Al-Adwan et al. (2024) emphasize that robust security measures and clear access control policies are crucial for maintaining

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the integrity and confidentiality of digital documents in educational institutions. Furthermore, Marmoah et al. (2024) found that digital literacy improvements in teachers are more influenced by targeted training programs rather than demographic factors, underscoring the importance of continuous professional development in enhancing teachers' competencies with digital systems.

Related Studies

A. Foreign

Studies of real-time monitoring systems in educational environments show the feasibility of employing web-based technologies for user engagement and performance tracking. For example, recent research has looked into deep learning methods for real-time attention monitoring and behavior detection in intelligent classrooms, with a focus on systems that employ facial analysis in determining student engagement (PARAMBIL et al., 2022). These systems usually utilize client-side processing with libraries such as face-api.js in order to carry out operations such as facial detection and emotion recognition within the browser, respecting data privacy by not carrying out server-side processing (TANZ, 2025). In addition, the use of interactive dashboards and automated reporting capabilities, as found in such learning tools, creates a system for creating meaningful analytics over time on user activity and states (TRABELSI et al., 2023). The architectural design principles of these real-time monitoring systems for education—client-side data processing, real-time feedback, and complete reporting—provide a useful model for creating an effective system for monitoring OJT/Internship activities and participation.

Literature has always shown the shortfalls of conventional paper-based logbooks for tracking internship activities in terms of timeliness, storage, and susceptibility to physical damage or loss (Kantembe et al., 2021). On the contrary, digital logbooks utilize the advancement of technology to hasten the process of monitoring and drastically enhance efficiency for both parties (Shelokov, 2022). These digital platforms enable real-time monitoring and remote access, making it easy for instructors and supervisors to track a student's improvement from anywhere with an internet connection (Khan et al., 2017). Moreover, functionality such as comment sections and customizable templates makes it easy to provide timely guidance and feedback, which aids trainees in reviewing their learning process and determining areas for self-improvement (Chen & Chen, 2018; Alam et al., 2019). Accordingly, the use of digital logbooks offers a useful resource for reinforcing communication, team working, and the general impact of practical training initiatives (Ryan, 2020).

According to Dhanraj Bandu Tikhat (2024), internship portals play a crucial role in bridging the gap between academic learning and industry requirements by providing a digital platform that connects students with potential employers. These portals streamline the internship search and application process, making it more efficient and transparent for both students and organizations. Tikhat emphasized that internship portals enhance students' employability by allowing them to gain real-world experience aligned with their field of study. Furthermore, the integration of user-friendly interfaces and data-driven matching systems improves the overall effectiveness of internship placement. Overall, the study highlights that well-designed internship portals contribute significantly to career readiness and institutional collaboration in higher education.

The drive to automate academic record processes is a critical response to the limitations of manual systems, a challenge highlighted in the work of Omolayo et al. (2024). Their research demonstrates that even using accessible tools like spreadsheets for automation can significantly optimize academic operations by reducing manual errors and saving time. While their study focused on forecasting and course planning, it shares the same foundational principle with our OJT Tracker system: the replacement of inefficient paper-based or manual methods with digital, automated solutions. The authors successfully argue that automation leads to more reliable data and frees up administrative resources for more strategic tasks. This reinforces the justification for our project, showing that the push for automation in academic record-keeping is a widespread and necessary evolution in educational management.

The implementation of data analytics within educational web systems is a critical step towards proactive academic management. As demonstrated by Mkpojiogu et al. (2021), a web-based system can be effectively designed not just as a repository for grades, but as an analytical tool that monitors performance trends and

identifies at-risk students. Their study highlights how features like automated GPA computation and performance visualization dashboards transform raw academic records into actionable intelligence for both students and faculty. This approach directly addresses the need for timely intervention based on concrete data rather than delayed manual assessments. Therefore, this research provides a clear and practical model for integrating student data analytics directly into the fabric of an academic monitoring system.

Teaching evaluation is an important means to evaluate the quality of university education, yet the traditional teaching evaluation process requires substantial manpower and material resources to uniformly allocate resources with inconsistent data storage methods (Zhang et al., 2021). Universities face significant challenges in data analysis and mining, including data from multiple business systems with non-uniform storage standards, irregularities in original data input such as errors and omissions, various forms of data storage encompassing structured, unstructured, and paper-based data, and a lack of accurate standards for data cleaning processes (Zhang et al., 2021). The system adopts the PHP development language, the mature oneThink development framework, MySQL database for data storage, and MVC software design architecture with B/S mode for front-end and server interaction (Zhang et al., 2021). The implemented system stores strictly cleaned structured data in its data warehouse, providing powerful underlying data support for future education data analysis, data mining, learning behavior prediction, and learning route recommendation (Zhang et al., 2021). The platform effectively improves and optimizes all aspects of data management, improves the deficiencies of daily educational administration, and simplifies the daily educational work process (Zhang et al., 2021).

B. Local

Based on the study from Grepon et al. (2021), the construction of the NBCC-School Management System showcases the utmost significance of establishing centralized student information portals within Philippine higher education to overcome inefficiencies from manual processing. The study identifies how a hybrid system that integrates Java-based transactional modules and web-based interfaces efficiently streamlined key academic processes such as enrollment, grading, and report generation specifically for the Northern Bukidnon Community College setting. Outcomes verified under ISO 25010 standards presented excellent performance in functionality (4.15), usability (4.15), and reliability (3.83) and confirm that such systems contribute a lot towards administrative efficiency and management of data in Philippine educational institutions. The research further suggests extending such portals to mobile applications and web platforms to increase access for students and parents to cater to the changing demands of digital learning in the Philippines. This study offers both a methodology and empirical findings that justify the creation of holistic student information portals which can be replicated by other Philippine schools wishing to modernize their management systems.

According to recent studies, web-based internship management systems have shown substantial gains in administrative effectiveness and process automation in schools. Del Rosario and Dela Cruz (2022) created an Internship Program Management Information System implemented with PHP and web technologies that effectively lowered processing time from 66 minutes to 10 minutes per student and reduced necessary student visits from 12 to 4 via lean management integration. Their system had an impressive aggregate rating of 4.32 according to ISO 25010 standards, and notably scored very high in functional suitability and performance efficiency. The research went on to confirm that such systems effectively solved typical internship monitoring problems such as document management, tracking of progress, and communication gaps among stakeholders. This study offers sound empirical proof that well-implemented internship monitoring systems are able to turn cumbersome processes into productive computerized workflows without compromising on quality standards.

The implementation of web technology to streamline academic monitoring is a proven strategy, as demonstrated by Araneta et al. (2020) in their development of a Student Performance Tracking System. Their research established that a system built with PHP and MySQL could successfully automate manual record-keeping, centralize data for easy access, and provide real-time performance feedback to stakeholders. The study underscores the critical role of role-based access in maintaining data security and delivering customized functionalities for teachers, students, and administrators. By creating a centralized digital repository, their system effectively solved problems of data loss, inaccuracy, and delayed reporting that plagued the previous paper-based process. This validates the core approach of using accessible web technologies to build efficient and transparent monitoring tools for educational institutions.

Caratiquit (2021) developed a Web-based School Information and Publication System for Lal-lo National High School in Cagayan, Philippines, using the iterative waterfall software methodology and evaluated it against ISO 25010:2011 software quality standards. The system was designed to promote the school online, provide timely information to stakeholders, share updates on school activities, and supply downloadable instructional materials and resources (Caratiquit, 2021). Through evaluation by 126 teaching and non-teaching staff, 350 students, 70 parents, and 12 IT specialists, the system received an overall assessment of "Excellent" across eight quality characteristics: functional suitability, reliability, performance efficiency, usability, security, compatibility, maintainability, and portability, with weighted means ranging from 4.24 to 4.31 out of 5.00 (Caratiquit, 2021). The study emphasized that web-based systems eliminate the necessity for printed documents and announcements while providing accessible database storage and backup capabilities for institutional information (Caratiquit, 2021). This research provides a validated framework and evaluation methodology applicable to developing internship monitoring systems, particularly in ensuring multi-stakeholder satisfaction and adherence to international software quality standards within Philippine educational institutions (Caratiquit, 2021).

Digital transformation in records management is revolutionizing how educational institutions handle information, shifting from traditional paper-based systems to digital formats that enhance efficiency, accuracy, and accessibility. Wagan, Briones, Baldovino, and Refozar (2025) investigated the implementation of digital record management in a private Philippine higher education institution, revealing that digital systems significantly improved record retrieval times, reduced manual errors, and enhanced decision-making processes through streamlined workflows and automated data validation. The study emphasized that successful digital transformation requires a clear transition strategy, comprehensive staff training, and a culture of continuous improvement to address challenges such as compatibility issues, data loss during migration, and staff resistance to new technologies. Furthermore, the researchers highlighted the importance of implementing robust security measures, including multi-factor authentication and regular security audits, to protect digital records from unauthorized access and ensure data integrity. Based on their findings, Wagan et al. (2025) proposed a strategic roadmap that includes adopting cloud-based solutions, implementing AI-powered search capabilities, and establishing automated compliance auditing tools to further enhance digital record management practices in Philippine educational institutions.

Synthesis of the Reviewed Literature and Studies

The design and development of the proposed Internship Monitoring and Management System (IMMS) is well-supported by both foreign and local literature, all of which highlight the vital role of digital technologies in enhancing academic monitoring and record management. Existing studies consistently show that traditional manual systems—particularly those dependent on paper-based tools like Daily Time Records (DTRs) and logbooks—are inefficient, vulnerable to human error, and difficult to organize. These findings directly support the study's objective of identifying the major issues in the current internship process, such as delays, inaccurate documentation, and the absence of a centralized monitoring system.

Ngoepe et al. (2022) emphasize that incorporating digital competencies and record management technologies into educational systems is essential for preparing students for modern workforce demands. This supports the need for a system like IMMS, which utilizes digital tools to manage internship-related data more effectively. In the same way, Widjaja (2025) points out that technology-driven internship programs enhance both practical skills and monitoring efficiency, reinforcing the objective of creating a web-based system that connects academic learning with real-world experience.

Regarding automation, Selwyn et al. (2021) warn that while automated systems can improve efficiency, they should not fully replace human decision-making. This perspective is reflected in the IMMS design, where automated processes assist supervisors and coordinators but still require their approval and judgment. Such a balance ensures accountability while enhancing operational performance, aligning with the study's goal of implementing structured and controlled approval workflows.

The literature also underscores the significance of real-time monitoring and centralized platforms. Studies by Trabelsi et al. (2023) and Mkpojiogu et al. (2021) reveal that dashboard analytics and reporting tools greatly improve tracking, evaluation, and decision-making processes. These findings justify the integration of real-time

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dashboards in the IMMS, allowing coordinators to easily monitor student attendance, progress, and pending tasks.

In addition, research on digital logbooks and web-based monitoring systems (Kantembe et al., 2021; Shelokov, 2022) demonstrates that shifting from manual to digital platforms increases accessibility, minimizes data loss, and enables remote supervision. This supports the system's objective of facilitating online submissions, validations, and centralized storage of records, ultimately addressing issues related to misplaced documents and inefficient data retrieval.

From a local perspective, studies conducted by Grepon et al. (2021) and Del Rosario & Dela Cruz (2022) show that web-based systems significantly enhance administrative efficiency, reduce processing time, and improve communication within educational institutions. These findings validate the inclusion of features such as automated notifications and centralized communication tools in the IMMS, which aim to bridge communication gaps among students, supervisors, and coordinators.

Moreover, Caratiquit (2021) highlights that system performance should be evaluated based on established quality standards such as usability, reliability, and security. This supports the study's objective of assessing the IMMS using these criteria to ensure that it meets user expectations and maintains high standards of performance.

Furthermore, Wagan et al. (2025) emphasize the importance of secure and centralized digital record management systems in promoting transparency, accessibility, and informed decision-making. These insights support the incorporation of features like role-based access control, audit logs, and secure data storage in the IMMS, which contribute to improved accountability and data integrity.

In summary, the reviewed literature and studies collectively confirm that transitioning from manual to automated, web-based systems is essential in modern educational settings. The findings strongly support the development of the Internship Monitoring and Management System, as it incorporates key features such as digital attendance tracking, automated workflows, real-time monitoring, and centralized data management. These features effectively address the identified problems and fulfill the study's objectives of enhancing efficiency, transparency, communication, and overall internship management processes.

METHODS OF RESEARCH AND PROCEDURES

Research Methodology

This study employs a Quantitative Research Approach to systematically evaluate the effectiveness of the proposed Internship Monitoring and Management System (IMMS). The quantitative method focuses on collecting measurable and numerical data to assess the system's performance, usability, reliability, and overall acceptability among users. Through statistical analysis, the study aims to provide objective and evidence-based results regarding the system's contribution to improving internship monitoring and management processes.

The study also adopts the Agile Software Development Methodology as the primary development model in designing and developing the IMMS. Agile is an iterative and incremental software development approach that emphasizes adaptability, continuous improvement, user feedback, and frequent testing. This methodology was selected to ensure that each module of the system is progressively developed, evaluated, and refined based on user needs and measurable performance indicators.

Through Agile development cycles, the system modules such as attendance tracking, dashboard monitoring, daily task submission, approval workflow, evaluation, notifications, and report generation were built and tested in phases. Each iteration allowed revisions and enhancements before proceeding to the next development stage.

A. Quantitative Approach

The quantitative approach is utilized to measure the system's effectiveness in terms of usability, functional suitability, reliability, security, and performance efficiency based on user responses and actual system usage.

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- **Purpose:** To determine the effectiveness, efficiency, and acceptability of the developed system using measurable data.

- **Data Collection:** Data will be collected through structured survey questionnaires distributed primarily to student interns as the main operational users of the system. The survey instrument will use a five-point Likert Scale to measure user perception and satisfaction.

- **Evaluation Standard:** The survey questionnaire is adapted from the **ISO/IEC 25010 Software Quality Model**, a globally recognized standard used for evaluating software systems.

- **Data Analysis:** Statistical tools such as frequency, percentage, weighted mean, and standard deviation will be used to analyze collected responses. These tools will help determine the overall level of system acceptability and performance.

Research Design

The study adopts a Developmental Research Design with a descriptive component.

- **Developmental Research:** This design is essential because the primary output of the study is the creation of a tangible product the Web-Based Internship Monitoring and Record Management System. This design guides the entire construction and evaluation process, ensuring the system is developed systematically and is validated against functional requirements.

- **Descriptive Research:** This component of the design is used to describe the nature of the current OJT monitoring environment. It helps characterize the existing manual procedures and the demographic profile of the respondents (students, supervisors, and coordinators) who will be involved in the system's development and evaluation. It is also utilized in the quantitative phase to describe the final evaluation results of the system.

The research design of this study is Developmental-Descriptive, which involves first describing the current OJT monitoring environment and then developing a Web-Based Internship Monitoring and Record Management System to address identified needs and improve efficiency.

The study will follow these general steps:

A. Define the Current Environment

- Identify the current processes and challenges of the manual and existing procedures for OJT/internship monitoring, documentation, and record management.

- Determine the functional and non-functional requirements for the new system based on the analysis of existing limitations and user needs.

B. Gather Data for System Specification

- Collect information from key stakeholders (students, OJT coordinators, and supervisors) regarding their experiences, requirements, and demographic profiles using surveys.

- Analyze the gathered data to finalize the system's specifications and design architecture.

C. Design, Develop, and Implement the System

- Design, develop, and test the Web-Based Internship Monitoring and Record Management System using an iterative development model (such as the Agile methodology), which allows for continuous refinement and integration of user feedback.

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- Deploy the final validated system for pilot use by a control group of users.

D. Evaluate the System's Effectiveness

- Evaluate the final system based on established metrics such as usability, efficiency, security, and overall effectiveness as perceived by the respondents (students, coordinators, and supervisors).

- Perform statistical analysis on the evaluation results to draw conclusions about the system's impact.

This design ensures the research is systematic and allows the researchers to develop a robust system that is properly validated against the identified needs of its users.

Data Collection

The data required for this study will be collected from two main sources: Primary Data and Secondary Data.

A. Primary Data

This refers to the data collected firsthand by the researchers specifically for the purpose of this study.

- **Surveys/Questionnaires:** Structured forms will be distributed to a sample population of OJT students, supervisors, and coordinators to gather numerical feedback on the proposed system's quality and acceptability (Quantitative data).

- **Systematic Observation:** The researchers will observe the current manual process, particularly how students document their attendance using Daily Time Records (DTRs) and how coordinators track and assess these documents, to identify operational pain points.

B. Secondary Data

This refers to data that have already been collected and documented by previous researchers or institutions.

- **Review of Related Literature and Studies (RRLS):** This involved gathering information from books, professional journals, published articles, and unpublished theses (including those found in the file), as presented in Chapter II, to provide context and support for the system's necessity.

- **Institutional Documents and Records:** These include relevant documents such as the existing OJT handbook, memo, guidelines, and sample Daily Time Records (DTRs) used at St. Clare College of Caloocan to understand the official procedures and data fields required by the institution.

Description of Respondents

The respondents of this study are selected student interns of St. Clare College of Caloocan who are currently undergoing or underwent internship, on-the-job training (OJT), or institutional requirement duty. These students were chosen as the primary respondents because they serve as the main operational users of the proposed Internship Monitoring and Management System (IMMS), particularly in performing tasks such as attendance scanning, daily log submission, document uploading, and progress monitoring.

The respondents are composed of students from programs that require internship or duty-hour completion as part of their academic curriculum. They were selected using purposive sampling, wherein only students who are directly involved in internship-related processes and are potential end-users of the system were included in the study.

The selected respondents are expected to provide reliable feedback regarding the usability, functionality, accessibility, efficiency, and overall acceptability of the developed system based on their experience and perception as primary users.

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Their responses are considered significant in evaluating whether the proposed system effectively improves the current manual internship monitoring and record management process of the institution.

Participant Group	Role in the Study	Estimated Number	Sampling Technique
Students	Primary users of the system; they will provide quantitative feedback on the system's usability, reliability, and efficiency.	**50**	Convenience Sampling / Stratified Rando m Sampling

Research Instrument

The primary research instrument used in this study is a structured survey questionnaire intended to gather quantitative data regarding the effectiveness, usability, and overall acceptability of the proposed Internship Monitoring and Management System (IMMS). The questionnaire was designed to obtain measurable responses from selected student interns of St. Clare College of Caloocan who serve as the primary operational users of the system. It was utilized to determine how the developed system can improve the current manual internship monitoring and record management process of the institution.

The survey questionnaire is divided into two major parts. The first part focuses on the profile of the respondents, which includes age, gender, course, and other relevant demographic information. This section aims to describe the characteristics of the respondents included in the study. The second part consists of statements related to system evaluation based on selected criteria from the ISO/IEC 25010 Software Quality Model. These criteria include functional suitability, usability, reliability, performance efficiency, security, and accessibility. Each criterion is used to assess the quality and effectiveness of the proposed system based on the actual perception and experience of the respondents.

A Five-Point Likert Scale was used to measure the level of agreement of the respondents for each statement, where 5 corresponds to Strongly Agree, 4 to Agree, 3 to Neutral, 2 to Disagree, and 1 to Strongly Disagree. The questionnaire was carefully reviewed and modified to ensure that all statements are aligned with the objectives of the study and are understandable to the respondents. The data gathered through this instrument served as the basis for statistical treatment and interpretation of the results in determining the overall acceptability and effectiveness of the proposed system.

Research Gathering and Data Procedures

A : Respondent Profile (PRE-SURVEY)

Age	Frequency	Percentage %
18-21		
22-25		
26-29		
30 and above		
Course	**Frequency**	**Percentage %**
Hospitality Management		
Tourism		

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Gender	Frequency	Percentage %
Female		
Male		
Others		

B. Questionnaire for Students: Current Situation (Manual System)

PART 1

Table 1. Problems Encountered in the Current Internship Process (PRE-SURVEY)

Indicators	SA(5)	A(4)	N (3)	D (2)	SD (1)	Weighted Mean	Ranking
1. The traditional Daily Time Record (DTR) process makes internship monitoring difficult.							
2. Important internship documents are prone to being lost or misplaced.							
3. Manual submission of internship requirements is time-consuming.							
4. I often lose track of my rendered internship hours.							
5. The manual system allows manipulation or falsification of records.							
6. There is no proper validation of submitted internship documents.							
7. Compiling internship reports manually is inconvenient.							
8. Updating attendance and progress reports takes too long.							
9. Receiving updates from internship coordinators is difficult.							
10. The lack of a centralized system makes internship monitoring inefficient.							

PART 2

Table 1. System Features and User Expectations (PRE-SURVEY)

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Indicators	SA(5)	A(4)	N (3)	D (2)	SD (1)	Weighted Mean	Ranking
1. A digital DTR system would improve internship monitoring.							
2. Online document submission would reduce lost requirements.							
3. Automated tracking hours would help students monitor progress accurately.							
4. Document validation features would improve data integrity.							
5. A centralized platform would make internship management more efficient.							
6. Real-time updates from coordinators are necessary.							
7. The system should generate internship reports automatically.							
8. The system would reduce manual paperwork.							
9. The system should be easy to use for students and coordinators.							
10. The system would improve overall internship experience.							

A : Respondent Profile (POST-SURVEY)

Age	Frequency	Percentage %
18-21		
22-25		
26-29		
30 and above		

Course	Frequency	Percentage %
Hospitality Management		
Tourism		

Gender	Frequency	Percentage %
Female		

Male		
Others		

PART II: Improvements In The Intership Process After System Implementation (Post-Survey)

INDICATOR	SA(5)	A(4)	N(3)	D (2)	SD(1)
1. The system made internship monitoring easier compared to the manual process.					
2. The system reduced the chances of losing important documents.					
3. Submitting internship requirements is now faster and more convenient					
4. The system helped me accurately track my rendered internship hours.					
5. The system minimized manipulation or falsification of records.					
6. There is proper validation of submitted internship documents in the system.					
7. Generating internship reports is now more convenient.					
8. Updating attendance and progress reports is faster using the system.					
9. Receiving updates from internship coordinators is easier.					
10. The system improved overall efficiency in internship monitoring.					

PART III: System Features Evaluation And User Satisfaction

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)
1.The digital DTR feature is effective and reliable.					
2.Online document submission works properly.					
3.Automated hour tracking is accurate.					
4.Document validation improves data integrity.					
5.The centralized platform is helpful for managing internship records.					
6.Real-time updates are useful and timely.					
7.The system generates reports accurately					
8.The system reduces paperwork significantly.					
9.The system meets my expectations.					
10.I am satisfied with the overall performance of the system.					

Statistical Treatment of Data

A. Statistical Tools

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The quantitative data gathered in this study were obtained through a paper-based survey questionnaire distributed to student interns of St. Clare College of Caloocan. The collected responses were manually encoded and organized using spreadsheet software (e.g., Microsoft Excel) for systematic analysis.

To evaluate the effectiveness and acceptability of the proposed Internship Monitoring and Management System (IMMS), the study utilized descriptive statistical tools, particularly frequency, percentage, and weighted mean, in analyzing the responses based on the Likert-scale questionnaire.

These tools were appropriate for the study's quantitative and descriptive research design, as they enabled the researchers to summarize, interpret, and present user perceptions regarding system usability, accessibility, reliability, security, and overall effectiveness.

1. Frequency

Frequency was used to count the number of responses for each category in the Likert scale (5 – Strongly Agree, 4 – Agree, 3 – Neutral, 2 – Disagree, 1 – Strongly Disagree).

This statistical tool helped determine how many respondents selected a particular response for each indicator related to:

- Problems encountered in the current manual internship process
- Expectations and perceived usefulness of the proposed system

By analyzing the frequency distribution, the researchers were able to identify common trends and recurring issues in the existing system, as well as the level of acceptance of the proposed IMMS.

Formula:
Frequency = Number of times a specific response occurs

2. Percentage

Percentage was used to express the proportion of responses relative to the total number of respondents.

This tool provided a clearer understanding of how responses are distributed, allowing easy comparison of results across different indicators.

It was used to determine:

- The percentage of respondents experiencing specific problems in the manual system
- The percentage of respondents who agree or disagree with proposed system features

Formula:

$$\text{Percentage} = \frac{\text{Frequency}}{50} \times 100$$

Where:

P = Percentage of responses for each category

F = Frequency for each response category (e.g, "Strongly

Agree", "Agree").

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N = Total number of respondents

3. Weighted Mean

The weighted mean was used to determine the overall assessment of each indicator in the Likert scale questionnaire.

Each response was assigned a numerical value:

- 5 – Strongly Agree
- 4 – Agree
- 3 – Neutral
- 2 – Disagree
- 1 – Strongly Disagree

The weighted mean allowed the researchers to compute the average response for each statement, providing a more accurate measure of respondents' perceptions regarding the system.

It was used to evaluate:

- Problems in the current internship monitoring process
- Expected effectiveness of the proposed system
- Overall user satisfaction and acceptance

$$\bar{X} = \frac{\sum fx}{N}$$

Where:

$\bar{X}$ = Weighted Mean
f = Frequency of responses
x = Assigned weight of each response
N = Total number of responses

Technical Requirements

A. HARDWARE REQUIREMENTS

Device	Description
Computer	**Processor:** Intel Pentium, Intel Core i3 or higher, AMD equivalent. **RAM:** 4GB minimum. **Storage:** 256GB SSD or HDD minimum.

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	Display: Standard monitor and GPU Available. **Network:** At least 10 Mbps internet connection. **Operating System:** Windows 10 or later, macOS, Linux.
Laptop	**Processor:** Intel Core i3 / AMD Ryzen 3 or higher. **RAM:** 4GB minimum. **Storage:** 256GB SSD recommended. **Camera:** Built-in webcam recommended for administrative use. **Operating System:** Windows 10 / 11, macOS, Linux.
Tablet Device (Scanner Station)	**Processor:** Quad-core 2.0 GHz or higher. **RAM:** 4GB minimum. **Screen Size:** 8 to 10 inches or larger recommended. **Camera:** Rear or front camera required for QR code scanning and photo verification. **Operating System:** Android, iPadOS, Windows Tablet OS.
Smartphone	**Processor:** Quad-core 2.0 GHz or higher. **RAM:** 3GB minimum. **Camera:** Required for browser access and optional scanning use. **Operating System:** Android or iOS.

B. SOFTWARE REQUIREMENTS

Programming Language

The proposed Internship Monitoring and Management System (IMMS) was developed using multiple programming languages and web technologies to support frontend interface design, backend processing, database management, attendance scanning, reporting, and AI-assisted system features. These technologies were selected based on their efficiency, compatibility, and suitability for developing a secure and responsive web-based platform.

Software	Description
PHP	**Usage**: Primary server-side programming language used for backend logic, API processing, authentication, session management, attendance transactions, report generation, and database communication. **Files**: Login module, attendance API, daily logs module, reports module, user management, notifications, AI assistant integration, and dashboard data endpoints. **Rationale**: PHP was selected for its strong compatibility with MySQL, ease of deployment, and effectiveness in developing dynamic web systems.
JAVASCRIPT	**Usage**: Used for client-side interactivity, form validation, asynchronous requests, dashboard updates, QR scanner functions, and responsive user experience.

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	Files: Attendance scanner module, dashboard components, notifications, form handling, and dynamic tables. **Rationale**: JavaScript is essential for creating interactive and real-time-like browser functionality.
ReactJS	**Usage**: Used as the frontend JavaScript library for building reusable user interface components and modern single-page application functionality. **Files**: Student dashboard, supervisor dashboard, coordinator dashboard, login pages, scanner interface, and reports interface. **Rationale**: ReactJS improves UI responsiveness, maintainability, and component-based development.
HTML	**Usage**: Provides the structural foundation of the system's web pages and interface layout. **Files**: Login pages, dashboard layouts, forms, tables, reports, and navigation pages. **Rationale**: HTML is the standard markup language for web page structure.
CSS	**Usage**: Used for visual styling, layout design, responsive formatting, and user interface enhancement. **Files**: System theme styling, dashboard design, forms, buttons, tables, and mobile responsiveness. **Rationale**: CSS improves readability, user experience, and professional presentation.
TAILWIND CSS	**Usage**: Utility-first CSS framework used for rapid and responsive frontend styling. **Files**: React components, dashboards, forms, cards, tables, and layouts. **Rationale**: Tailwind CSS speeds up UI development and ensures consistent modern design.
MySQL	**Usage**: Used for database queries, record insertion, updates, filtering, reporting, and relational data management. **Files**: User accounts, attendance records, daily logs, evaluations, notifications, reports, and audit logs. **Rationale**: SQL enables efficient structured data management through MySQL.
JSON	**Usage**: Used as the standard data exchange format between frontend React components and backend PHP APIs. **Files**: API responses, login sessions, dashboard data, reports, and notifications. **Rationale**: JSON enables fast and organized communication between system layers.
Google Chrome	Recommended browser for best compatibility
Mozilla Firefox	Alternative supported browser
Microsoft Edge	Supported browser

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XAMPP	Local development server

C. NETWORK REQUIREMENTS

The proposed Internship Monitoring and Management System (IMMS) relies on a stable and secure network infrastructure to support communication between client devices, the web server, and the centralized database. Since the system is web-based, network connectivity is essential for attendance scanning, login authentication, dashboard access, document uploading, report generation, and system monitoring. The network environment must support simultaneous access from tablet devices, laptops, desktop computers, and smartphones used by students, supervisors, and coordinators.

Network Requirement	**Description**
Internet Access	**Category:** Connectivity **Description:** Stable internet connection is required for all client devices and server access. **Usage:** Used by students, supervisors, and coordinators to access the system, submit records, and monitor progress. **Rationale:** Ensures uninterrupted access and synchronized data across users.
Local Network / Wi-Fi	**Category:** Connectivity **Description:** Wireless or wired network connection within the school or office environment. **Usage:** Connects tablet scanner stations, laptops, desktop computers, and smartphones. **Rationale:** Provides faster and more stable internal access.
Recommended Speed	**Category:** Bandwidth **Description:** Minimum recommended speed of 10 Mbps upload/download. **Usage:** Supports multiple users simultaneously accessing dashboards, attendance scanning, and report loading. **Rationale:** Reduces lag and delays during peak usage periods.
HTTP / HTTPS	**Category:** Network Protocols **Description:** Standard web communication protocols using Port 80 for HTTP and Port 443 for HTTPS. **Usage:** Used when accessing the system through browsers. **Rationale:** HTTPS secures transmitted data through encryption.
TCP/IP	**Category:** Network Protocols **Description:** Core protocol for communication between client devices and the server. **Usage:** Supports all data transmission and requests within the network. **Rationale:** Ensures reliable and stable connectivity.
Recommended Response Time	**Category:** Latency **Description:** Maximum preferred response time of 200 milliseconds. **Usage:** Important for attendance scanning, login authentication, and dashboard updates. **Rationale:** Maintains a smooth and responsive user experience.
Web Access Ports	**Category:** Ports **Description:** Port 80 for HTTP and Port 443 for HTTPS. **Usage:** Used for browser-based access to the live web application.

	Rationale: Standard ports compatible with most hosting providers.
Database Port	**Category:** Ports **Description:** Port 3306 for MySQL if required by server configuration. **Usage:** Used internally between application server and database server. **Rationale:** Enables secure database communication.
HTTPS Encryption	**Category:** Security **Description:** Encrypts data transmitted between users and the server. **Usage:** Protects login credentials, attendance data, uploaded files, and reports. **Rationale:** Prevents interception, tampering, and unauthorized monitoring.
Authentication Access	**Category:** Security **Description:** Login credentials with role-based access control. **Usage:** Restricts access according to student, supervisor, or coordinator roles. **Rationale:** Protects confidential records and system modules.
Session Timeout	**Category:** Security **Description:** Automatic logout after a period of inactivity. **Usage:** Applies to all active user sessions. **Rationale:** Prevents misuse of unattended accounts.
Client-Server Model	**Category:** Network Topology **Description:** Centralized server connected to multiple client devices. **Usage:** Clients include tablet scanner devices, smartphones, laptops, and desktops. **Rationale:** Allows centralized monitoring, shared data, and easier maintenance.
Uptime Requirement	**Category:** Availability **Description:** High system availability during school and internship hours. **Usage:** Needed for attendance scanning, approvals, monitoring, and report access. **Rationale:** Prevents interruption of critical daily operations.
AJAX Polling	**Category:** Data Refresh **Description:** Periodic background data refresh without full page reload. **Usage:** Used for notifications, dashboard summaries, and pending approvals. **Rationale:** Provides near real-time updates efficiently without WebSocket dependency.

System Development Procedure

The Agile Software Development Methodology will be adopted for the development of the Internship

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Monitoring and Record Management System. Agile is an iterative and incremental approach that focuses on flexible and adaptive responses to change, delivering working software frequently, and involving customer collaboration throughout the process. The development process will be structured into the following seven key stages:

SDLC Step	Description	Agile Principle/Mapping
1. Requirement Gathering	This initial stage involves collecting both functional and non-functional requirements from end-users (students, supervisors, and coordinators) through document analysis. The output is a list of features (e.g., student digital logging, supervisor validation, real-time reports).	**Product Backlog Creation**
2. Planning & Design	The collected requirements are translated into a system architecture, defining the overall structure, user interfaces, database schema (MySQL), and the technology stack (HTML, CSS/Bootstrap, JavaScript, PHP). This results in the system blueprint.	**Sprint Planning & Design of User Stories**
3. Implementation/Coding	The developers write the code for the system modules (Student, Supervisor, Coordinator) based on the approved design The coding is performed in short, focused **Sprints**, producing incremental pieces of working software.	**Iterative Development (Sprints)**
4. Unit and Integration Testing	After each development sprint, the system components are rigorously tested to identify and fix bugs. **Unit Testing** verifies individual components, and **Integration Testing** ensures that all modules (e.g., Student logging and Coordinator monitoring) work seamlessly together.	**Continuous Testing & Quality Assurance**
5. User Acceptance Testing (UAT) & Evaluation	The partially completed system is presented to the end-users for feedback and evaluation. The quantitative survey instruments are applied to test the system's **usability, functionality, and efficiency**. The feedback is incorporated in the next development cycle.	**Customer Collaboration & Review**
6. System Refinement	Based on the UAT and evaluation results, the development team implements necessary revisions and improvements to the system. This iterative loop ensures that the final system aligns perfectly with the users' needs and academic standards.	**Embracing Change & Continuous Improvement**
7. Deployment	For this study, the system will be deployed to a free web hosting service (InfinityFree) for online accessibility and final demonstration.	**Working Software Delivery**

Proposed System / System Design

The proposed Internship Monitoring and Record Management System is a web-based application designed to

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replace the manual process of tracking, evaluating, and recording On-the-Job Training (OJT) activities. The system design is documented using the Input-Process-Output (IPO) model and the System Architecture diagram.

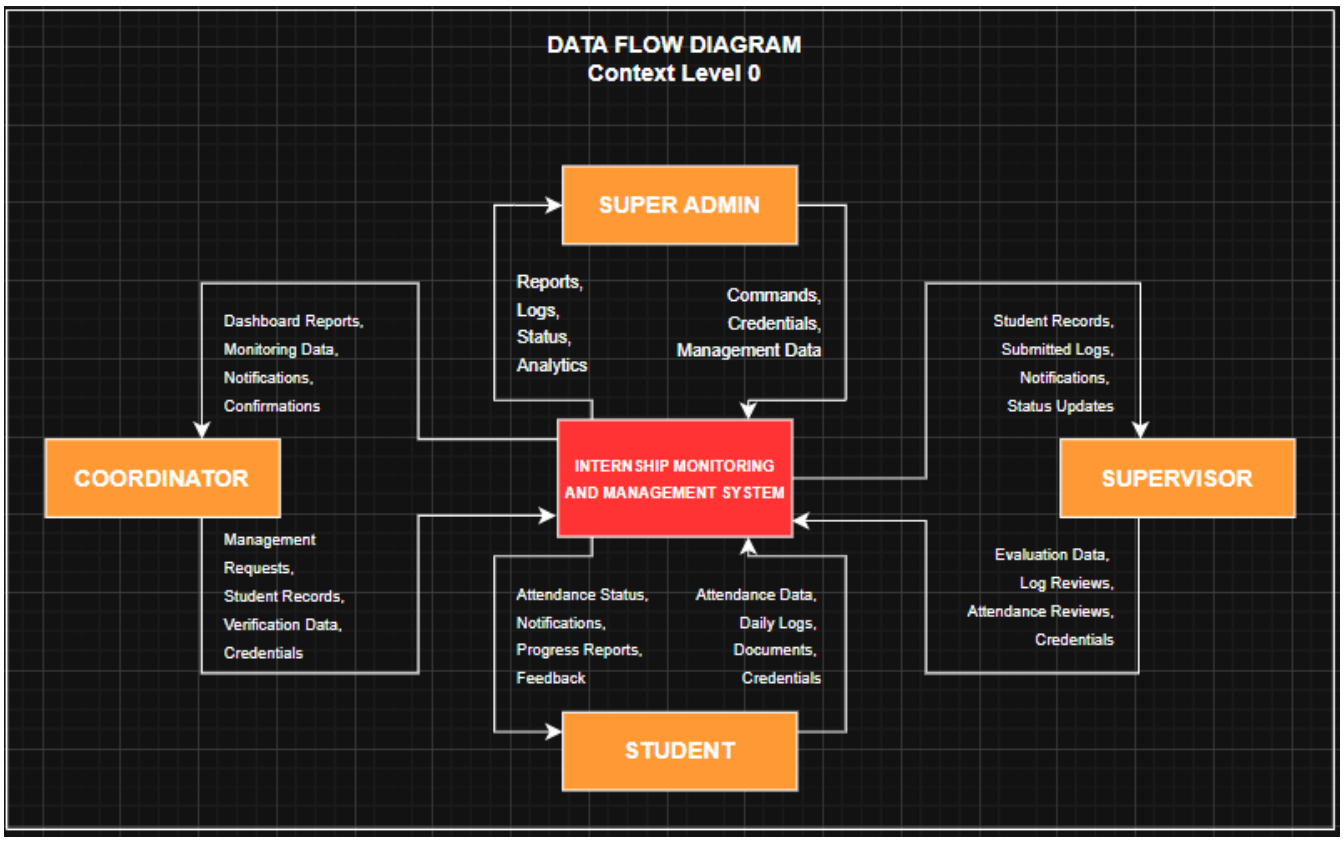
Input-Process-Output (IPO) Model

The IPO model illustrates the fundamental structure of the system's operation by showing how inputs are transformed through processes to generate desired outputs.

Component	Description	Examples
Input	The data and commands entered into the system by various users (Students, Supervisors, Coordinators).	User Credentials (Login/Password), Daily Time Logs (Time In/Out), Supervisor Validation/Approval, Task Submissions, Coordinator Report Requests, OJT Guidelines.
Process	The core functions, calculations, and logic the system performs on the input data to transform it into meaningful information.	User Authentication, Data Storage and Retrieval (CRUD operations), Automatic Time Calculation (Total Hours Rendered), Data Validation and Integrity Check, Report Generation Algorithms, Notification Triggers.
Output	The results and information the system provides to the users, which serve as the basis for decision-making.	Real-time Attendance Status, Completed OJT Hour Reports, Supervisor Performance Ratings, System Notifications (for pending approvals), Printable Records (DTRs, Evaluation Forms).

System Architecture

A. Context Diagram (DFD Level 0)



B. Data Flow Diagram (DFD Level 1)

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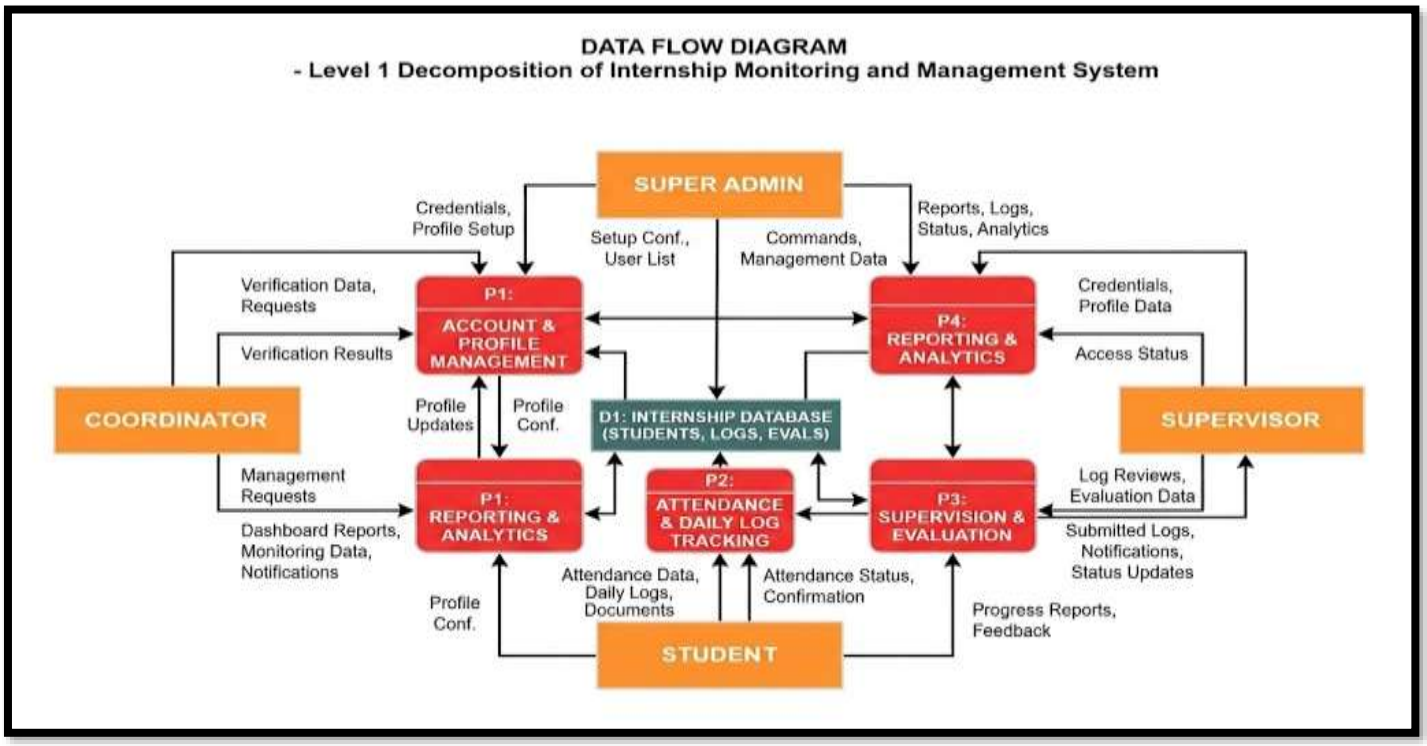
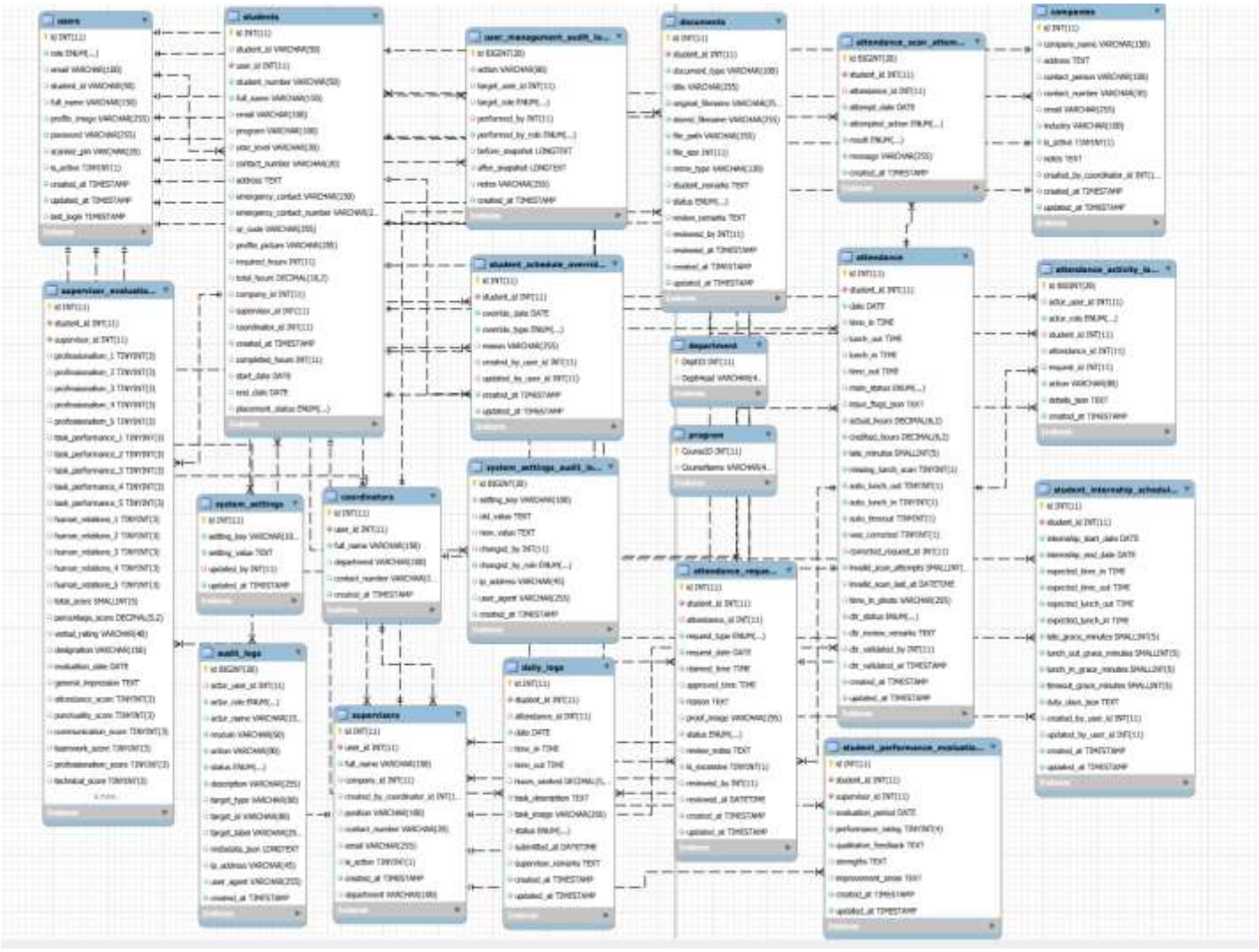


C.Entity-Relationship Diagram (ERD)



Proposed Flowchart

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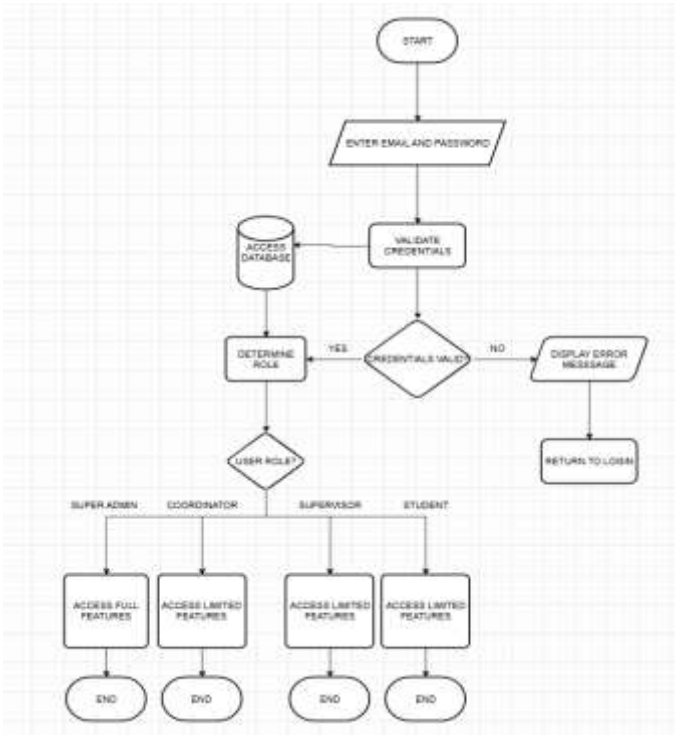
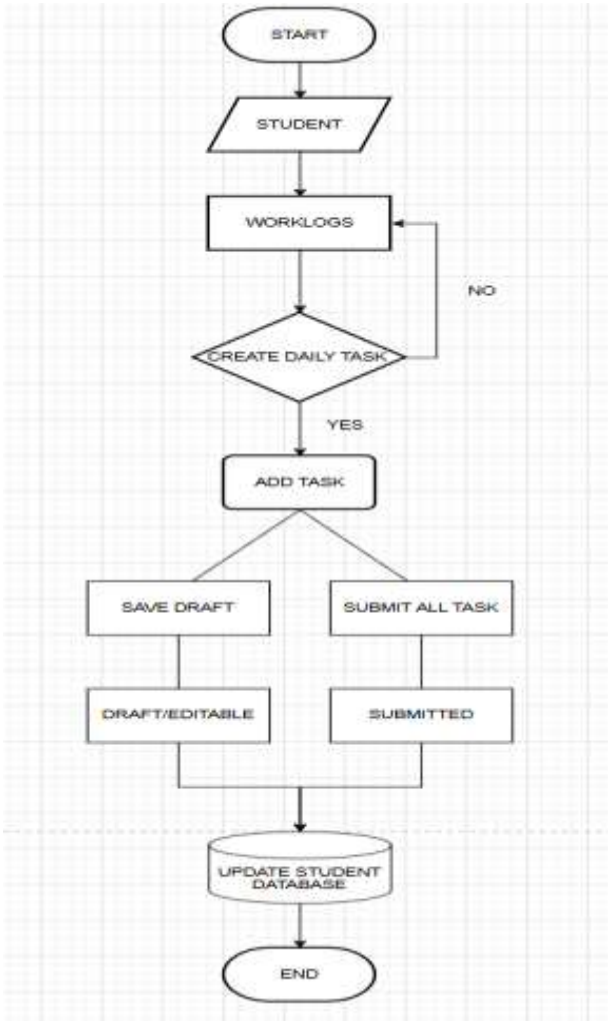
User Authentication



Student Worklogs



Student Attendance

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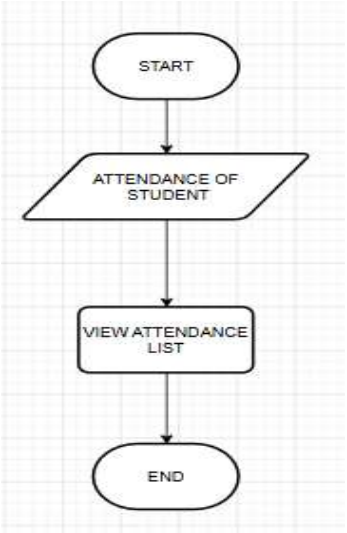
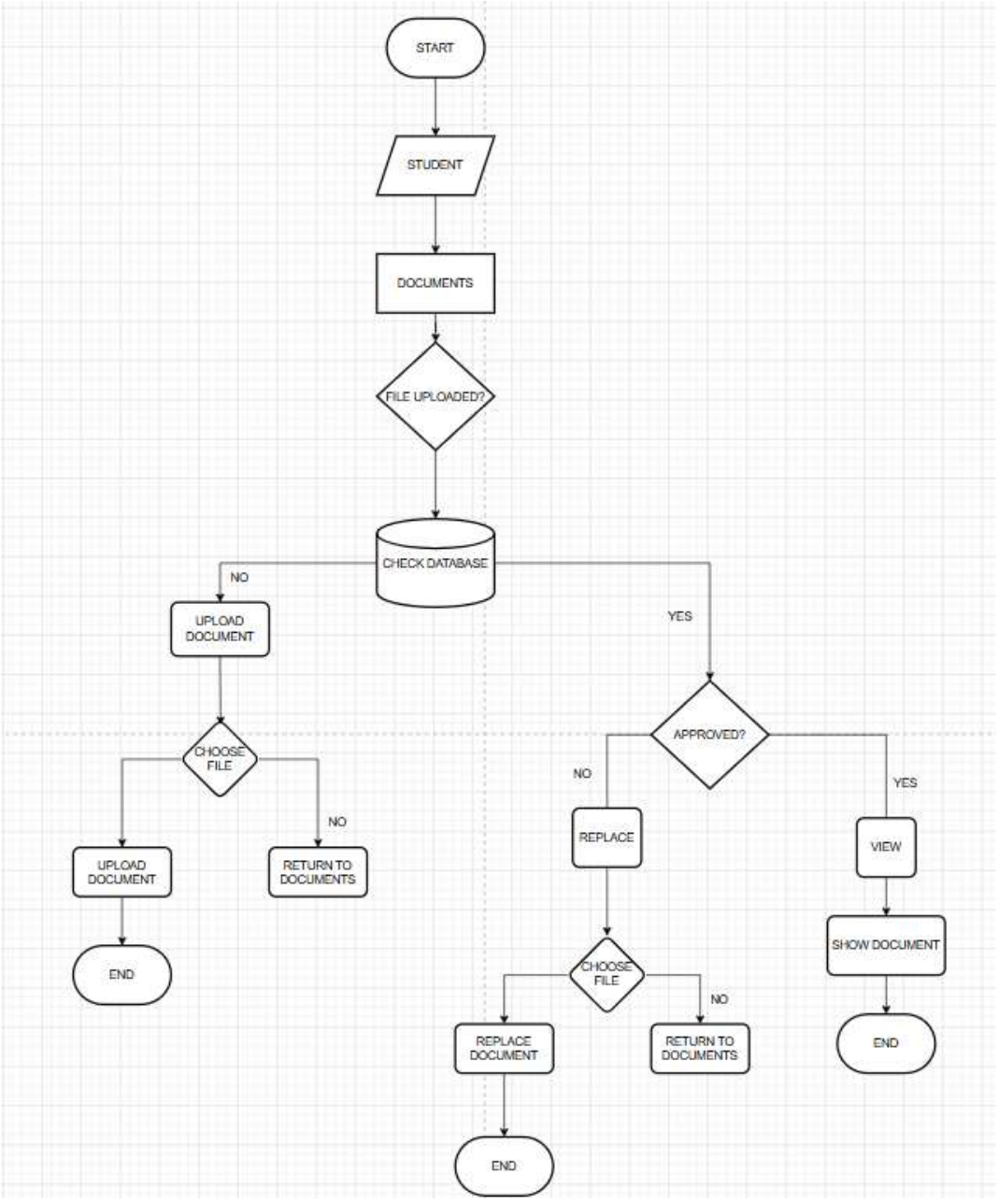


Student Documents



Student Profile

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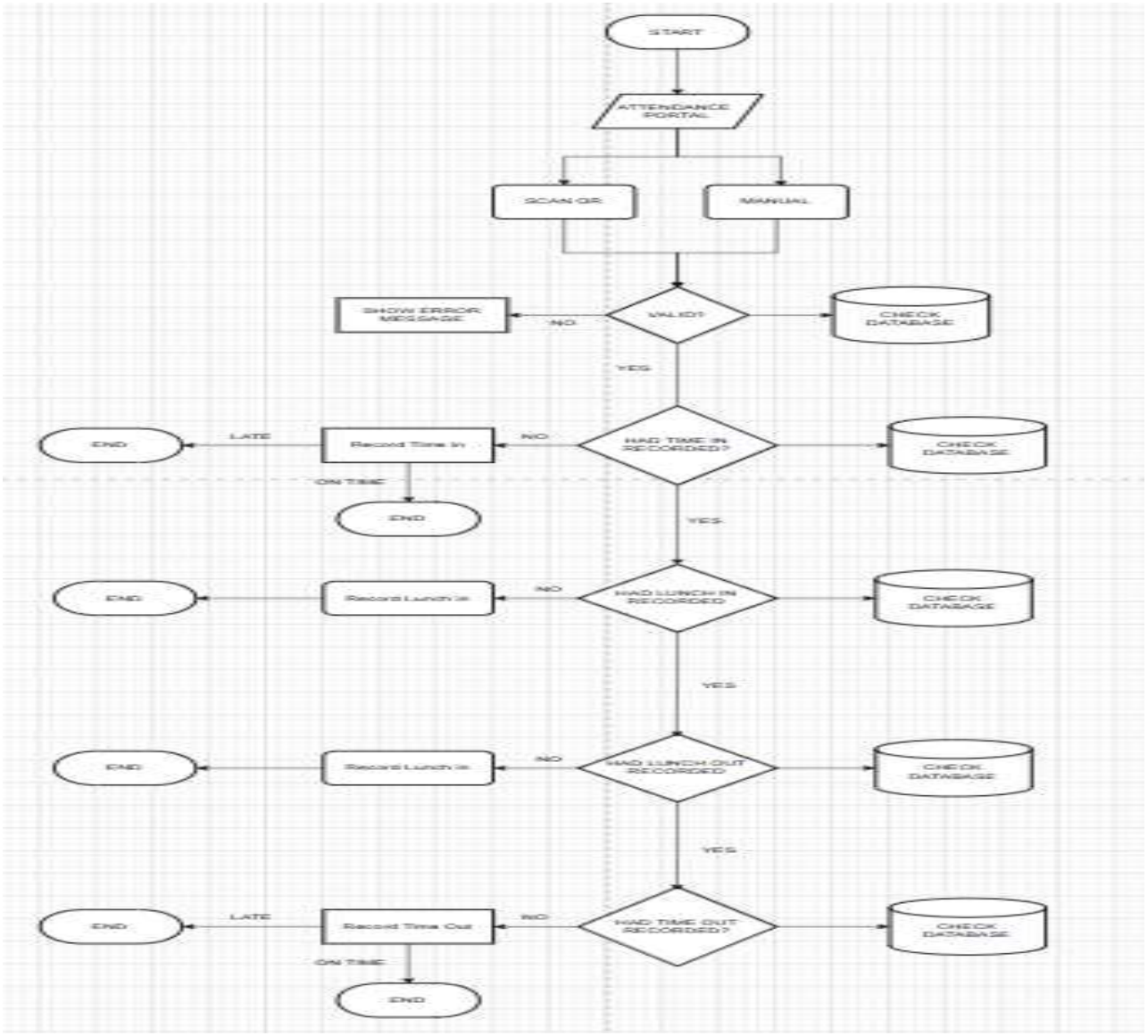
Student Qr Code



Super Admin Command Center

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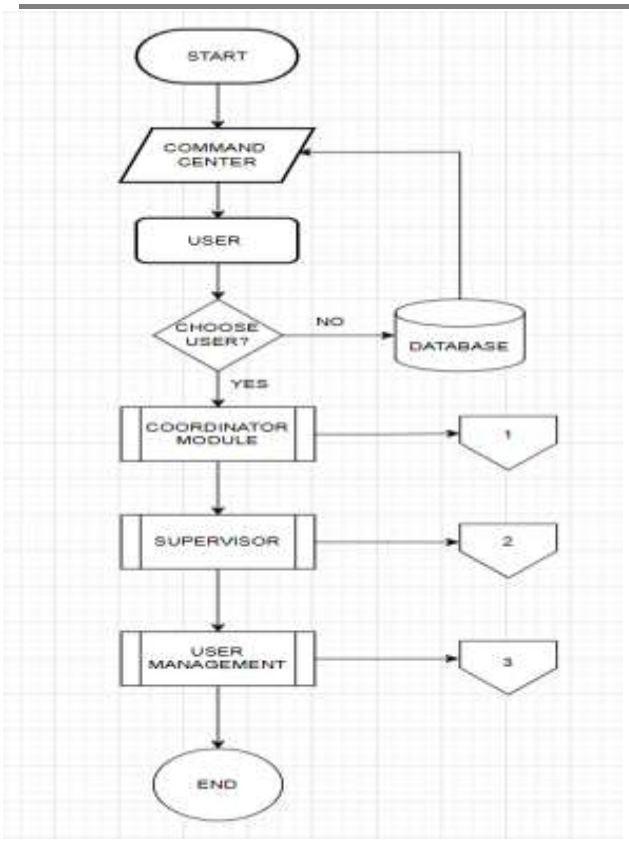
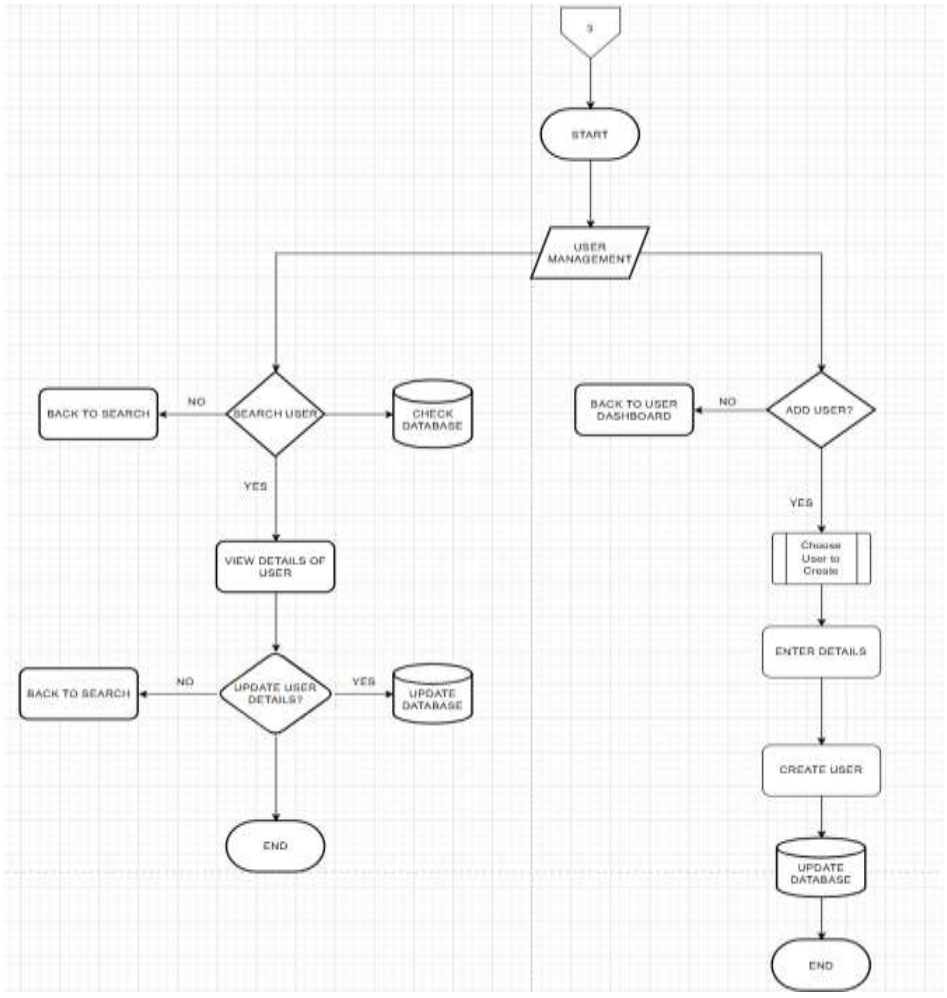


SUPER ADMIN USER MANAGEMENT



Super Admin User Company

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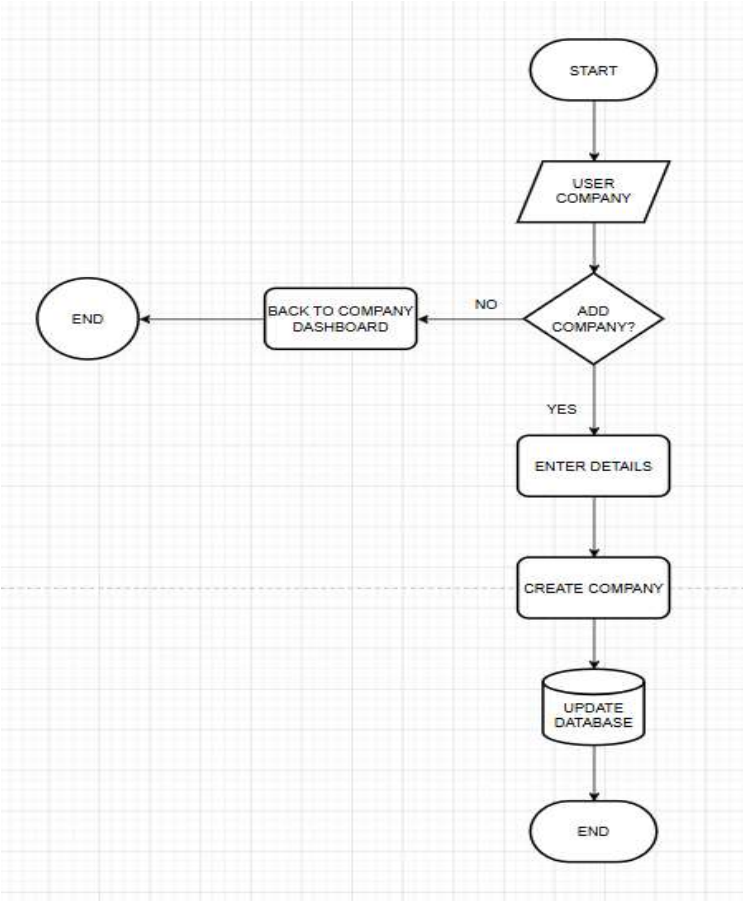
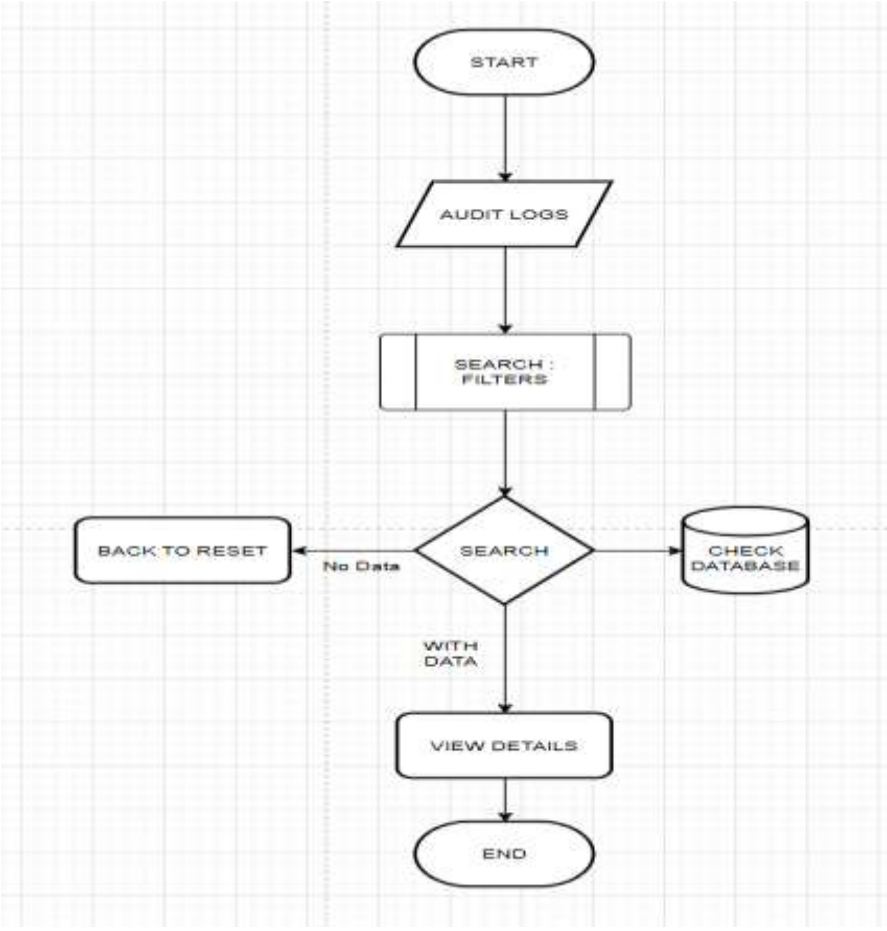


Super Admin Audit Logs



Super Admin System Settings

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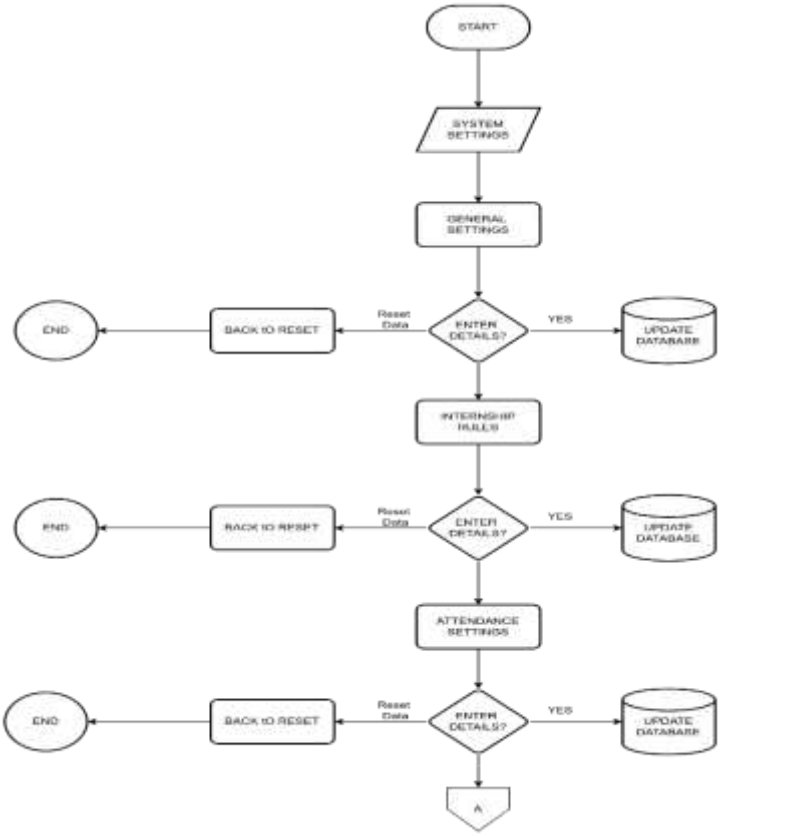

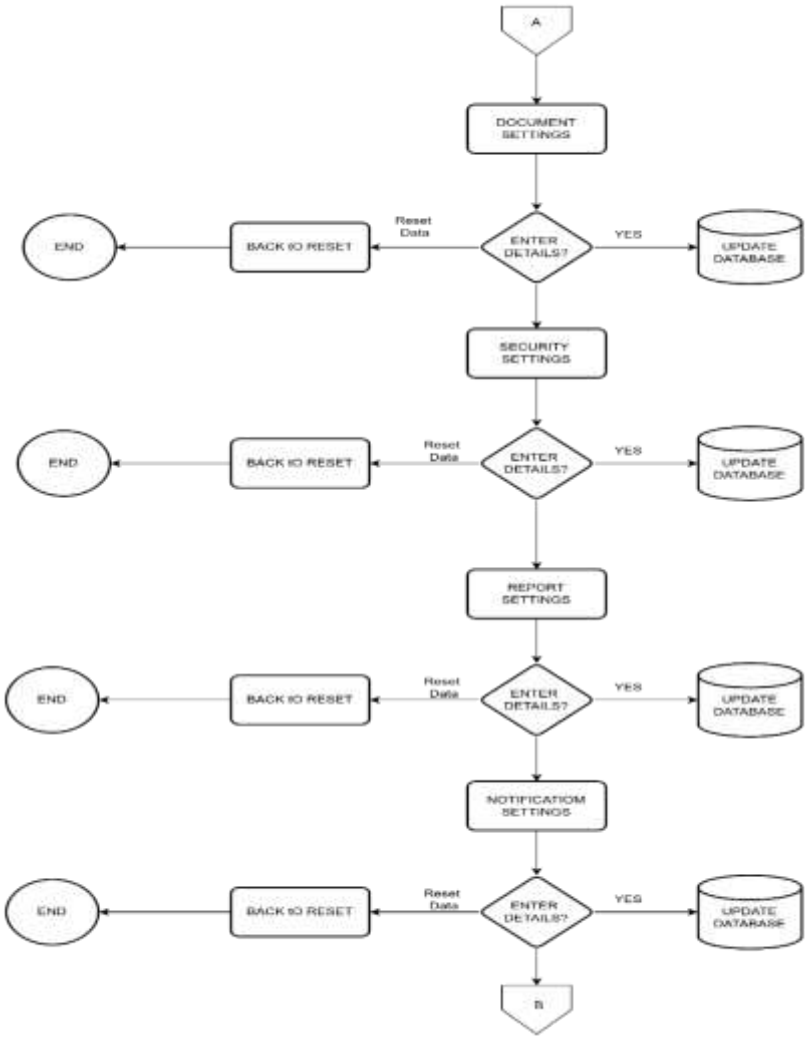

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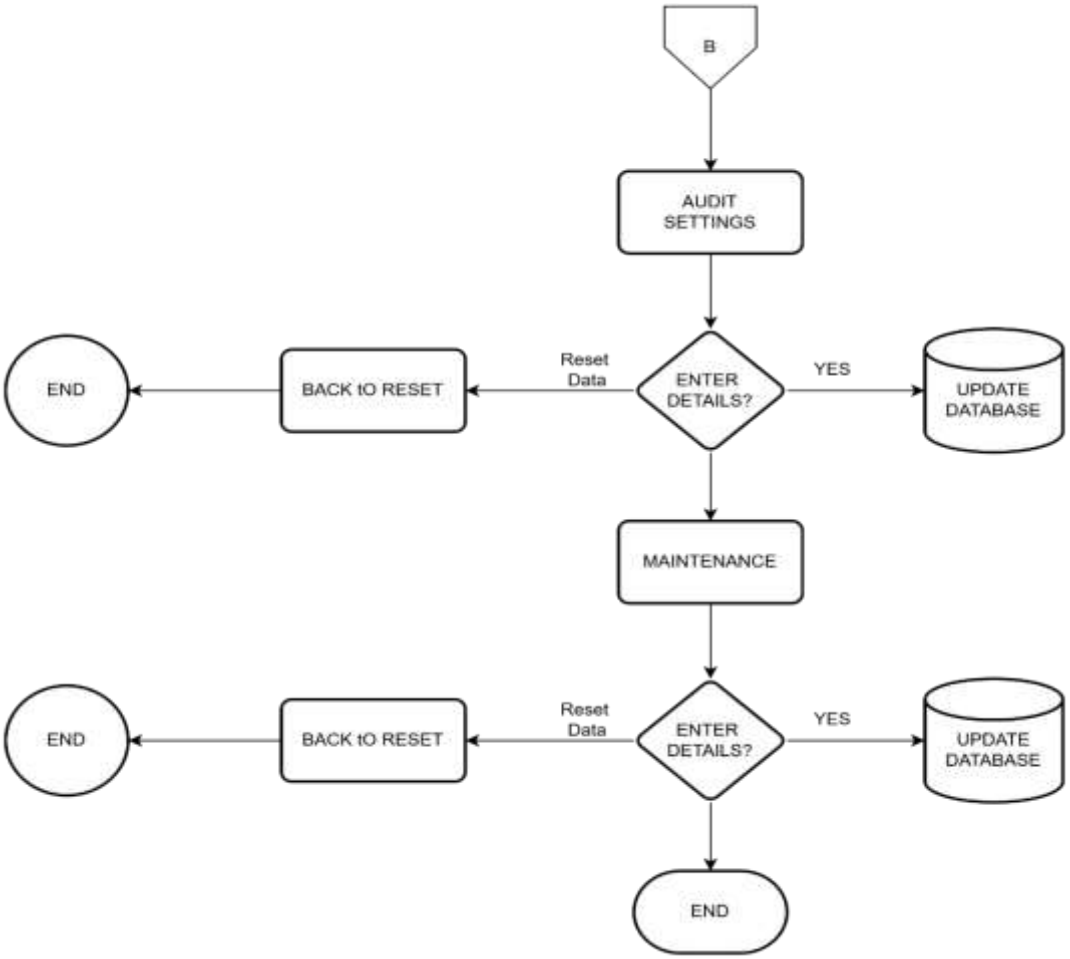
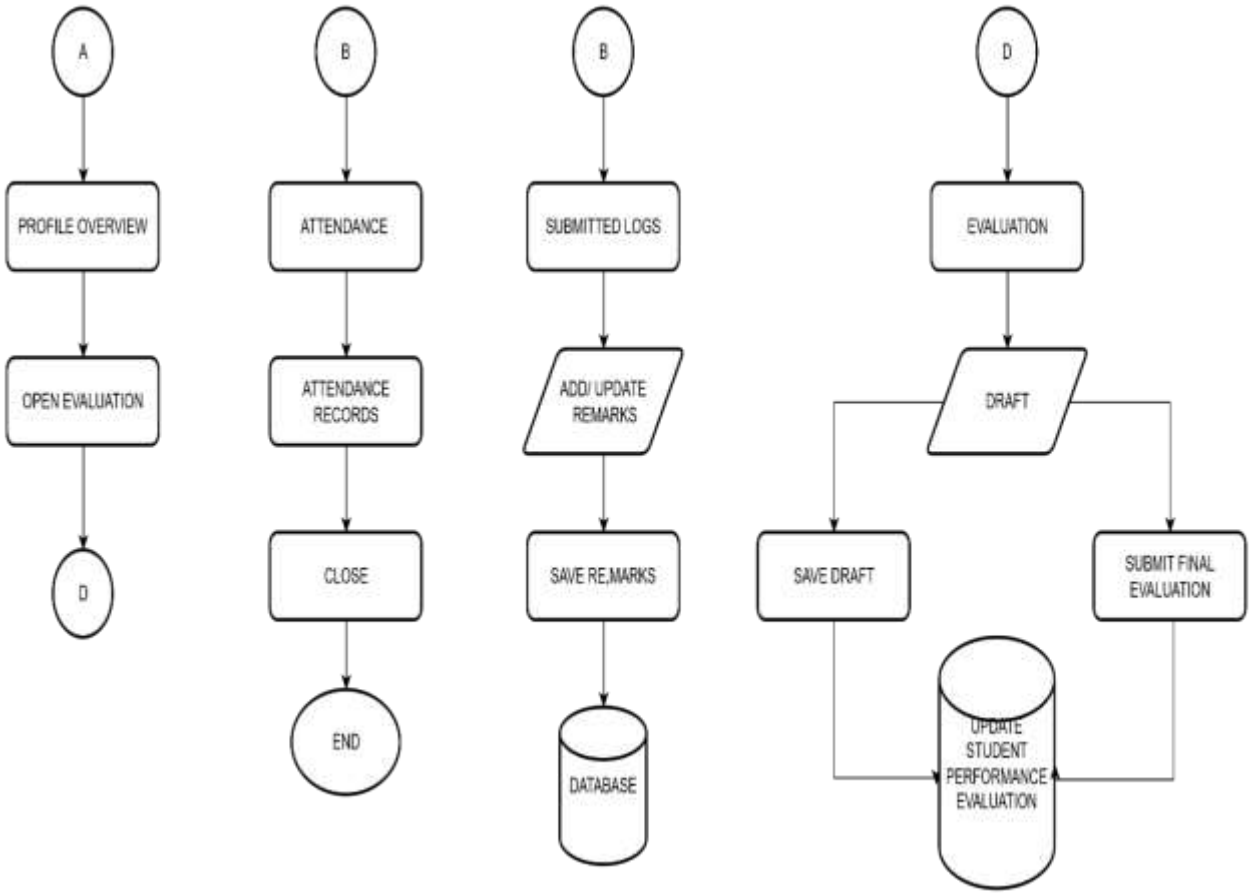


Supervisor My Student Dashboard



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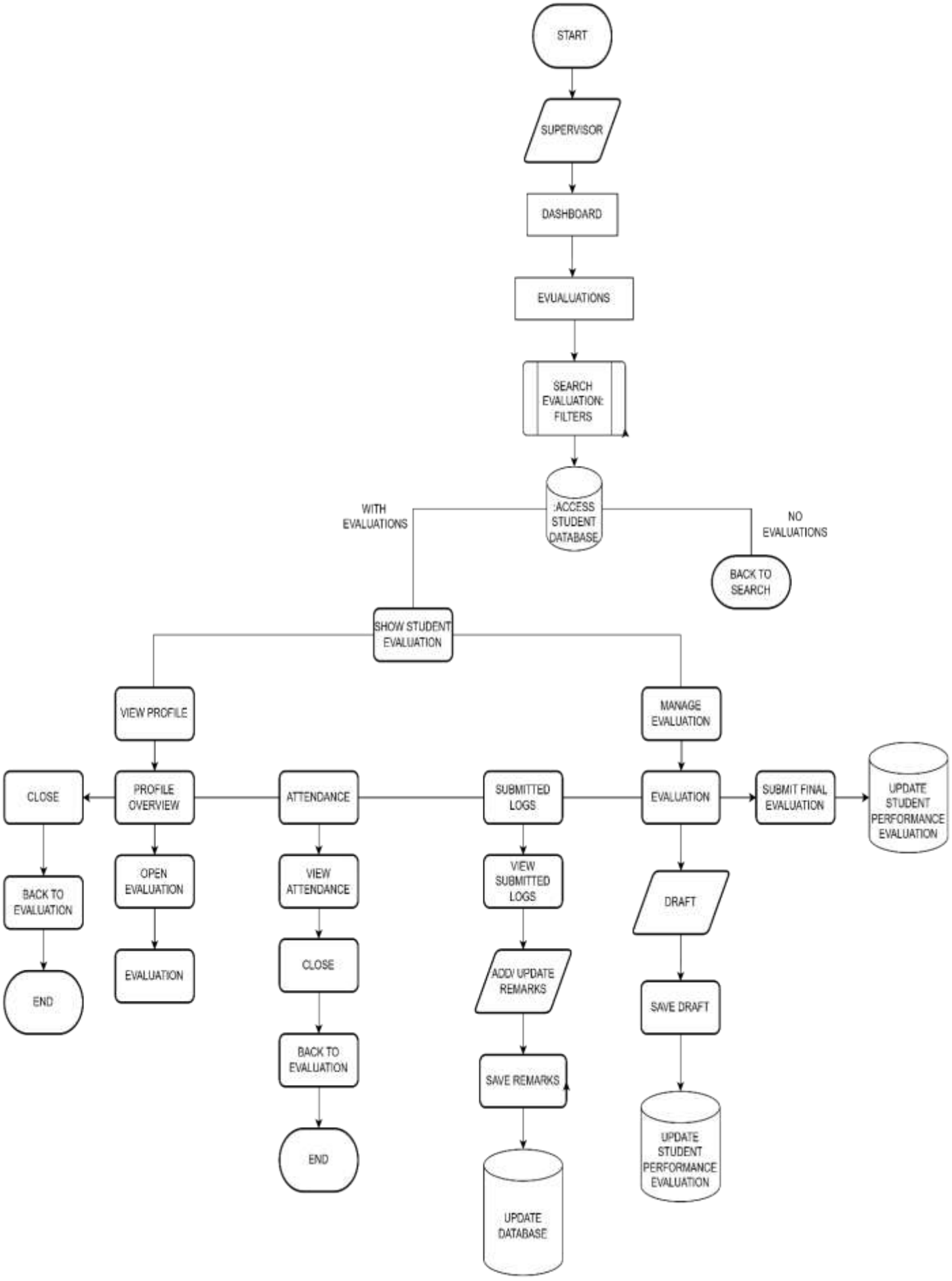
Supervisor Evaluation



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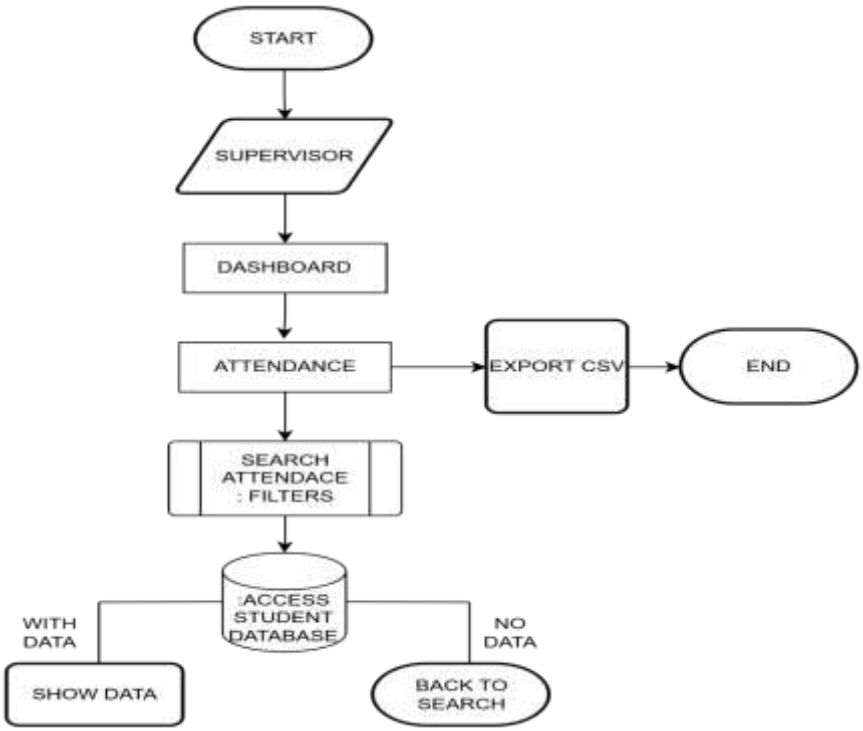
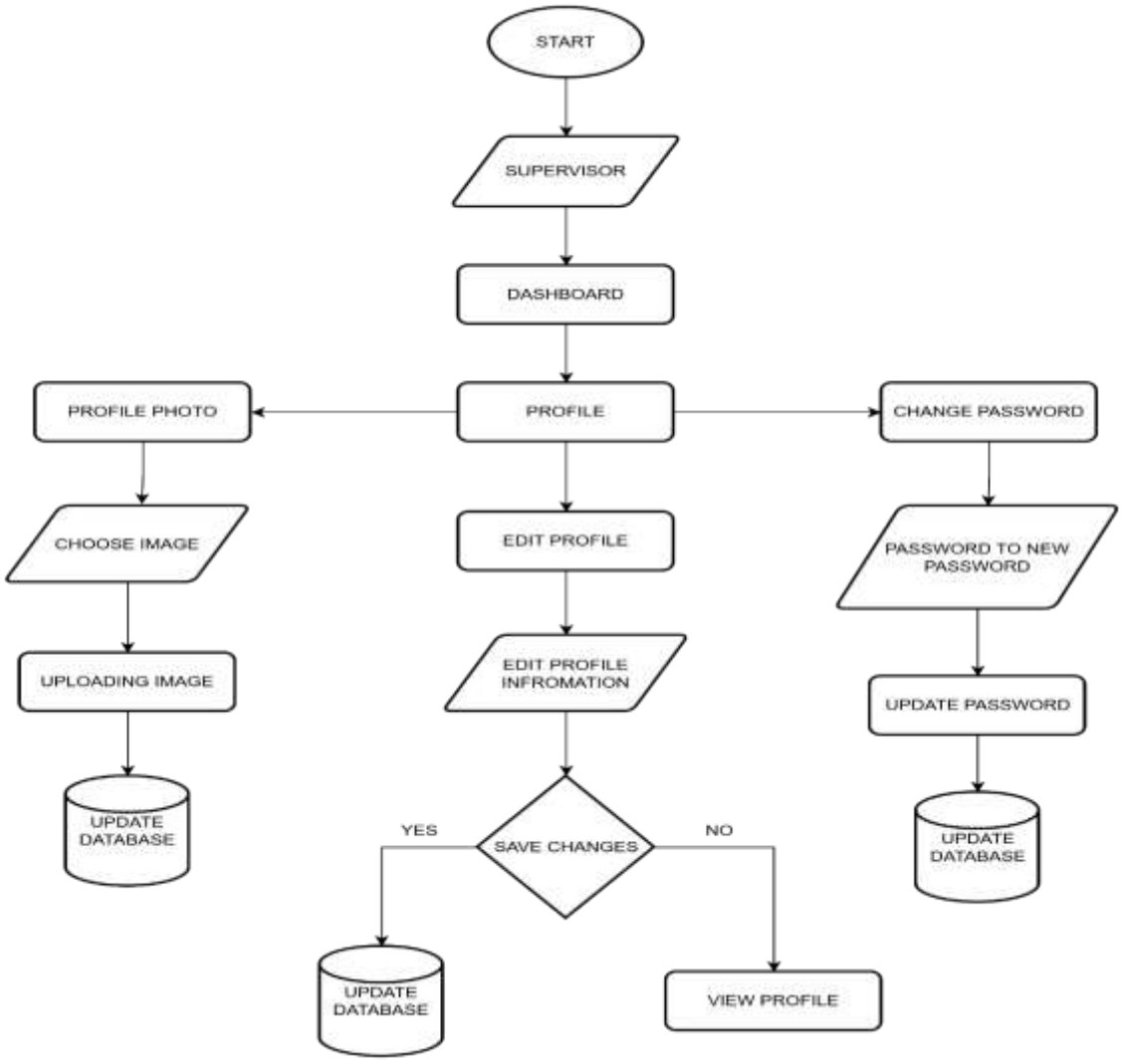
Supervisor Attendance



Supervisor Submitted Logs



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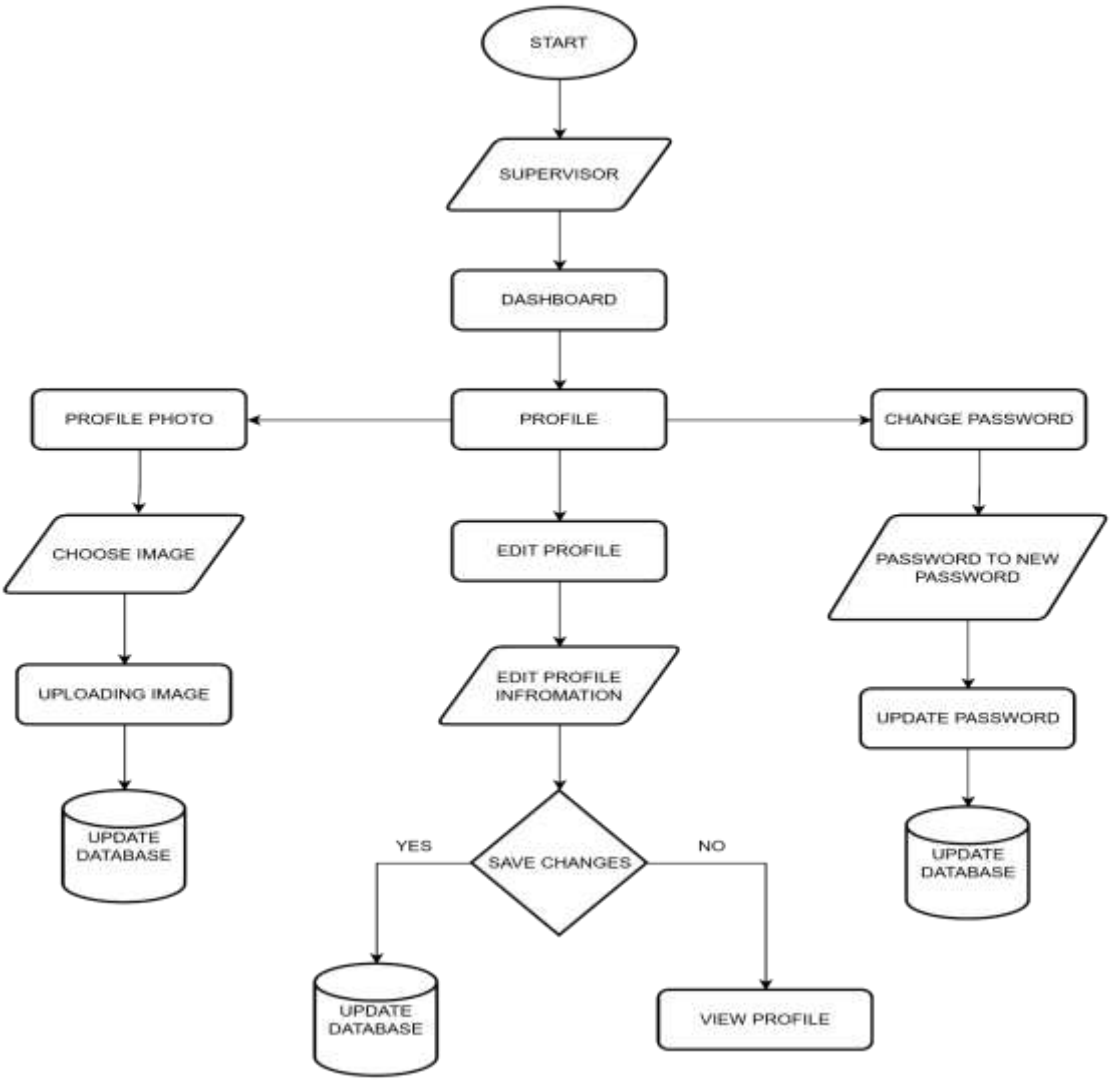
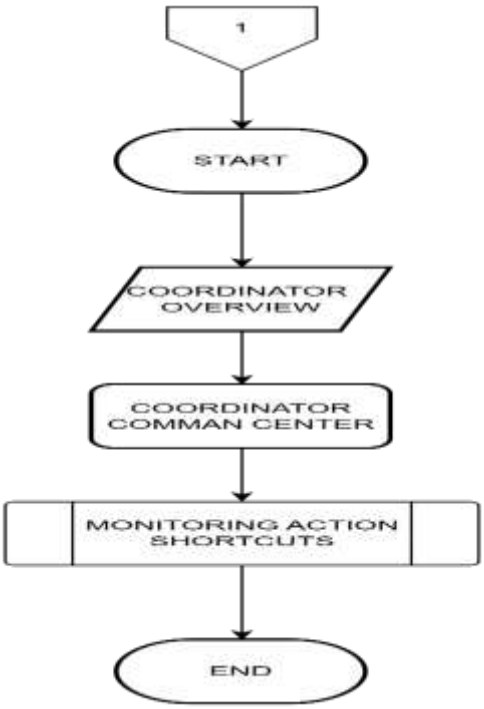
Supervisor Profile



Coordinator Overview



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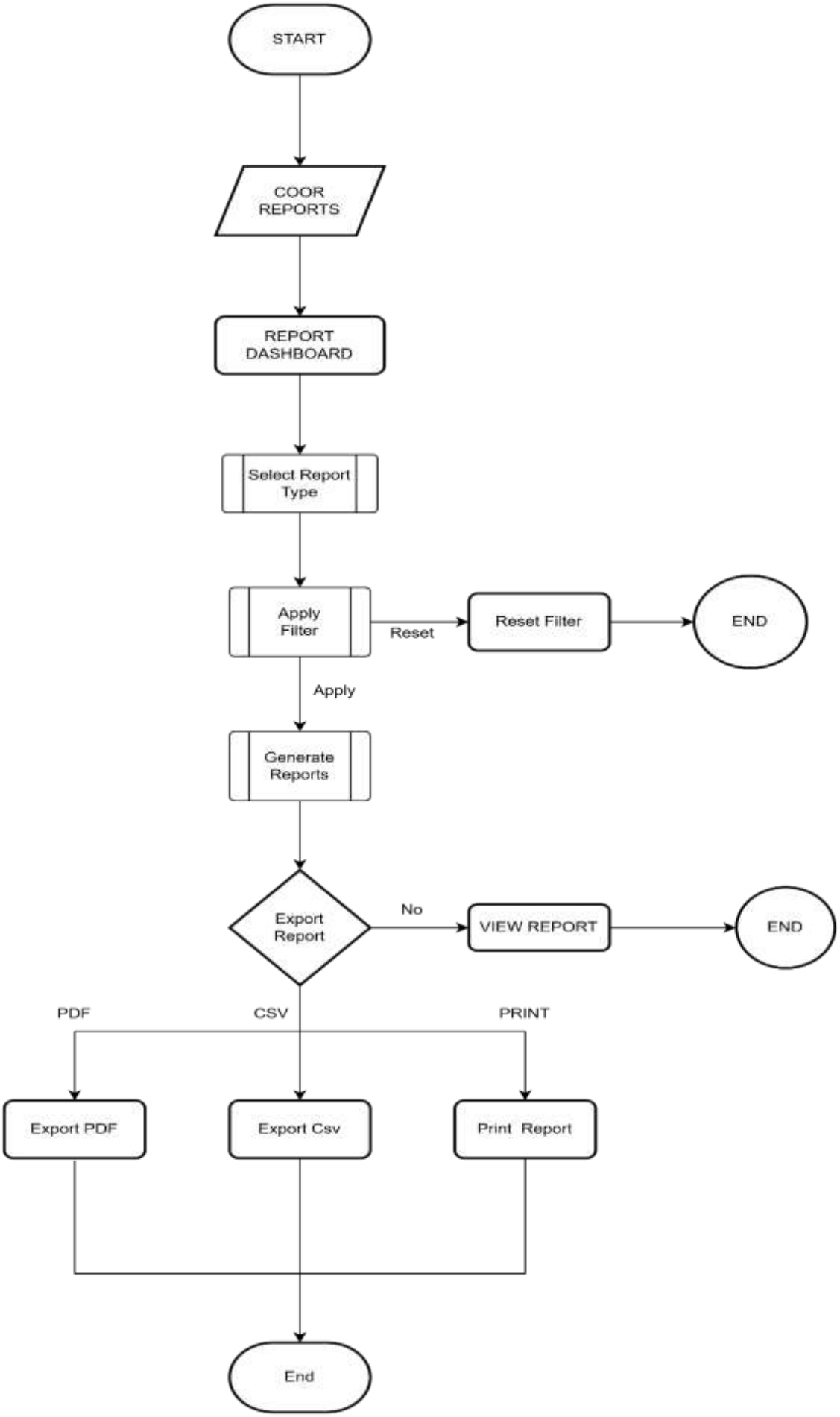
Coordinator Reports



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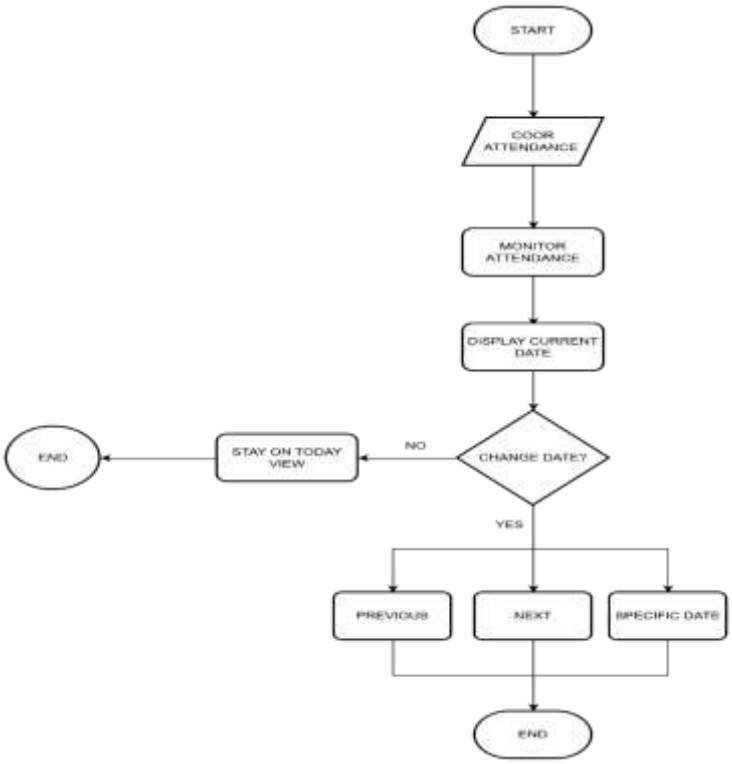
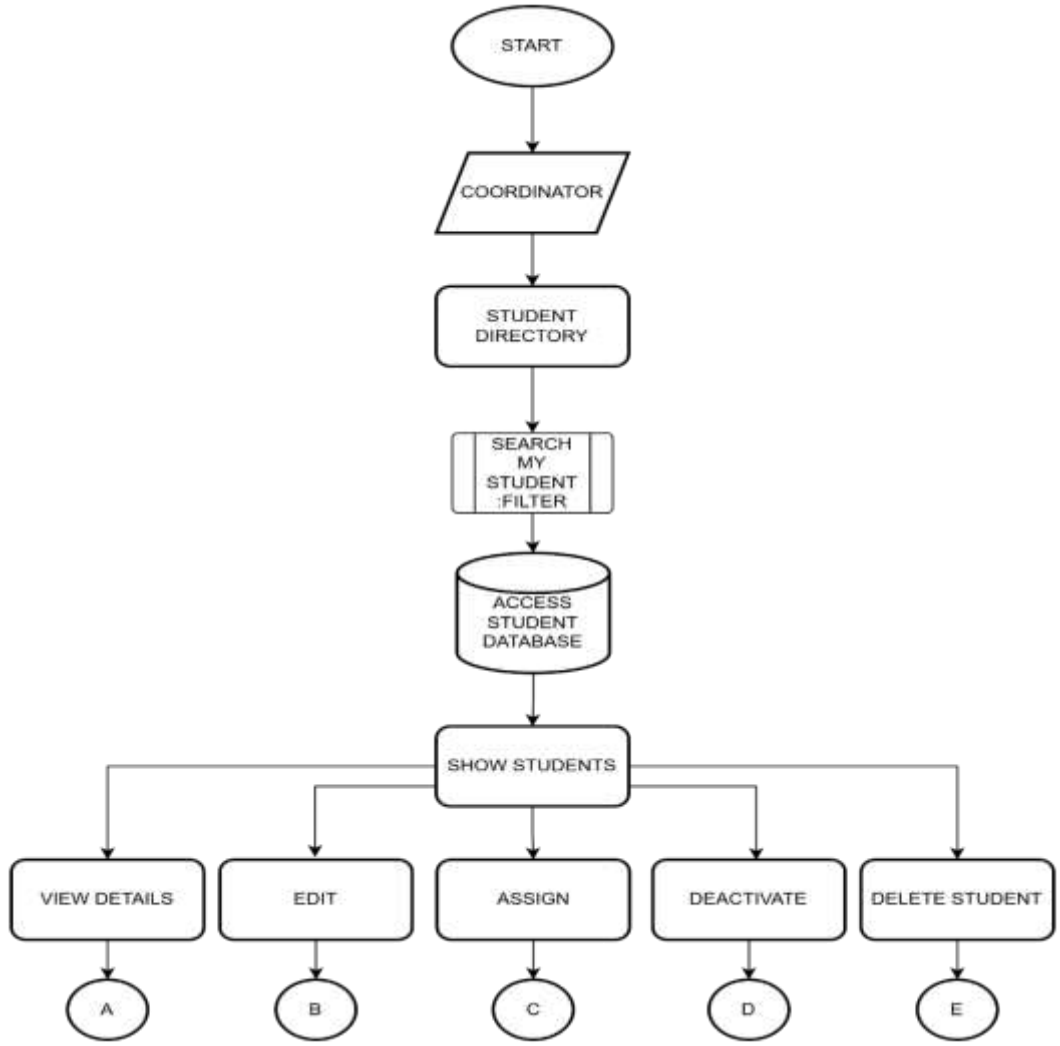
Coordinator Calendar View



Coordinator Student Directory



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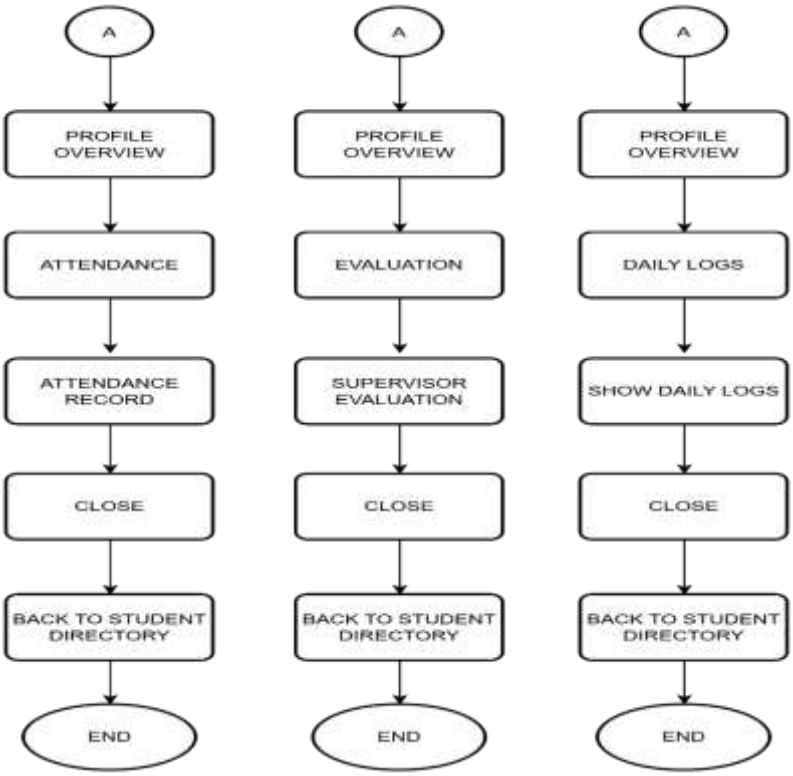

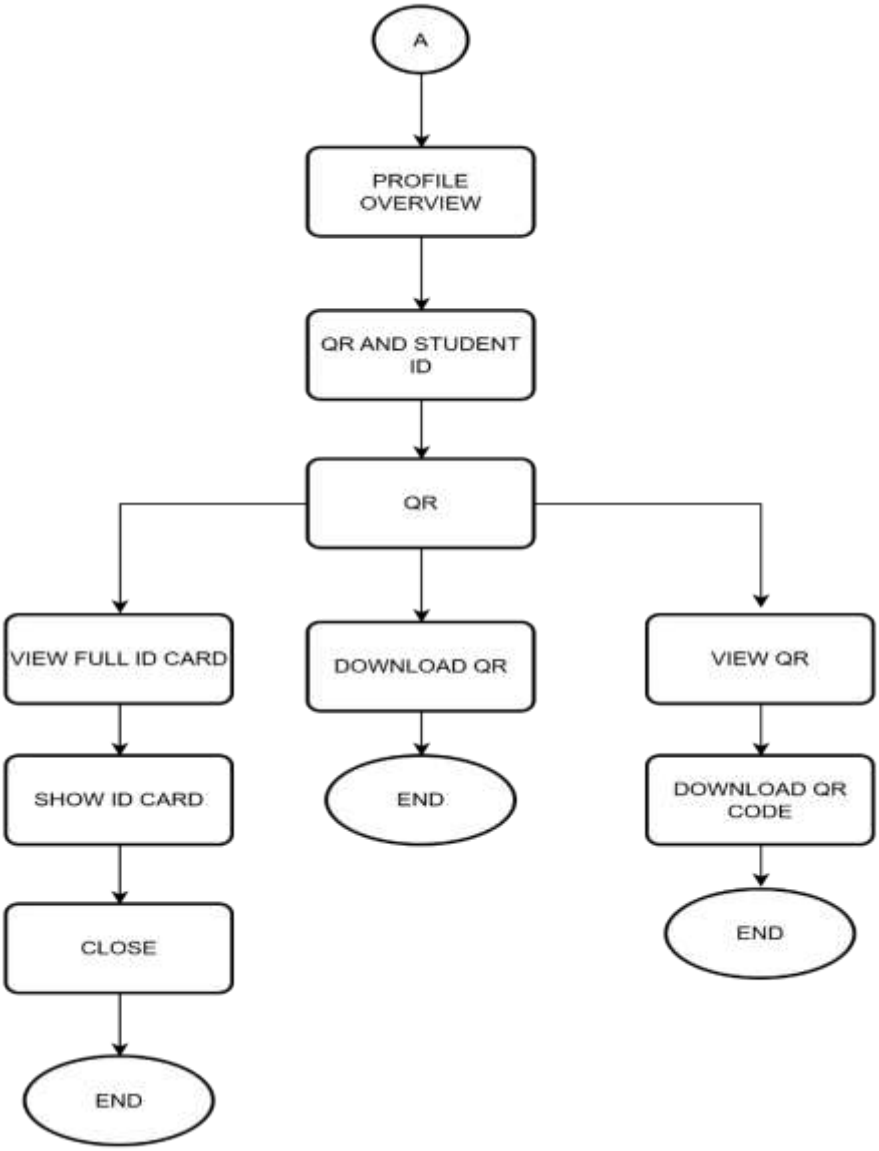

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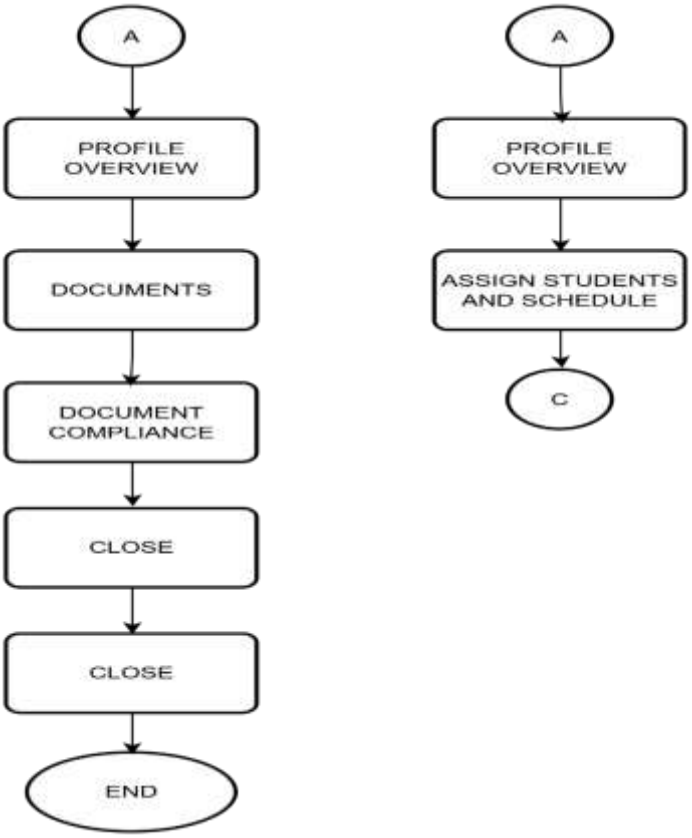

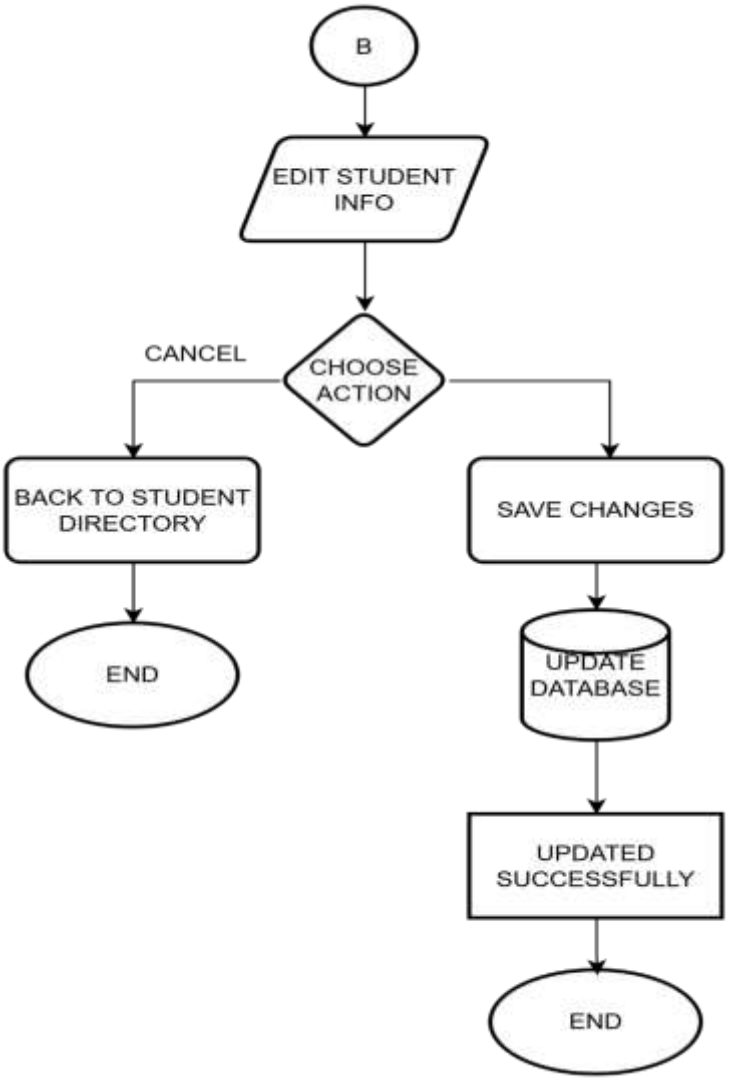

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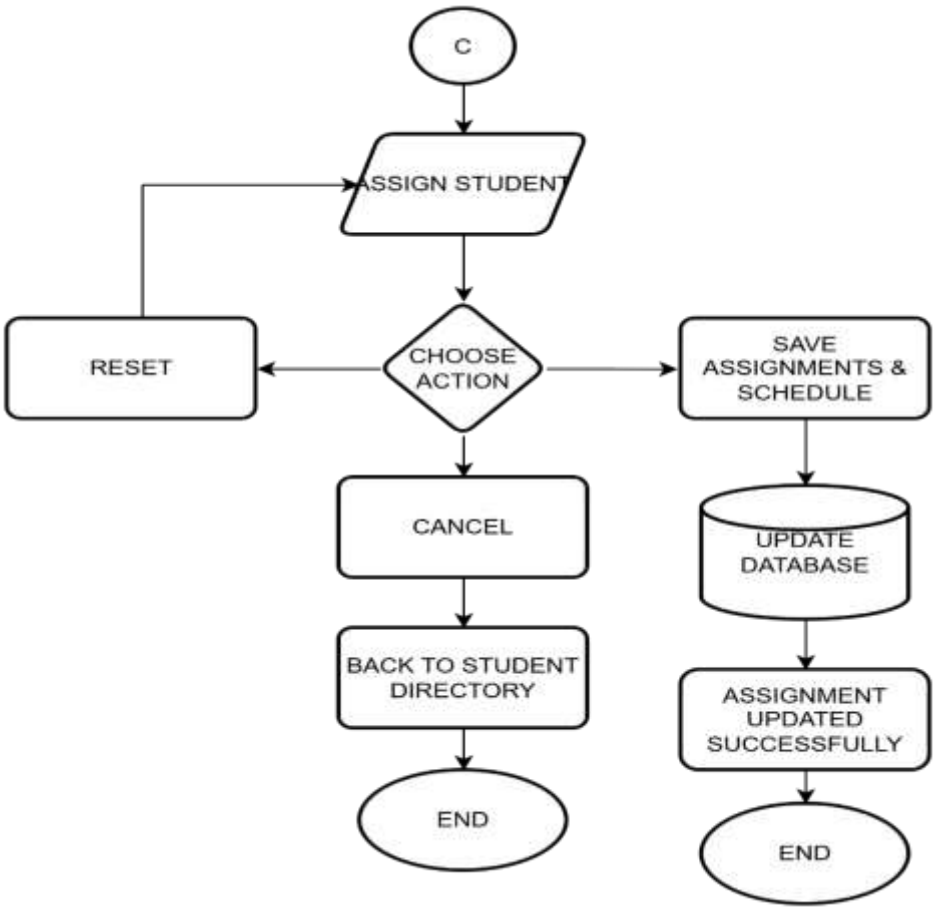

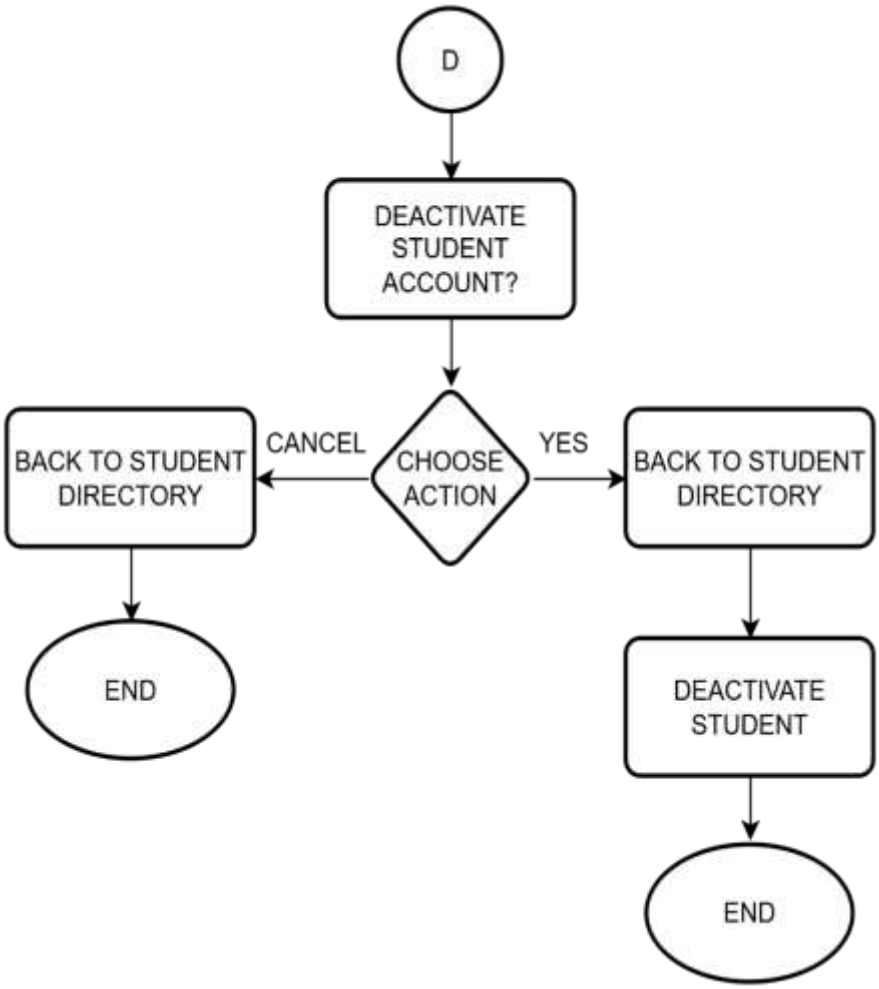

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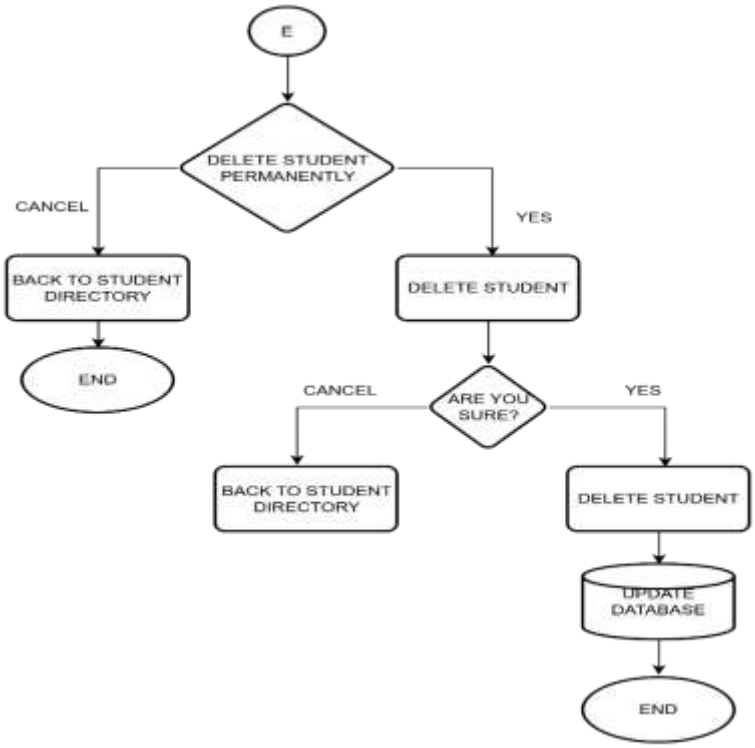
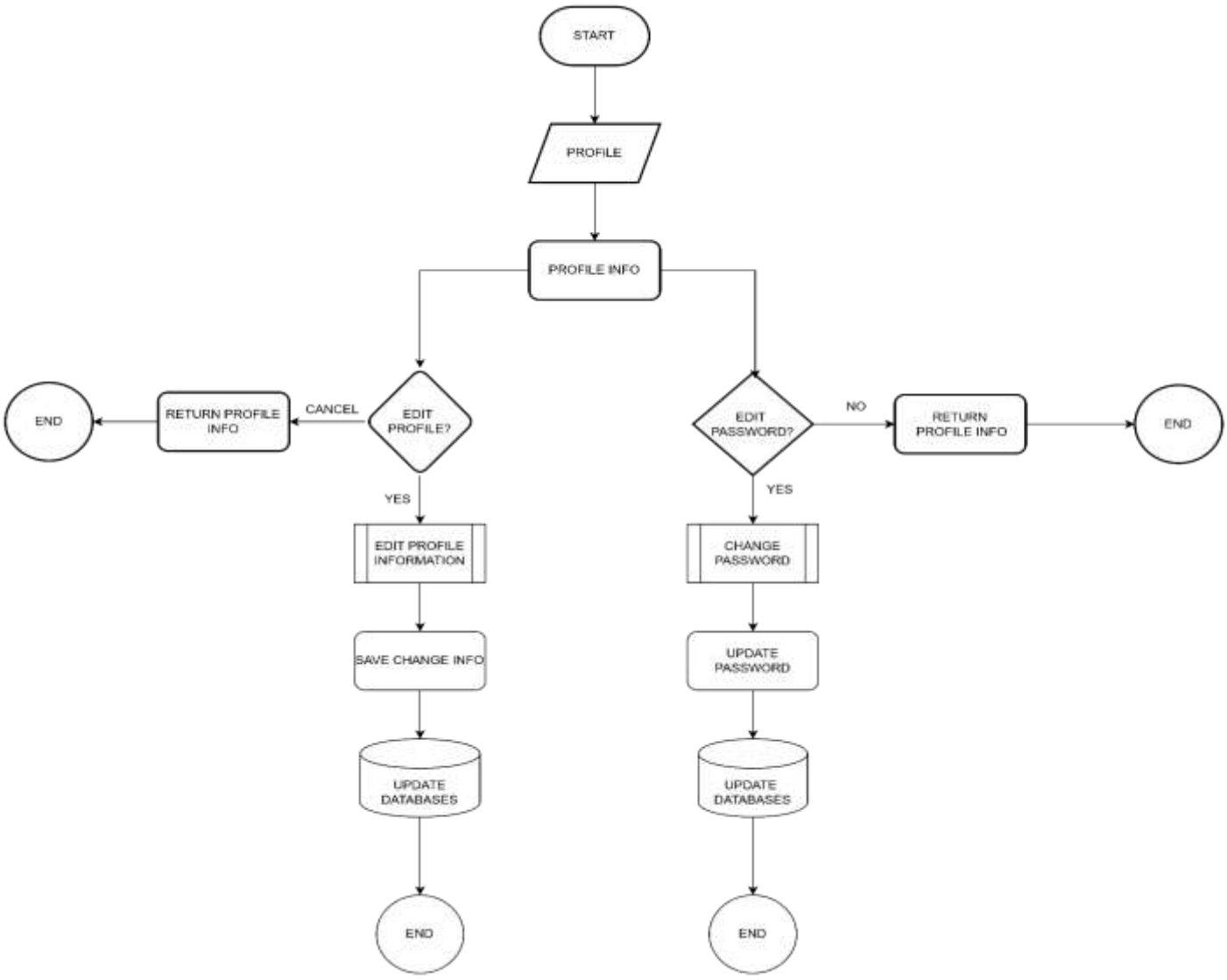


Coordinator Profile



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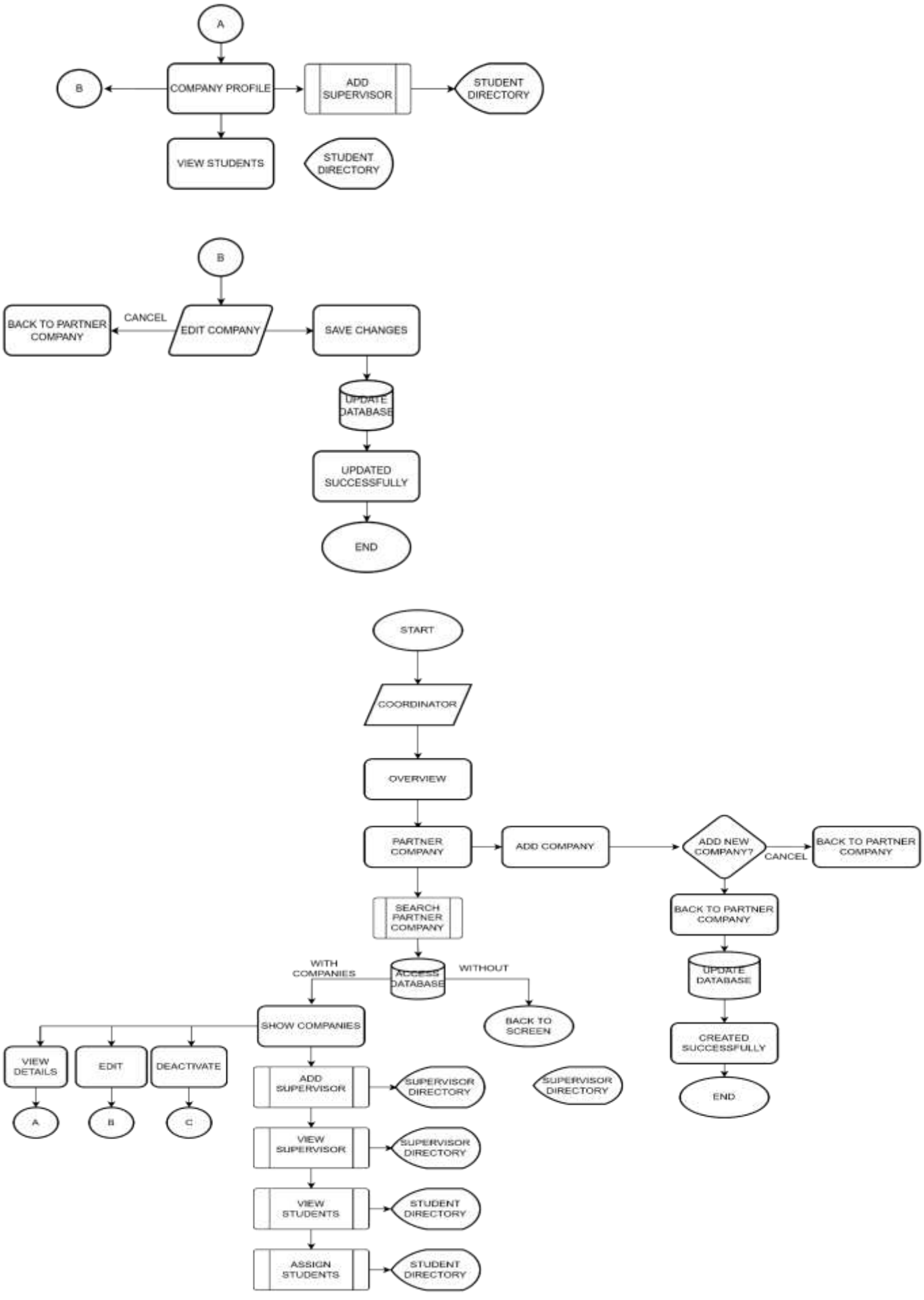
Coordinator Partner Company



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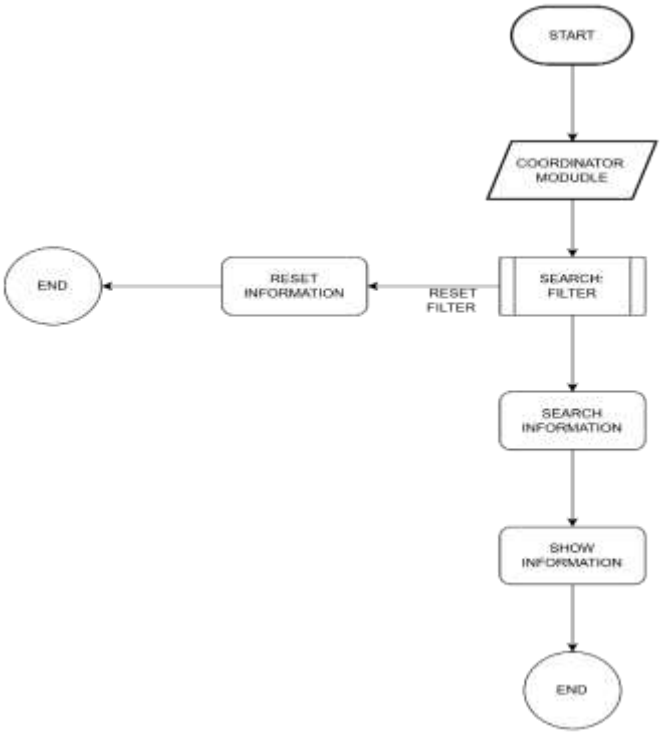
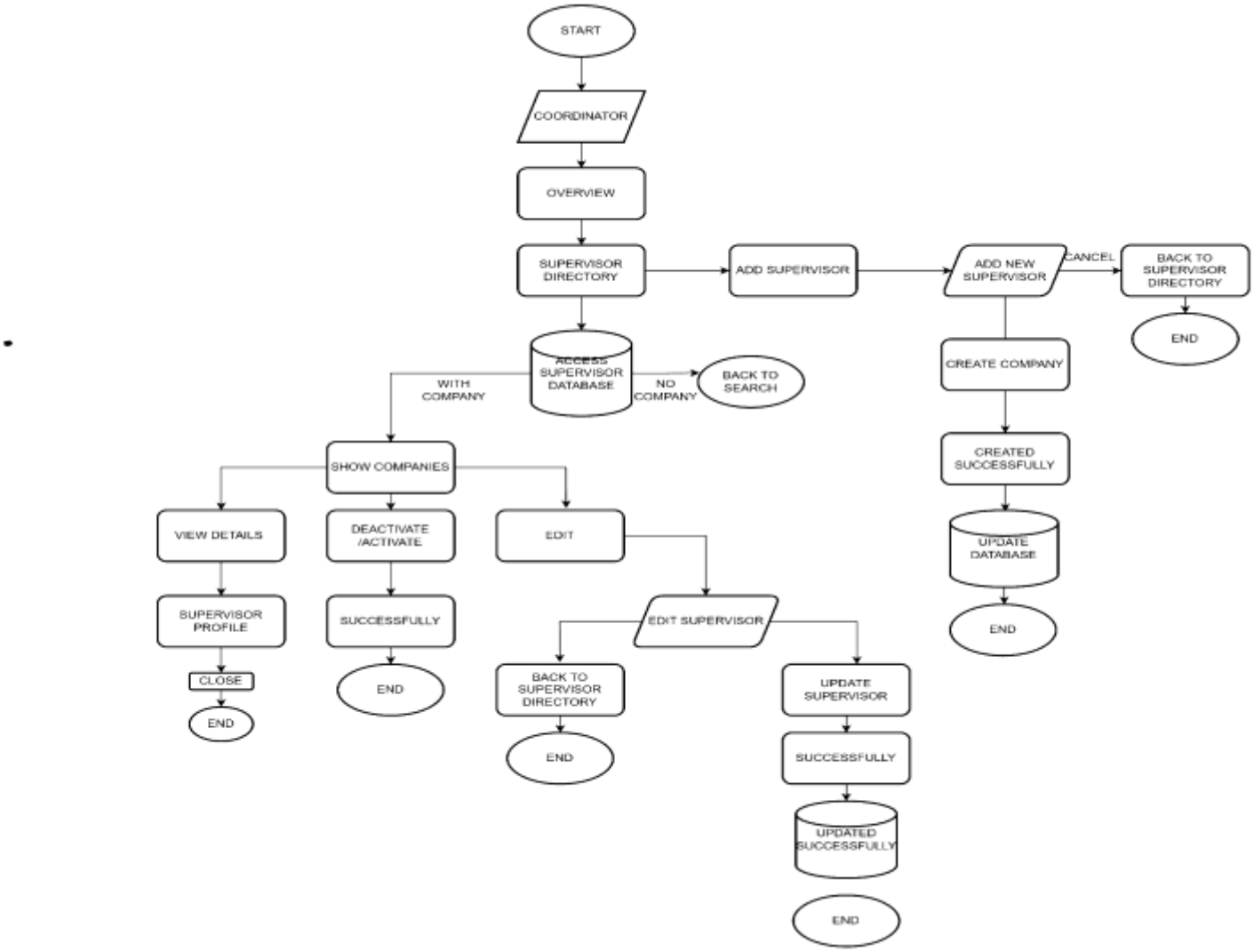
Coordinator Documents



Coordinator Supervisor Directory



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Ethical Considerations

The researchers commit to upholding the highest standards of academic and research ethics throughout the study, particularly during data collection and system development.

1. **Informed Consent:** All participants will be fully informed about the purpose, procedure, and expected duration of the study before participation. They will sign an Informed Consent Form, ensuring their participation is entirely **voluntary**.

2. **Confidentiality and Anonymity:** All responses and identities of the participants will be kept strictly confidential. No identifying information will be used in the thesis presentation or system outputs. Data will be aggregated and reported in summary form only.

3. **Voluntary Participation and Right to Withdraw:** Participants have the right to decline participation at any point during the study without facing any penalty or consequence.

4. **Data Security and Privacy:** The system will be developed with security features to protect user data. All collected electronic data will be stored securely, protected by passwords, and accessible only to the research team. Upon completion of the study, data will be archived or disposed of following institutional guidelines.

5. **Academic Integrity:** All sources used for the development of the system and the writing of the thesis will be properly cited and referenced to avoid plagiarism.

RESULTS AND DISCUSSIONS OF THE GATHERED DATA

This chapter presents the results and discussion of the study entitled “Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan.” The findings discussed in this chapter are based on the data gathered through paper-based survey questionnaires distributed to student interns.

The collected data, including frequency, percentage, and weighted mean, were analyzed to evaluate the effectiveness of the proposed system in terms of usability, accessibility, reliability, security, and overall performance. The results are presented and interpreted systematically to highlight trends and patterns in the responses.

Furthermore, this chapter focuses on the analysis of the problems encountered in the current manual internship monitoring process and examines the respondents’ perceptions regarding the proposed web-based system. The discussion of findings provides a clear basis for understanding the need, acceptability, and potential impact of the Internship Monitoring and Management System (IMMS).

A. Presentation of Gathered Data in Tabular Form

The gathered data are presented in tabular form in this chapter to provide a clear and organized summary of the responses collected from the participants of the study. The data were obtained through paper-based survey questionnaires distributed to student interns, supervisors, and coordinators of St. Clare College of Caloocan.

The tables include the frequency, percentage, and weighted mean of responses, which were computed following the statistical treatment discussed in Chapter III. The frequency and percentage were used to describe the demographic profile of the respondents in terms of age, course, and gender, while the weighted mean was utilized to evaluate the respondents’ perceptions regarding:

1. Problems encountered in the current manual internship monitoring process; and

2. System features and user expectations for the proposed Internship Monitoring and Management System (IMMS).

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Furthermore, the results are arranged systematically to highlight trends, identify the most significant issues in the existing system, and determine the level of acceptability of the proposed web-based solution. The tabular presentation allows for easier interpretation and comparison of data, serving as the basis for the analysis, conclusions, and recommendations of the study.

Student Interns Survey: Pre-Implementation

Part I: Respondent Profile

Age	Frequency	Percentage %
18-21	43	86%
22-25	7	14%
26-29	0	0%
30 and above	0	0%

Course	Frequency	Percentage %
Hospitality Management	25	50%
Tourism	25	50%

Gender	Frequency	Percentage %
Female	29	58%
Male	18	36%
Others	3	6%

Table I, II, & III: Frequency of Respondent Profile

The respondent profile shows that most participants are aged 18–21 (86%), with the remaining 14% aged 22–25. No respondents fall under older age groups, indicating that all participants are typical college students.

In terms of course distribution, Hospitality Management and Tourism are equally represented at 50% each, ensuring balanced input from both programs.

For gender, most respondents are female (58%), followed by male (36%), and others (6%), showing a slightly higher female participation.

Overall, the respondents are mainly young college students from both programs with a balanced representation, making the data suitable for evaluating the proposed Internship Monito.40ring and Management System (IMMS).

Part II: Problems Encountered In The Internship Process

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)	Weighted Mean	Ranking
1. The traditional Daily Time Record (DTR)	31	1	4	2	1	4.40	6th

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process makes internship monitoring difficult.		2					
2. Important internship documents are prone to being lost or misplaced.	29	18	2	1	0	4.50	5th
3. Manual submission of internship requirements is time-consuming.	32	16	2	0	0	4.60	1st
4. I often lose track of my rendered internship hours.	25	17	6	1	1	4.28	9th
5. The manual system allows manipulation or falsification of records.	24	21	3	1	1	4.32	7th
6. There is no proper validation of submitted internship documents.	23	18	8	1	0	4.26	10th
7. Compiling internship reports manually is inconvenient.	23	22	4	0	1	4.32	7th
8. Updating attendance and progress reports takes too long.	33	14	1	1	1	4.54	4th
9. Receiving updates from internship coordinators is difficult.	32	16	2	0	0	4.60	1st
10. The lack of a centralized system makes internship monitoring inefficient.	32	15	2	1	0	4.56	3rd

Table I: Problems Encountered in the Internship Process

The results reveal that the respondents strongly agree that there are several existing problems in the current internship process, as all indicators obtained high weighted mean scores ranging from 4.26 to 4.60, which falls under the verbal interpretation of Strongly Agree. This indicates that students commonly experience challenges in the traditional and manual internship system. The consistently high ratings imply that the present process is no longer sufficient to address the growing demands of internship management, particularly in handling student records, monitoring attendance, processing documents, and maintaining communication between students and coordinators. The findings further suggest that modernization and digital transformation are necessary to improve the efficiency of the current internship process.

The highest-rated indicators are manual submission of internship requirements is time-consuming (Q3) and receiving updates from internship coordinators is difficult (Q9), both with a weighted mean of 4.60, ranked 1st. This implies that respondents consider delays in submitting requirements and poor communication as the most pressing concerns in the internship process. Since many transactions still rely on face-to-face submission, printed documents, and informal communication channels, students may experience inconvenience, confusion, and unnecessary waiting time. These issues may also lead to missed deadlines, incomplete submissions, and misunderstandings regarding internship policies and schedules.

The next highest indicator is the lack of a centralized system makes internship monitoring inefficient (Q10) with a weighted mean of 4.56, ranked 3rd. This suggests that respondents recognize the absence of one organized platform where attendance, documents, progress, and announcements can be accessed in one place. Without a centralized system, students and coordinators may need to use multiple platforms or manual methods, resulting in scattered information and inefficient coordination. Similarly, updating attendance and progress reports takes too long (Q8) obtained a weighted mean of 4.54, ranked 4th, showing that manual recording and updating of

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internship data consumes too much time and effort. This may also delay decision-making and prevent timely interventions when student concerns arise.

Another issue identified by the respondents is that important internship documents are prone to being lost or misplaced (Q2) with a weighted mean of 4.50, ranked 5th. This means that handling physical documents creates risks of loss, damage, duplication, or misfiling. Missing documents can delay student clearances, evaluations, and final completion of internship requirements. In addition, the traditional Daily Time Record (DTR) process makes internship monitoring difficult (Q1) received a weighted mean of 4.40, ranked 6th, indicating that the current attendance system lacks convenience, speed, and reliability in monitoring student attendance records. Paper-based DTR systems are also more vulnerable to human error and incomplete entries.

Furthermore, the manual system allows manipulation or falsification of records (Q5) and compiling internship reports manually is inconvenient (Q7) both obtained a weighted mean of 4.32, ranked 7th. These findings show that manual processes may reduce accuracy, transparency, and reliability of internship records while also creating difficulties when reports need to be prepared. The possibility of inaccurate attendance entries or altered records may affect the fairness and credibility of internship assessments. Manual report preparation may also burden both students and coordinators, especially when dealing with numerous records at the end of the semester.

Meanwhile, students often lose track of their rendered internship hours (Q4) received a weighted mean of 4.28, ranked 9th, suggesting the need for a system that can automatically track completed hours, remaining hours, and attendance summaries in real time. Monitoring internship hours is important because it directly affects completion status and eligibility for graduation requirements. Lastly, there is no proper validation of submitted internship documents (Q6) got the lowest weighted mean of 4.26, ranked 10th, yet it is still interpreted as Strongly Agree, meaning respondents still view this as a serious concern. This indicates that even the lowest-ranked problem remains significant and should not be disregarded.

The narrow range of weighted mean scores further demonstrates that all listed problems are consistently experienced by the respondents. No indicator received a neutral or disagree interpretation, which means that the issues presented are real and relevant to the students' internship experience. This consistency strengthens the reliability of the gathered data and confirms that the identified concerns are common among respondents rather than isolated cases.

Overall, the results clearly indicate that the current internship process is inefficient, outdated, and heavily dependent on manual procedures. The system lacks automation, real-time monitoring, secure recordkeeping, and effective communication tools that are necessary in a modern academic environment. The consistent high ratings across all indicators emphasize the urgent need for a centralized and automated Internship Monitoring and Record Management System that can improve communication, secure records, monitor attendance accurately, track rendered hours, validate submitted requirements, and simplify the overall internship management process. Such a system would not only benefit students but also assist coordinators and partner supervisors in managing internship activities more effectively and efficiently.

Part III: System Features And Expectations

Indicators	SA (5)	A (4)	N (3)	D (2)	SD (1)	Weighted Mean	Ranking
1. A digital DTR system would improve internship monitoring.	40	9	1	0	0	4.78	4th
2. Online document submission would reduce lost requirements.	29	16	4	1	0	4.46	9th
3. Automated tracking hours would help students monitor progress accurately.	36	13	0	1	0	4.66	7th

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4. Document validation features would improve data integrity.	27	15	7	0	1	4.34	10th
5. A centralized platform would make internship management more efficient.	35	12	3	0	0	4.64	8th
6. Real-time updates from coordinators are necessary.	28	19	3	0	0	4.50	5th
7. The system should generate internship reports automatically.	36	10	3	0	1	4.62	6th
8. The system would reduce manual paperwork.	25	22	2	1	0	4.42	9th
9. The system should be easy to use for students and coordinators.	38	9	2	1	0	4.66	7th
10. The system would improve overall internship experience.	40	9	1	0	0-	4.78	4th

Table II: System Features and Expectations

The results indicate that the respondents strongly agree on the importance of implementing a digital internship system, as all indicators received high weighted mean scores ranging from 4.34 to 4.78, which falls under the verbal interpretation of Strongly Agree. This shows that the respondents have positive expectations regarding the proposed system and believe that technology can significantly improve the current internship process. The consistently high ratings further imply that students recognize the value of automation, centralized management, and digital tools in addressing the problems identified in the existing manual internship system.

The highest-rated indicators are a digital DTR system would improve internship monitoring (Q1) and the system would improve overall internship experience (Q10), both with a weighted mean of 4.78, ranked 1st. This suggests that respondents strongly believe that replacing the traditional attendance process with a digital Daily Time Record system can make monitoring more accurate, faster, and more convenient. In addition, respondents expect that the proposed system will positively transform their internship experience by reducing stress, minimizing delays, and making internship tasks easier to accomplish. These results emphasize the importance of modernizing attendance and recordkeeping processes.

Another highly rated expectation is automated tracking hours would help students monitor progress accurately (Q3) and the system should be easy to use for students and coordinators (Q9), both with a weighted mean of 4.66, ranked 3rd. This means that respondents value a user-friendly system with automatic hour computation and progress monitoring features. Since internship completion depends on the required number of hours, having an automated tracker can help students stay informed of their completed and remaining hours. Likewise, ease of use is essential because both students and coordinators need a system that is simple, accessible, and efficient to operate without requiring extensive technical knowledge.

The indicator a centralized platform would make internship management more efficient (Q5) obtained a weighted mean of 4.64, ranked 5th. This suggests that respondents see the need for a single platform where attendance records, documents, progress reports, announcements, and evaluations can be managed in one place. A centralized system can eliminate the confusion caused by using multiple manual methods or separate communication channels. Similarly, the system should generate internship reports automatically (Q7) received a weighted mean of 4.62, ranked 6th, indicating that respondents appreciate the convenience of automated report generation. This feature can save time and reduce errors when preparing attendance summaries, rendered hours, and completion reports.

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Furthermore, real-time updates from coordinators are necessary (Q6) obtained a weighted mean of 4.50, ranked 7th. This means that respondents consider timely communication and immediate announcements as important features of the proposed system. Real-time notifications may help students stay informed about deadlines, schedule changes, and internship requirements. On the other hand, online document submission would reduce lost requirements (Q2) received a weighted mean of 4.46, ranked 8th, showing that respondents believe digital submission can minimize misplaced or missing requirements. Electronic document handling can also provide easier storage, retrieval, and monitoring of submitted files.

Another indicator, the system would reduce manual paperwork (Q8), obtained a weighted mean of 4.42, ranked 9th. This implies that respondents expect the proposed system to lessen the dependence on printed forms, handwritten records, and repetitive paperwork. Reducing manual paperwork can save time, lower operational costs, and make the overall internship process more environmentally friendly. Meanwhile, document validation features would improve data integrity (Q4) received the lowest weighted mean of 4.34, ranked 10th. Although it ranked lowest, it is still interpreted as Strongly Agree, which means respondents still consider this feature highly important. This shows that validating submitted documents remains necessary to ensure authenticity, completeness, and reliability of records.

The narrow range of weighted mean scores demonstrates that all proposed system features were positively accepted by the respondents. None of the indicators received a neutral or negative interpretation, indicating strong support for the implementation of a digital internship management solution. This consistency confirms that respondents view each feature as beneficial and relevant to improving their internship experience.

Overall, the findings reveal strong user support for a centralized and automated Internship Monitoring and Record Management System. Respondents expect the system to improve attendance monitoring, simplify document submission, automate hour tracking, generate reports efficiently, provide real-time communication, and reduce manual workload. The results clearly show that the proposed system is seen as a practical and effective solution that can enhance accuracy, efficiency, convenience, and the overall quality of internship management for students, coordinators, and partner supervisors.

Student Interns Survey: Post-Survey Implementation

Part I: Respondent Profile

Age	**Frequency**	**Percentage %**
18-21	45	90%
22-25	5	10%
26-29	0	0%
30 and above	0	0%
Total	50	100%

Course	**Frequency**	**Percentage %**
Hospitality Management	25	50%
Tourism	25	50%
Total	50	100%

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Gender	Frequency	Percentage %
Female	31	62%
Male	14	28%
Others	5	10%
Total	50	100%

Table I, II, & III: Summary Of Respondent Profile

The post-survey respondents consisted of 50 student interns who evaluated the developed Internship Monitoring and Management System (IMMS) after its implementation. In terms of age, the majority of respondents were 18–21 years old with 45 respondents (90%), while 5 respondents (10%) were aged 22–25 years old. No respondents belonged to the age groups 26–29 years old and 30 years old and above. Compared to the pre-survey results, the age distribution remained similar, indicating that the same target group of student interns participated in both evaluations.

For course distribution, Hospitality Management and Tourism were equally represented with 25 respondents (50%) each. This is consistent with the pre-survey results, showing balanced participation from both academic programs and ensuring fair representation of students who undergo internship requirements.

In terms of gender, the majority of respondents were Female with 31 respondents (62%), followed by Male with 14 respondents (28%), and Others with 5 respondents (10%). Compared with the pre-survey profile, female respondents continued to represent the larger portion of participants. Overall, the respondent profile confirms that the survey data were gathered from qualified student interns capable of evaluating the effectiveness of the system.

Part II: Improvements In The Intership Process After System Implementation

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)	Weighted Mean	Ranking
1. The system made internship monitoring easier compared to the manual process.	41	5	3	1	0	4.72	1st
2. The system reduced the chances of losing important documents.	36	12	2	0	0	4.68	4th
3. Submitting internship requirements is now faster and more convenient	38	10	1	1	0	4.70	3rd
4. The system helped me accurately track my rendered internship hours.	33	14	3	0	0	4.60	5th
5. The system minimized manipulation or falsification of records.	34	12	4	0	0	4.60	5th
6. There is proper validation of submitted internship documents in the system.	40	6	4	0	0	4.72	1st
7. Generating internship reports is now more convenient.	33	12	5	0	0	4.56	8th
8. Updating attendance and progress reports is faster using the system.	37	6	3	3	1	4.50	10th

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9. Receiving updates from internship coordinators is easier.	34	11	3	2	0	4.54	9th
10. The system improved overall efficiency in internship monitoring.	39	5	4	1	0	4.581	7th

Table I: Summary Of Improvements In The Internship Process After System Implementation

The post-survey results reveal that the respondents strongly agree that the implementation of the Internship Monitoring and Management System (IMMS) brought significant improvements to the internship process. All indicators obtained high weighted mean scores ranging from 4.50 to 4.72, which falls under the verbal interpretation of Strongly Agree. This indicates that the respondents positively evaluated the system after using it and recognized its effectiveness in solving the common problems experienced under the previous manual process. The findings further suggest that the implementation of the proposed system successfully enhanced efficiency, convenience, monitoring accuracy, and communication in internship management.

The highest-rated indicators are the system made internship monitoring easier compared to the manual process (Q1) and there is proper validation of submitted internship documents in the system (Q6), both with a weighted mean of 4.72, ranked 1st. This implies that respondents strongly appreciated the improvements in monitoring functions and document verification processes. Compared to the old manual system, the digital platform provided a more organized and reliable method for checking attendance, tracking progress, and validating submitted requirements. These results confirm that automation significantly improved the management of internship records and processes.

Another highly rated indicator is submitting internship requirements is now faster and more convenient (Q3) with a weighted mean of 4.70, ranked 3rd. This means that respondents experienced greater convenience in submitting requirements through the system. Instead of relying on physical submissions and face-to-face transactions, students were able to upload documents digitally, reducing delays and unnecessary effort. Likewise, the system reduced the chances of losing important documents (Q2) received a weighted mean of 4.68, ranked 4th, indicating that the digital storage and organized records management features effectively addressed the common issue of misplaced or missing documents.

Furthermore, the system helped me accurately track my rendered internship hours (Q4) and the system minimized manipulation or falsification of records (Q5) both obtained a weighted mean of 4.60, ranked 5th. These findings suggest that the respondents recognized the benefits of automated tracking and secure data management. The automatic monitoring of completed internship hours enabled students to stay updated with their progress, while the system's controlled digital records reduced the possibility of inaccurate entries, unauthorized changes, or falsification of attendance and reports.

The indicator the system improved overall efficiency in internship monitoring (Q10) obtained a weighted mean of 4.58, ranked 7th. This suggests that respondents generally observed smoother and more effective internship management after implementation. Processes that were once slow and repetitive became more streamlined through centralized access to records, submissions, and updates. In addition, generating internship reports is now more convenient (Q7) received a weighted mean of 4.56, ranked 8th, indicating that respondents appreciated the automated report generation feature, which reduced the burden of preparing manual summaries and reports.

Meanwhile, receiving updates from internship coordinators is easier (Q9) garnered a weighted mean of 4.54, ranked 9th. This means that respondents experienced better communication and information dissemination through the system's notification and update features. Timely announcements, reminders, and system messages likely contributed to improved coordination between students and internship coordinators. Lastly, updating attendance and progress reports is faster using the system (Q8) obtained the lowest weighted mean of 4.50, ranked 10th. Although it ranked lowest, it still falls under Strongly Agree, indicating that respondents still viewed this improvement positively. This means that even the lowest-rated feature was still considered effective and beneficial.

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The narrow range of weighted mean scores demonstrates that all improvements introduced by the system were positively recognized by the respondents. None of the indicators received a neutral or negative interpretation, which confirms strong acceptance and satisfaction among users. This consistency strengthens the reliability of the post-survey data and shows that the implemented system met the expectations of the respondents.

When compared to the pre-survey findings, the post-survey results clearly show that the major issues in the manual internship process were successfully addressed by the proposed system. Previously, respondents strongly agreed that manual submission was time-consuming, communication was difficult, monitoring was inefficient, and documents were prone to loss. After implementation, these same areas showed strong improvements through faster submissions, easier communication, accurate monitoring, and secure document management. This demonstrates that the IMMS directly responded to the needs and concerns identified during the initial survey.

Overall, the comparison of pre-survey and post-survey results confirms that the proposed Internship Monitoring and Management System (IMMS) successfully improved the internship process by making monitoring easier, simplifying requirement submissions, organizing records, enhancing communication, ensuring proper validation, and increasing operational efficiency. The results indicate that the system is an effective and practical solution that can modernize internship management and provide long-term benefits to students, coordinators, and partner supervisors.

Part III: System Features Evaluation And User Satisfaction

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)	Weighted Mean	Ranking
1.The digital DTR feature is effective and reliable.	43	7	0	0	0	4.86	2nd
2.Online document submission works properly.	40	4	6	0	0	4.68	7th
3.Automated hour tracking is accurate.	43	2	5	0	0	4.76	5th
4.Document validation improves data integrity.	38	7	5	0	0	4.66	8th
5.The centralized platform is helpful for managing internship records.	41	4	5	0	0	4.72	6th
6.Real-time updates are useful and timely.	35	14	1	0	0	4.68	7th
7.The system generates reports accurately	40	7	3	0	0	4.74	4th
8.The system reduces paperwork significantly.	33	13	4	0	0	4.58	10th
9.The system meets my expectations.	41	9	0	0	0	4.82	3rd
10.I am satisfied with the overall performance of the system.	46	3	1	0	0	4.90	1st

Table I: Summary Of System Features Evaluation And User Satisfaction

The post-survey results reveal that the respondents strongly agree in evaluating the effectiveness and overall performance of the implemented Internship Monitoring and Management System (IMMS). All indicators obtained high weighted mean scores ranging from 4.58 to 4.90, which falls under the verbal interpretation of Strongly Agree. This indicates a very high level of user satisfaction and acceptance of the system. The findings suggest that the system not only functioned as intended but also delivered reliable, accurate, and user-friendly features that significantly enhanced the internship management process.

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The highest-rated indicator is I am satisfied with the overall performance of the system (Q10) with a weighted mean of 4.90, ranked 1st. This implies that respondents were highly satisfied with how the system performed in actual use. It reflects that the system was able to meet user needs in terms of functionality, usability, and reliability. Closely following is the system meets my expectations (Q9) with a weighted mean of 4.82, ranked 3rd, indicating that the system successfully aligned with the expectations identified during the pre-survey phase. These results strongly confirm that the system delivered the intended outcomes and provided a positive user experience.

Another highly rated feature is the digital DTR feature is effective and reliable (Q1) with a weighted mean of 4.86, ranked 2nd. This shows that respondents found the digital attendance system to be accurate, consistent, and efficient compared to the traditional manual DTR process. The improvement in attendance monitoring contributed significantly to the overall effectiveness of the system. Similarly, the system generates reports accurately (Q7) received a weighted mean of 4.74, ranked 4th, indicating that the automated reporting feature produced reliable and useful outputs for both students and coordinators.

Furthermore, automated hour tracking is accurate (Q3) obtained a weighted mean of 4.76, ranked 5th, which suggests that respondents trusted the system in monitoring their rendered internship hours. Accurate tracking is essential in ensuring that students meet their required hours without confusion or miscalculation. In addition, the centralized platform is helpful for managing internship records (Q5) received a weighted mean of 4.72, ranked 6th, confirming that having all internship-related data in one system improved organization, accessibility, and efficiency.

The indicators online document submission works properly (Q2) and real-time updates are useful and timely (Q6) both obtained a weighted mean of 4.68, ranked 7th. These results indicate that respondents found the system reliable in handling document uploads and appreciated the timely communication provided through system notifications and updates. Meanwhile, document validation improves data integrity (Q4) received a weighted mean of 4.66, ranked 8th, showing that respondents acknowledged the importance of validation features in ensuring the accuracy and authenticity of submitted documents.

On the other hand, the system reduces paperwork significantly (Q8) obtained the lowest weighted mean of 4.58, ranked 10th. Although it ranked lowest, it still falls under Strongly Agree, indicating that respondents still recognized the system's ability to lessen manual paperwork. This suggests that while paperwork reduction is beneficial, other features such as monitoring, tracking, and system performance had a greater impact on user satisfaction.

The narrow range of weighted mean scores demonstrates that all system features were positively evaluated by the respondents. No indicator received a neutral or negative interpretation, which indicates a consistently high level of satisfaction across all aspects of the system. This consistency strengthens the reliability of the results and confirms that the system performed effectively in different functional areas.

When compared to the pre-survey expectations, the post-survey results clearly show that the proposed features were successfully implemented and validated by actual user experience. Features such as digital DTR, automated hour tracking, centralized management, online submission, real-time updates, and automated reports were not only expected but were proven effective after system implementation. This indicates that the system design was aligned with user needs and that the development process successfully translated these needs into functional system features.

Overall, the findings confirm that the developed Internship Monitoring and Management System (IMMS) is highly acceptable, effective, and reliable. The system not only met but in many aspects exceeded user expectations, as reflected in the very high satisfaction ratings. It successfully improved internship monitoring, enhanced record management, ensured data accuracy, and provided a convenient and efficient platform for students and coordinators. These results validate that the IMMS is a practical solution that can significantly improve the internship process at St. Clare College of Caloocan and can be considered for long-term implementation and potential expansion.

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Synthesis

The results and discussion of the gathered data for the study entitled Internship Monitoring and Management System (IMMS) for St. Clare College of Caloocan. The findings were based on the responses of student interns through pre-survey and post-survey questionnaires. The collected data were analyzed using frequency, percentage, and weighted mean in order to determine the problems in the current internship process, evaluate the expectations toward the proposed system, and measure the effectiveness of the system after implementation.

Based on the respondent profile, the majority of participants in both the pre-survey and post-survey were 18–21 years old, which indicates that the respondents were typical college students currently undergoing internship requirements. The respondents were equally distributed between Hospitality Management and Tourism students, ensuring balanced representation from both academic programs. In terms of gender, female respondents composed the majority in both surveys, followed by male and others. This demographic distribution confirms that the gathered data came from qualified respondents who were capable of evaluating the internship system based on actual experience.

The pre-survey results revealed that respondents strongly agreed that the traditional manual internship process had several challenges. Among the highest-rated problems were the time-consuming manual submission of requirements, difficulty in receiving updates from coordinators, lack of a centralized monitoring system, and delays in updating attendance and progress reports. Respondents also identified risks such as misplaced documents, difficulty in tracking rendered hours, manipulation of records, and inconvenience in generating reports manually. These findings clearly showed that the current internship process was outdated, inefficient, and heavily dependent on manual procedures.

In relation to system expectations, respondents strongly agreed that the proposed system should include features such as a digital DTR system, automated hour tracking, online document submission, real-time updates, centralized records management, and automatic report generation. They also emphasized that the system should be easy to use for both students and coordinators. This indicates that respondents believed technology could significantly improve the current internship process by increasing efficiency, convenience, and accuracy.

After the implementation of the IMMS, the post-survey results confirmed that the identified problems were effectively addressed. Respondents strongly agreed that the system made internship monitoring easier, reduced the chances of losing documents, made requirement submission faster and more convenient, improved rendered hour tracking, minimized manipulation of records, and provided proper document validation. They also agreed that report generation became more convenient and that communication with coordinators became easier through system updates and notifications. These results demonstrate that the developed system successfully resolved the major weaknesses of the previous manual process. Furthermore, the evaluation of system features and user satisfaction showed very high acceptance ratings. Respondents strongly agreed that the digital DTR feature was effective and reliable, automated hour tracking was accurate, the centralized platform was helpful, real-time updates were useful, and reports were generated accurately. The highest-rated indicators were overall satisfaction with system performance and the system meeting user expectations. This means that the system not only functioned properly but also exceeded the expectations of many respondents.

Overall, the results presented in Chapter IV confirm that the proposed Internship Monitoring and Management System (IMMS) is an effective, reliable, and highly acceptable solution for St. Clare College of Caloocan. The system successfully transformed the traditional manual internship process into a more organized, secure, and efficient digital platform. Through its features in attendance monitoring, document management, rendered hour tracking, communication, and report generation, the IMMS significantly improved the internship experience of students and can be considered for continuous implementation and future enhancement.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings:

This study focused on the design, development, and evaluation of the Internship Monitoring and Management

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System (IMMS) for St. Clare College of Caloocan. The primary objective of the study was to improve the existing manual internship monitoring process through a web-based solution and determine the level of user acceptability after implementation.

Based on the respondent profile, the majority of participants in the pre-survey were 18–21 years old (86%), while 14% were 22–25 years old. In the post-survey, 90% were 18–21 years old, while 10% were 22–25 years old. This indicates that the respondents were mostly college students currently undergoing internship requirements. In terms of academic program, both Hospitality Management and Tourism students were equally represented with 50% each in both surveys. For gender distribution, the pre-survey consisted of 58% female, 36% male, and 6% others, while the post-survey had 62% female, 28% male, and 10% others. These results confirm balanced and qualified participation from student interns.

The pre-survey findings revealed that respondents strongly agreed that the traditional internship process had several major problems. The highest-rated concerns were manual submission of internship requirements is time-consuming and receiving updates from internship coordinators is difficult, both with a weighted mean of 4.60. This was followed by lack of a centralized system (4.56) and slow updating of attendance and progress reports (4.54). These findings show that the existing process was inefficient, delayed, and inconvenient for users.

The respondents also strongly agreed on the importance of implementing a digital system. The indicators a digital DTR system would improve internship monitoring and the system would improve overall internship experience both received 4.78. Likewise, automated tracking of rendered hours and ease of use for students and coordinators both obtained 4.66. This indicates that respondents had high expectations for a modern, centralized, and user-friendly internship management system.

After implementation, the post-survey results confirmed that the IMMS effectively improved the internship process. Respondents strongly agreed that the system made internship monitoring easier and there is proper validation of submitted internship documents, both with a weighted mean of 4.72. They also agreed that submitting requirements is faster and more convenient (4.70) and the system reduced the chances of losing important documents (4.68). These findings prove that the proposed system successfully solved the common problems of the manual process.

The system evaluation also revealed a very high level of satisfaction among users. The highest-rated indicator was I am satisfied with the overall performance of the system with a weighted mean of 4.90, followed by the system meets my expectations (4.82) and the digital DTR feature is effective and reliable (4.86). These results indicate that the IMMS not only met but exceeded user expectations in several functional areas.

Overall, the findings demonstrate that the manual internship process was outdated and inefficient, while the implemented Internship Monitoring and Management System (IMMS) proved to be an effective, reliable, and highly acceptable digital solution for internship monitoring and record management.

Conclusions

Based on the findings of the study, it can be concluded that the existing manual internship monitoring process of St. Clare College of Caloocan was inefficient, time-consuming, and highly dependent on paper-based procedures. The pre-survey results showed that respondents strongly agreed that major concerns existed in the traditional system, particularly the time-consuming submission of internship requirements and difficulty in receiving updates from coordinators, both with a weighted mean of 4.60. Other major concerns included the lack of a centralized system (4.56) and delays in updating attendance and progress reports (4.54). These findings indicate that the previous process lacked efficiency, accessibility, and effective communication.

The demographic results also confirmed that the respondents were qualified participants who were directly involved in internship activities. Most respondents belonged to the 18–21 years old age bracket, representing 86% in the pre-survey and 90% in the post-survey. In addition, students from Hospitality Management and Tourism were equally represented at 50% each, ensuring balanced participation from both academic programs. This suggests that the responses accurately reflected the experiences and expectations of actual student interns.

The implementation of the Internship Monitoring and Management System (IMMS) successfully addressed the identified weaknesses of the manual process. The post-survey results revealed that respondents strongly agreed that the system made internship monitoring easier and provided proper validation of submitted documents, both with a weighted mean of 4.72. Respondents also agreed that requirement submission became faster and more convenient (4.70) and that the system reduced the chances of losing important documents (4.68). These findings prove that the developed system significantly improved efficiency, organization, monitoring accuracy, and records management.

Furthermore, the system evaluation showed a very high level of user satisfaction and acceptance. The highest-rated indicator was overall satisfaction with the performance of the system with a weighted mean of 4.90, followed by the system meets user expectations with 4.82, and the digital DTR feature is effective and reliable with 4.86. These results confirm that the IMMS was not only functional and reliable but also highly appreciated by its intended users. Therefore, it can be concluded that the system is an effective, practical, and modern solution for improving internship monitoring and record management at St. Clare College of Caloocan.

Recommendations

1. Full Implementation of the System

Based on the positive results of the study, it is highly recommended that St. Clare College of Caloocan officially adopt and fully implement the Internship Monitoring and Management System (IMMS) as the standard platform for internship monitoring and record management. The post-survey findings showed a very high satisfaction rating of 4.90, which indicates that users strongly accepted the system and were satisfied with its overall performance. Through full implementation, the institution can replace time-consuming manual processes with a faster, more organized, and centralized digital solution. This will improve attendance monitoring, document management, rendered hour tracking, communication, and reporting processes for students, coordinators, and supervisors.

2. Conduct User Training and Orientation Programs

Before the full deployment of the system, it is recommended that the institution conduct proper training sessions and orientation programs for all intended users, including students, coordinators, supervisors, and administrators. Since the majority of respondents were 18–21 years old, representing 90% of the post-survey participants, many users may easily adapt to technology, but clear instructions are still necessary to maximize proper system usage. Training programs should cover account login procedures, attendance scanning, document submission, dashboard navigation, notification features, and report generation. Providing user manuals and technical assistance during the early stages of implementation can also help minimize errors and increase user confidence.

3. Continuous Improvement and Feature Enhancement

To maintain the relevance and effectiveness of the system, continuous enhancement should be prioritized based on user feedback and technological advancements. Although the current system received high evaluation scores, future improvements can further strengthen its functionality and usability. Recommended enhancements include a dedicated mobile application version for Android and iOS users, email or SMS notification integration, calendar scheduling tools for deadlines and internship events, advanced analytics dashboards, and customizable reporting options. Continuous upgrades will ensure that the system remains responsive to the changing needs of students and institutional administrators.

4. Integration of Artificial Intelligence Features

Considering the increasing role of modern technology in educational systems, it is also recommended that future versions of the IMMS integrate Artificial Intelligence (AI) features. An AI-powered chatbot assistant can be added to answer common questions regarding internship requirements, rendered hours, deadlines, and system navigation. Predictive analytics tools may also help identify students who are at risk of delayed completion based

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on attendance patterns or incomplete submissions. AI integration can improve user support, reduce repetitive administrative tasks, and make the overall system more innovative and efficient.

5. Strengthening Data Security and Privacy Protection

Since the system handles confidential student information, internship records, and uploaded documents, data privacy and security should remain a top priority. It is recommended that stronger protective measures be continuously implemented, such as encrypted passwords, secure login sessions, automatic logout features, database backup systems, role-based access controls, and audit trail logs. Regular system maintenance and vulnerability checks should also be conducted to prevent unauthorized access or data loss. In addition, strict compliance with the Data Privacy Act of 2012 should be observed to ensure the responsible handling of personal data.

6. Regular Monitoring and Performance Evaluation

To ensure long-term success, the institution should conduct regular evaluations of the system every semester or academic year. User feedback surveys, technical performance reviews, and operational assessments should be gathered periodically to determine if the system continues to meet the needs of its users. Since the current post-survey results showed strong satisfaction and acceptance, continuous monitoring will help maintain this positive performance while identifying new areas for improvement. Regular evaluation can also guide administrators in making informed decisions regarding updates, maintenance, and future expansion.

7. Expansion to Other Academic Departments

It is recommended that the system be considered for expansion to other academic programs and departments within the institution after successful implementation in the initial target programs. Since the study involved Hospitality Management and Tourism students with equal representation of 50% each, the positive results suggest that the system can also be beneficial to students from other courses that require internship or practicum programs. Expanding the system institution-wide can standardize internship monitoring processes, improve administrative efficiency, and create a more unified academic management environment.

8. Recommendations for Future Researchers

Future researchers are encouraged to conduct follow-up studies regarding the long-term effectiveness and impact of the IMMS after several semesters or years of implementation. Comparative studies may also be performed between institutions using manual systems and those using digital internship systems. Researchers may further explore advanced technologies such as biometric verification, facial recognition, predictive dashboards, and cloud-based mobile integration. These studies can contribute to the continuous improvement of internship monitoring systems and support innovation in educational management.

Final Defense Panel Report

DATE / TIME OF DEFENSE	ACADEMIC YEAR / SEMESTER
4/21/2026 2:30PM – 4:00PM	2025 - 2026 2ND Semester

SECTION A: PROGRAM INFORMATION	SECTION B: STUDENT INFORMATION
COLLEGE OF COMPUTER SCIENCE	MEMBERS:
DEGREE/PROGRAM B.S. COMPUTER SCIENCE	
MAJOR/SPECIALIZATION N/A	Benedict N. Asehan James Vincent L. Lavapie

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	Jeremiah I. Tubosa John Lawrence C. Ubaldo Renz Jailo R. Directo Richmond Cabudsan

SECTION C: THESIS INFORMATION

DEFENSE RESULT	NUMERICAL EQUIVALENT	THESIS TITLE
(✓) PASSED	[1.0], [1.25]	Internship Monitoring and Record Management System for St. Clare College of Caloocan
( ) WITH MINOR REVISIONS	[1.5], [1.75]	
( ) WITH MAJOR REVISIONS	[2.0], [2.25], [2.75]	
( ) UNSATISFACTORY/FAILED	[5.0]	
* Revisions not approved and reported to the Office of the Department Chair, through the Panel Chair Report, not later than 10 days after the Final Defense Deliberation shall be considered as "FAILED". ** FAILED defense means student has to restart thesis cycle.		

SECTION D: THESIS PANEL

NAME		SIGNATURE
PANEL CHAIR	**Mr. Hobel Dioquino**	
MEMBER	**Ms. May Ann Maniego**	
MEMBER	**Mr. Reymart Ortega**	

SECTION E: PROGRAM INFORMATION

NAME		SIGNATURE
ADVISER	**MS. JEANETHJOY D. NATURALES**	

Important: This Final Defense Panel Report must be accomplished in four (4) copies by the Chair of the Defense Panel and submitted immediately to the Office of the Academic Affairs, without need for the revisions in the thesis. Distribution of the copies shall be: Office of the Academic Affairs (1); Office of the Registrar (1); the Department (1); and the student (1).

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Pre Oral Panel Report

DATE / TIME OF DEFENSE	ACADEMIC YEAR / SEMESTER
12/16/25 2:30PM – 3:00PM	2025 - 2026 1st Semester

SECTION A: PROGRAM INFORMATION **SECTION B: STUDENT INFORMATION**

COLLEGE OF COMPUTER SCIENCE	MEMBERS: Benedict N. Asehan James Vincent L. Lavapie Jeremiah I. Tubosa John Lawrence C. Ubaldo Renz Jailo R. Directo Richmond Cabudsan
DEGREE/PROGRAM B.S. COMPUTER SCIENCE	
MAJOR/SPECIALIZATION N/A	

SECTION C: THESIS INFORMATION

DEFENSE RESULT	NUMERICAL EQUIVALENT	THESIS TITLE
(✓) PASSED	[1.0], [1.25]	Internship Monitoring and Record Management System for St. Clare College of Caloocan
( ) WITH MINOR REVISIONS	[1.5], [1.75]	
( ) WITH MAJOR REVISIONS	[2.0], [2.25], [2.75]	
( ) UNSATISFACTORY/FAILED	[5.0]	
* Revisions not approved and reported to the Office of the Department Chair, through the Panel Chair Report, not later than 10 days after the Final Defense Deliberation shall be considered as "FAILED". ** FAILED defense means student has to restart thesis cycle.		

SECTION D: THESIS PANEL

NAME		SIGNATURE
PANEL CHAIR	**Ms. Maireen Baltazar**	
MEMBER	**Ms. May Ann Maniego**	
MEMBER	**Mr. Lawrence Irinco**	

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SECTION E: PROGRAM INFORMATION

NAME		SIGNATURE
ADVISER	**MS. JEANETHJOY D. NATURALES**	

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APPROVAL SHEET

In partial fulfillment of the requirements for the degree of **Bachelor of Science in Computer Science** this thesis entitled " **INTERNSHIP MONITORING AND RECORD MANAGEMENT SYSTEM FOR ST. CLARE COLLEGE OF CALOOCAN** " has been prepared and submitted by:

Names	Document (70%)	System (30%)
1. **Benedict N. Asehan**	_____	_____
2. **James Vincent L. Lavapie**	_____	_____
3. **Jeremiah I. Tubosa**	_____	_____
4. **John Lawrence C. Ubaldo**	_____	_____
5. **Renz Jailo R. Directo**	_____	_____
6. **Richmond Cabudsan**	_____	_____

JEANETH JOY D. NATURALES, DIT

Adviser

Approved and accepted by the Committee on Oral Examination with a grade of **1.25** on (date) **April 21, 2026** .

MR. HOBEL DIOQUINO

Chairman

MS. MAY ANN MANIEGO

Member

MR. REYMART ORTEGA

Member

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And above all, the **ALMIGHTY GOD** for His mercy, guidance, and blessings.

DEDICATION

This is the fruit of countless and arduous sacrifices.

We devotedly dedicate this humble undertaking to our parents

CONCEPCION R. PEPPER, SCOTT PEPPER, JOSIE L. LAVAPIE, EDDIE S. LAVAPIE, MARY JANE I. TUBOSA, RICARDO A. TUBOSA, MAGDALENA B. CABUDSAN, SHERYLL B. CABUDSAN, ANGELITO D. VILLAGRACIA, NENIA C. UBALDO, JHUN C. UBALDO, EMMALINDA AREDIANO NAYRE CHARLITO MACALALAG ASEHAN

for their love and being sources of our strength;

To our dissertation adviser, panel, and mentors

MS. JEANETHJOY D. NATURALES, MR. HOBEL DIOQUINO, MS. MAY ANN MANIEGO, MR. REYMART ORTEGA, MS. MAIREEN BALTAZAR And **MR. LAWRENCE IRINCO**

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and to our mentors and colleagues,

MS. JEANETHJOY D. NATURALES, MR. ENRICO COLLUMNA, And **MR. MARK FELICIANO** for their unwavering support and mentorship, shaping out professional journey.

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APPENDICES

Respondent Profile (PRE-SURVEY)

Age	Frequency	Percentage %
18-21		
22-25		
26-29		
30 and above		
Course	**Frequency**	**Percentage %**
Hospitality Management		
Tourism		

Gender	Frequency	Percentage %
Female		
Male		
Others		

B. Questionnaire for Students: Current Situation (Manual System)

PART 1 : Problems Encountered in the Current Internship Process (PRE-SURVEY)

Indicators	SA(5)	A(4)	N (3)	D(2)	SD(1)	Weighted Mean	Ranking
1. The traditional Daily Time Record (DTR) process makes internship monitoring difficult.							
2. Important internship documents are prone to being lost or misplaced.							
3. Manual submission of internship requirements is time-consuming.							
4. I often lose track of my rendered internship hours.							
5. The manual system allows manipulation or falsification of records.							
6. There is no proper validation of submitted internship documents.							

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7. Compiling internship reports manually is inconvenient.							
8. Updating attendance and progress reports takes too long.							
9. Receiving updates from internship coordinators is difficult.							
10. The lack of a centralized system makes internship monitoring inefficient.							

PART 2: System Features and User Expectations (PRE-SURVEY)

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)	Weighted Mean	Ranking
1. A digital DTR system would improve internship monitoring.							
2. Online document submission would reduce lost requirements.							
3. Automated tracking hours would help students monitor progress accurately.							
4. Document validation features would improve data integrity.							
5. A centralized platform would make internship management more efficient.							
6. Real-time updates from coordinators are necessary.							
7. The system should generate internship reports automatically.							
8. The system would reduce manual paperwork.							
9. The system should be easy to use for students and coordinators.							
10. The system would improve overall internship experience.							

Respondent Profile (POST-SURVEY)

Age	Frequency	Percentage %
18-21		
22-25		
26-29		
30 and above		

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Course	Frequency	Percentage %
Hospitality Management		
Tourism		

Gender	Frequency	Percentage %
Female		
Male		
Others		

PART II: Improvements In The Intership Process After System Implementation (Post-Survey)

Indicator	SA(5)	A(4)	N(3)	D(2)	SD(1)
1. The system made internship monitoring easier compared to the manual process.					
2. The system reduced the chances of losing important documents.					
3. Submitting internship requirements is now faster and more convenient					
4. The system helped me accurately track my rendered internship hours.					
5. The system minimized manipulation or falsification of records.					
6. There is proper validation of submitted internship documents in the system.					
7. Generating internship reports is now more convenient.					
8. Updating attendance and progress reports is faster using the system.					
9. Receiving updates from internship coordinators is easier.					
10. The system improved overall efficiency in internship monitoring.					

PART III: System Features Evaluation And User Satisfaction

Indicators	SA(5)	A(4)	N(3)	D(2)	SD(1)
1.The digital DTR feature is effective and reliable.					
2.Online document submission works properly.					
3.Automated hour tracking is accurate.					
4.Document validation improves data integrity.					
5.The centralized platform is helpful for managing internship records.					

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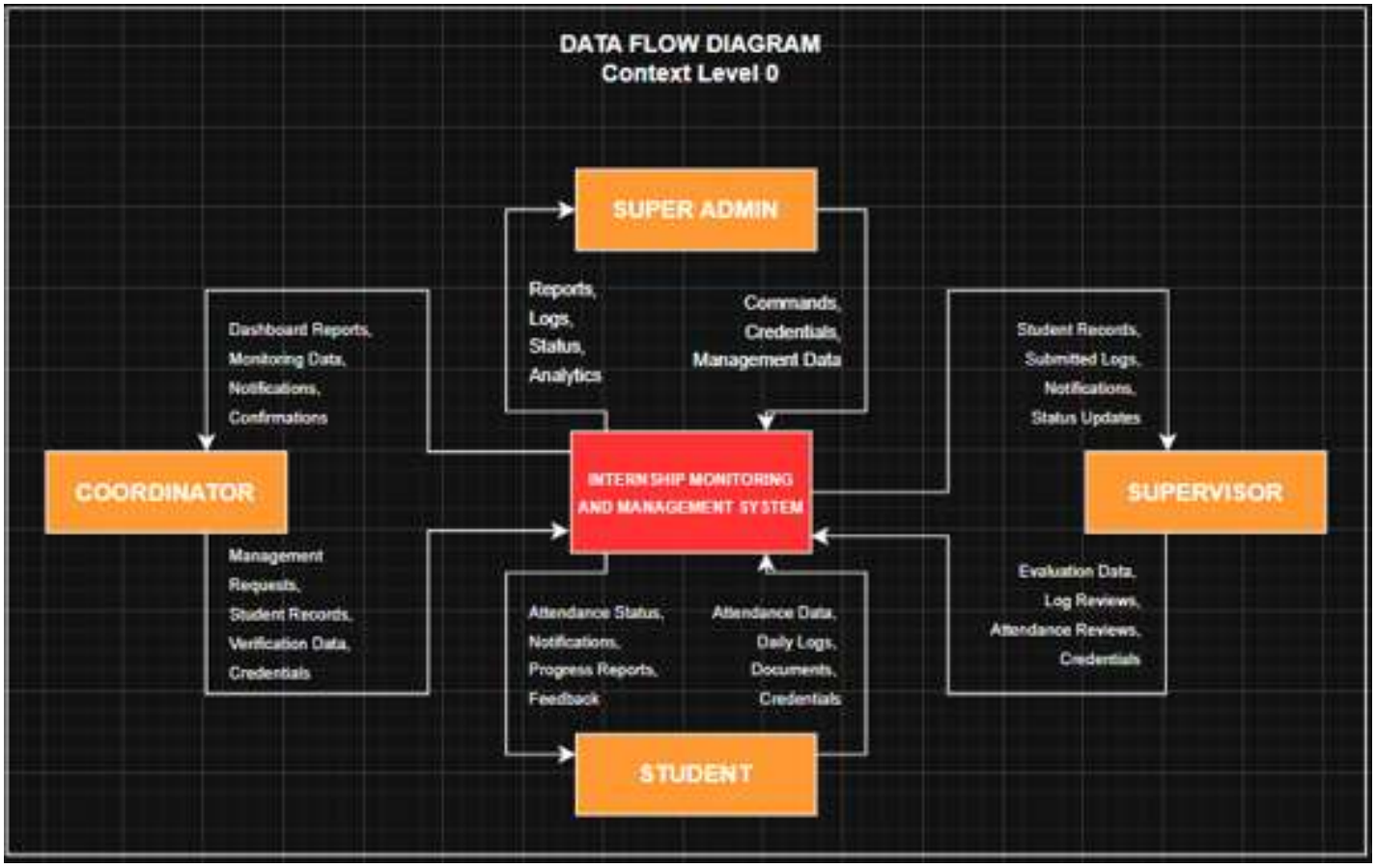
6.Real-time updates are useful and timely.					
7.The system generates reports accurately					
8.The system reduces paperwork significantly.					
9.The system meets my expectations.					
10.I am satisfied with the overall performance of the system.					

System Architecture

Context Diagram (DFD Level 0)



Flow Diagram (DFD Level 1)

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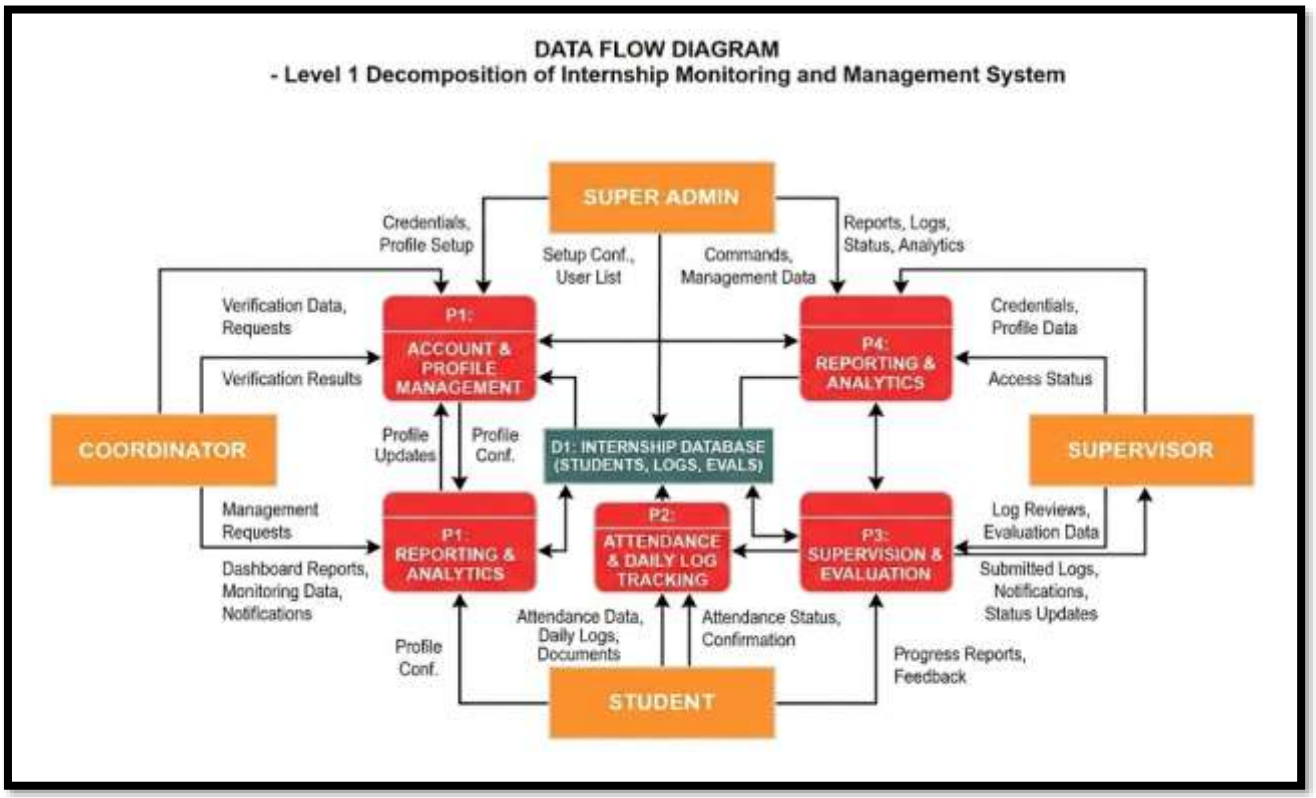

Entity-Relationship Diagram (ERD)

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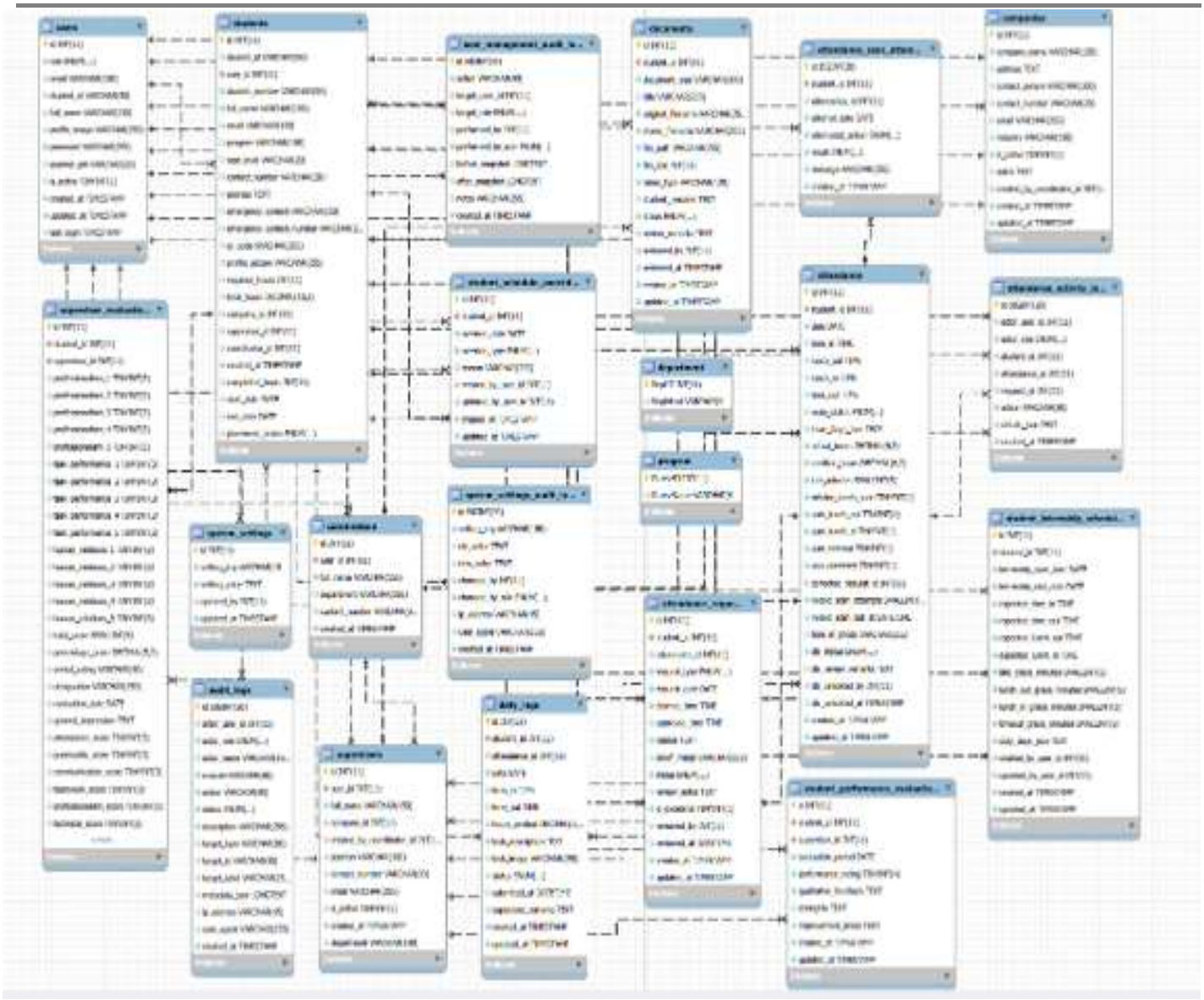

IPO Diagram

Component	Description	Examples
Input	The data and commands entered into the system by various users (Students, Supervisors, Coordinators).	User Credentials (Login/Password), Daily Time Logs (Time In/Out), Supervisor Validation/Approval, Task Submissions, Coordinator Report Requests, OJT Guidelines.
Process	The core functions, calculations, and logic the system performs on the input data to transform it into meaningful information.	User Authentication, Data Storage and Retrieval (CRUD operations), Automatic Time Calculation (Total Hours Rendered), Data Validation and Integrity Check, Report Generation Algorithms, Notification Triggers.
Output	The results and information the system provides to the users, which serve as the basis for decision-making.	Real-time Attendance Status, Completed OJT Hour Reports, Supervisor Performance Ratings, System Notifications (for pending approvals), Printable Records (DTRs, Evaluation Forms).