Chapter I
The Problem and Its Background

Introduction

In the present evolving educational landscape, efficient management of student information and counseling services is essential for supporting academic success and overall development. The guidance service, as an integral part of education, focuses on programs and services for students that might be beneficial to their general achievement in life. The office of the counselor collects student records to enhance the counseling process and gain a better understanding of each individual. Therefore, guidance and counseling are essential for meeting students' academic, professional, social, and personal needs (Agustin and Babaran, 2021). However, traditional manual processes frequently provide major challenges, ranging from time-consuming paperwork to delays in accessing necessary information.

The guidance office at Bongabon National High School has been collecting student information through manual methods. During each academic year, the guidance counselor collects student information manually in order to guide, counsel, and develop them. On an annual basis, the number of students handled by the guidance counselor generates a large collection of physical files, as well as several processes and papers required for their development. Managing all of this is challenging due to annual fluctuations in the number of learners and the admission of new students. Considering these challenges, the researchers started developing an innovative solution, the Guidance Management System.

The Guidance Management System represents a significant change in regards to how student information is collected, stored, and utilized. This project explores the creation and implementation of a Guidance Management System, an innovative solution that seeks to improve student guidance and counseling services. The system aims to address several challenges that educators and counselors encounter while providing complete student support by employing technology to automate processes, facilitate data management, and enhance access to necessary information. It offers a comprehensive collection of features designed to speed up workflows, maintain regulatory compliance, and provide better support for student development.

This study investigates the transformative potential of switching from manual to automated methods of processing student data. The researchers aims to uncover the Guidance

Management System's numerous advantages through comprehensive evaluation and analysis. From improved data accuracy to enhanced operational efficiency, the system has the potential to transform the provision of guidance and counseling services. Proceeding along this journey of advancement, it becomes evident that the Guidance Management System provides significant improvements in the evolution of guidance services. This innovative method, which utilizes technology to tear down traditional barriers, has the potential to unleash new opportunities for student achievement and psychological well-being in educational settings.

Review of Related Literature and Studies

Guidance and Counseling in Educational Settings

Guidance and counseling services play a vital role in educational institutions, facilitating students' personal, educational, social, and career development. Tacuban and Tuazon (2018) from the Iloilo Science and Technology University addressed this significance by developing an Online Guidance Testing System. Their study aimed to enhance efficiency in administering guidance tests and accessing results through Information and Communication Technology (ICT).

Current school education emphasizes both aptitude achievement and competition, leading to complex challenges for students affecting educational productivity. Students are expected to develop their full potential and acquire qualified skills. School success indicators include high academic achievement and specialized skills. Amidst academic assignments and extracurricular activities, students need guidance and counseling facilities in schools to improve academic performance. School counselors address academic and developmental needs, collaborating with students, parents, staff, and the community. The guidance and counseling unit aims to solve students' problems and enhance their efficiency. Evaluation in schools helps students in understanding themselves, solving problems, adapting to challenges, and promoting educational success (Arumugam et al., 2021).

According to Vostanis & Bell (2020), guidance and counseling help people be aware of themselves and how they react to the environment. This process also helps them determine personal meaning for behaviour and establish and classify goals and values for future behaviour. Counseling, as defined by Situmorang (2020), is a series of procedures to help a person overcome their problems. Counseling emphasizes learning's emotional aspects and personal interactions, including emotions, feelings, values, and attitudes.

Counseling and guidance are essential factors in shaping a child's orientation and discarding negative ideas from the surrounding environment. Therefore, the role of school counselors is significant in helping shape the child's future through counseling therapy. School counselors are recognized as role models for children and are highly respected by students. The counselor has the task of being a friend to the child and listening to his complaints, providing assistance and guiding them in achieving the right life goals (Canu and Sitinjak, 2023).

Smith and Gillon (2021) stated that an environment conducive to the teaching and learning process is needed to achieve overall child development. Therefore, educational services that help promote the learning process in schools are essential and receive priority attention from education planners. Counseling services are one of the educational services in schools that are expected to help develop, assess, and improve educational programs, improve teacher competence, and reduce student costs.

Mangantes et al. (2018) conducted a study on the implementation of a guidance management system in a decentralized educational environment, focusing on SMA Negeri 1 Amurang in South Minahasa Regency. Various stakeholders, including school principals, guidance and counseling teachers, homeroom teachers, subject teachers, and parents, actively participated in a qualitative study to investigate how a structured strategy could address guidance counselling challenges in schools. The study demonstrated the importance of effective planning in the guidance management system, starting from developing the school's vision and mission statements to constructing specialized counseling programs. It emphasized how this approach served as a strategic framework for decision-making and program implementation, with stakeholder participation crucial to ensure alignment with the school's goals.

By outlining the content of guidance and counseling planning, encompassing areas of student growth and service offerings, the study illustrated the system's holistic approach to meeting students' diverse needs. Mangantes et al. (2018) underscored the significance of the guidance management system in tackling counseling challenges in schools, advocating for collaborative efforts among stakeholders to enhance student development and educational quality within school communities through a structured approach.

Advantages of Automated Student Record System

Student records are often perceived as bureaucratic paperwork within the education system. However, a well-designed student record system, whether paper-based or automated, offers numerous benefits. Foremost among these is the capacity to provide decision-making information about individual students, schools, programs, and school districts. A secondary advantage, particularly evident in automated systems, is the efficiency gained in processing and exchanging student records among schools. When integrated into a comprehensive management information system encompassing staff, materials, and budgeting data for the school or district, student record systems enhance overall management activities and efficiency. Therefore, student record systems play a vital role in the functioning of the education system, significantly enhancing a school's ability to meet student needs (National Center for Education Statistics, n.d.).

Odeniyi & Adeyanju (2020) underscore the importance of record management in educational institutions, emphasizing its role in ensuring accountability, quality performance, and task accomplishment. Amanchukwu and Ololube (2015) emphasize the cost-effectiveness and efficiency of record keeping, essential for supporting school administration.

Web-based Information System Counseling Guide and Data Management

Demirkol et al. (2019) discuss the increasing importance of web-based information systems in educational settings, particularly in data management. They emphasize the role of Information Systems (IS) in collecting, processing, and distributing data efficiently.

Riyansyah and Prihandi (2020) introduce a Web-based Information System Counseling Guide and data management aimed at improving the manual recording system by analyzing and designing data management processes, including attendance data, counseling guidance, and student violation points.

Krismiaji (2015) and Laudon and Laudon (2016) elaborate on the organizational aspects of information systems, emphasizing their role in achieving organizational goals through data collection, processing, storage, and reporting.

Management Information Systems (MIS)

Shah (2014) discusses the significance of Management Information Systems (MIS) in educational administration, highlighting their role in providing necessary information for effective decision-making. Albert (2016) stresses the importance of accurate and timely MIS implementation to enhance educational effectiveness.

Guidance and Counseling Record Management Systems

The Guidance Records Management System with Short Message Service (SMS) Notification developed to assist the needs of counselor in recording, keeping, and managing the cumulative records of the students, as well as tendered admission slips of the students to monitor their attendance and referred incident reports by teachers for their observed behavior inside the school. The guidance office can efficiently send notification to the parent or guardian through SMS once the student gets involved in any incident, such as delinquency in academics, absenteeism or frequent cutting of classes, and/or other behavioral reasons (Agustin and Babaran, 2021).

The developed Record Management System for Guidance and Counseling Center of the Nueva Ecija University of Science and Technology aimed to provide software application that will manage the record of student and provides fast and easy access of personal information of students. The functions focused in adding and updating students' information/profile by using the application. The user can produce a printed copy of the record of student (Alegado et. al, 2021).

Ida and Faried (2017) developed a Knowledge Management System to assist school counselors in managing counseling processes. Similarly, Tuazon and Tacuban (2017) developed a Guidance and Counseling System aimed at processing student information profiles, routine interviews, exit interviews, and graduate tracking to enhance counseling services within educational institutions.

Synthesis

Guidance and counseling services are vital to educational institutions, supporting students' personal, educational, social, and career development. Tacuban and Tuazon (2018) addressed this importance by developing an Online Guidance Testing System, aiming to improve efficiency in administering tests and accessing results through Information and Communication Technology (ICT). Moreover, school counselors play a crucial role in addressing academic and

developmental needs, collaborating with various stakeholders to enhance student success (Canu & Sitinjak, 2023; Smith & Gillon, 2021).

Mangantes et al. (2018) highlighted the significance of effective planning in guidance management systems, demonstrating how structured strategies can address counseling challenges and ensure alignment with school goals. This approach, focusing on student growth and service offerings, emphasizes a holistic approach to meeting students' diverse needs.

In educational settings, automated student record systems offer numerous advantages, including efficient data processing and exchange, ultimately enhancing overall management activities and enabling schools to better meet student needs (National Center for Education Statistics, n.d.). Record management, as emphasized by Odeniyi & Adeyanju (2020) and Amanchukwu and Ololube (2015), ensures accountability and supports school administration.

The importance of web-based information systems in educational data management is underscored by Demirkol et al. (2019), while Riyansyah and Prihandi (2020) introduce a Web-based Information System Counseling Guide to improve data management processes. Furthermore, Management Information Systems (MIS) play a crucial role in educational administration, providing necessary information for effective decision-making (Shah, 2014; Albert, 2016). Guidance and Counseling Record Management Systems, such as the systems developed by Agustin and Babaran (2021) and Alegado et al. (2021), aim to efficiently manage student records and enhance counseling services.

Finally, Ida and Faried (2017) and Tuazon and Tacuban (2017) developed Knowledge Management and Guidance and Counseling Systems, respectively, to support school counselors in managing counseling processes and processing student information profiles, further enhancing counseling services within educational institutions.

In line with these advancements, the proposed development of a guidance system for Bongabon National High School could leverage insights from these studies to design a comprehensive and efficient guidance and counseling services. The system could integrate features such as online testing, student record management, and counseling process management to streamline guidance services and improve student outcomes. Collaborative efforts among stakeholders, effective planning, and utilization of technology could ensure the successful implementation and effectiveness of the guidance system in meeting the needs of students at Bongabon National High School.

Conceptual Framework

The study involves the development and implementation of a comprehensive online system designed to automate the various aspects of student guidance in educational settings. This system transforms and automates significant tasks such as student information management, counseling services, behavior tracking, and parent communication. Different user roles are established within the system to ensure proper access and permissions, with administrators in charge of system settings and configurations. The system's goal is to improve efficiency, transparency, and effectiveness in providing guidance and support to students, which will contribute to their academic success and general well-being.

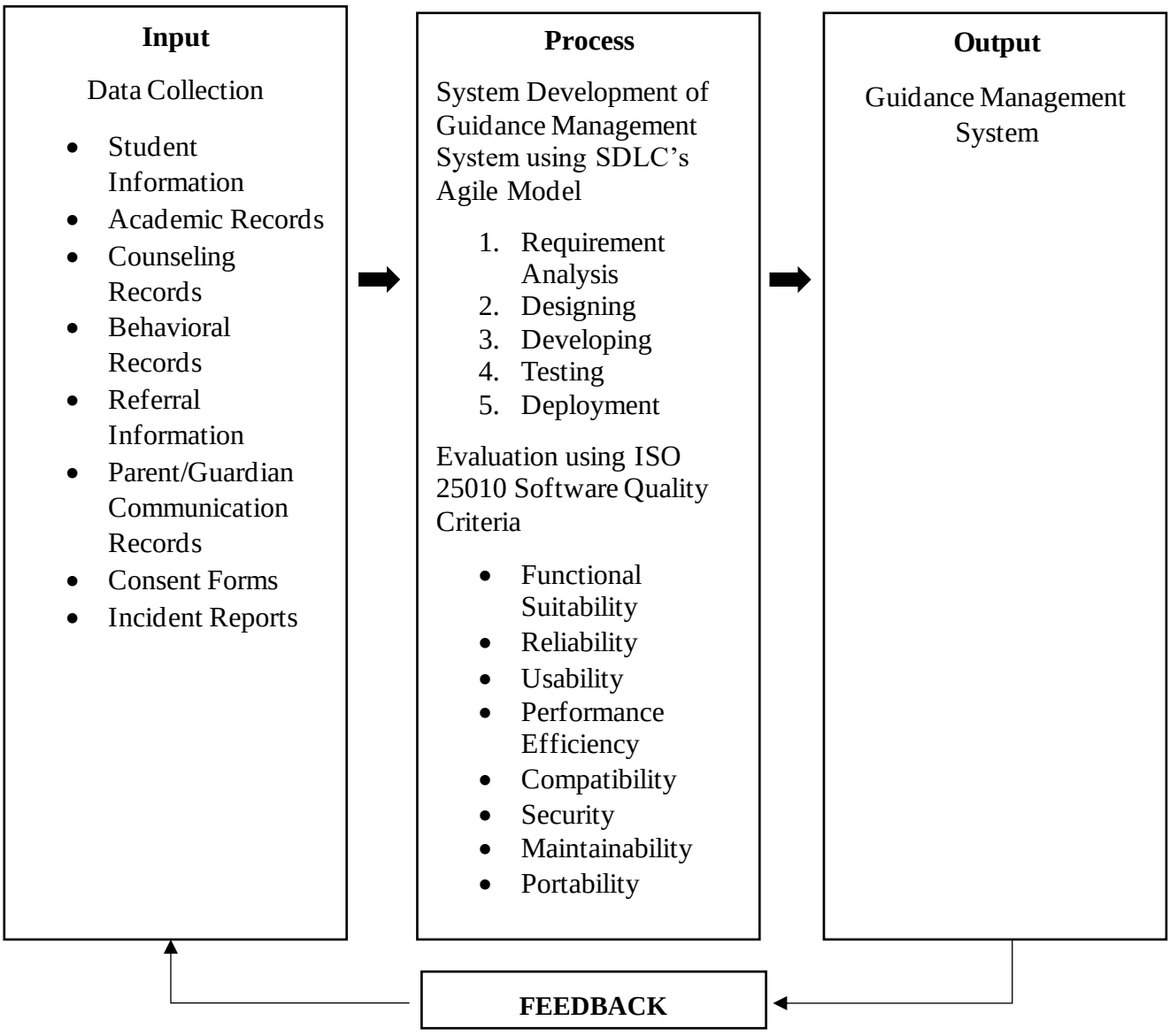


Figure 1. Research Paradigm

The research paradigm of the Guidance Management System is depicted in Figure 1. It provides a systematic approach to the development and evaluation of the Guidance Management System within educational settings. It begins with comprehensive data collection, encompassing various aspects of student information, academic records, counseling, behavior, and communication, among others. These data serve as the foundation for determining system design and functionality.

Using the Agile Model within the Software Development Life Cycle (SDLC), the system undergoes iterative stages from requirement analysis to deployment, allowing for flexibility and adaptability to evolving requirements. Each phase, from requirement analysis through to deployment, is characterized by collaborative efforts between developers, stakeholders, and end-users to ensure alignment with organizational goals and user needs.

The system is designed to address the complexities of student guidance by integrating multiple functionalities, including data management, communication channels, and administrative tools. Throughout the development process, emphasis is placed on user feedback and continuous improvement, enabling the system to evolve in response to changing demands and user experiences.

Following deployment, the system undergoes thorough evaluation based on ISO 25010 Software Product Quality Standards. This evaluation encompasses key aspects such as functional suitability, reliability, usability, performance efficiency, compatibility, security, maintainability, and portability. Each criterion provides valuable insights into the system's effectiveness, robustness, and usability within the educational environment.

Overall, this research paradigm highlights a comprehensive and iterative approach to the development, implementation, and evaluation of the Guidance Management System. By integrating agile methodology, comprehensive data collection, and thorough quality evaluation, the paradigm aims to create a dynamic and effective system that supports student guidance and management in educational settings.

Statement of the Problem

The goal of this study is to create a web-based Guidance Management System specifically designed for Bongabon National High School. Specifically, it seeks to answer the following questions:

1. How may the system be designed and developed based on the stages of Agile Model in terms of:

    1.1 Requirement Analysis

    1.2 Designing

    1.3 Development

    1.4 Testing

    1.5 Deployment

2. How may the IT experts evaluate the proposed system in compliance with ISO 25010 Software Product Quality Standards, which include:

    2.1 Functional Suitability

    2.2 Reliability

    2.3 Usability

    2.4 Performance Efficiency

    2.5 Compatibility

    2.6 Security

    2.7 Maintainability

    2.8 Portability

3. How may the end-users assess the quality of using the system based on the selected ISO 25010 Software Product Quality Standards criteria in terms of:

    3.1 Functional Suitability

    3.2 Reliability

3.3 Usability

Scope and Delimitations

The study aims to develop and implement a web-based Guidance Management System for Bongabon National High School, shifting from manual processes to a more effective approach. The proposed Guidance Management System seeks to improve these processes by facilitating faster workflows, better organized data, regulatory compliance, and enhanced assistance for students through counseling and decision-making sessions. The proposed system will encompass essential functionalities tailored to efficient student management. It will maintain comprehensive student records, facilitating easy access to personal data and streamlining the management of behavior records and counseling forms across various offenses. Through computerized student records, encompassing data from student record forms, counseling notes, and referral slips, the system will enhance administrative tasks. This includes creating, viewing, updating, and deleting student information, profiles, and records. Moreover, it will possess the capability to generate good moral certificates, ensuring a holistic approach to student administration and fostering a conducive learning environment.

By establishing a centralized repository, authorized personnel will have enhanced access to student information, thereby improving communication among educators, administrators, and other stakeholders involved. This will help Bongabon National High School to automatically detect and process student data transactions, ensuring accuracy and efficiency in record-keeping. While the system aims to improve guidance services and data management within this specific institution, it does not extend to other schools or educational settings.

Additionally, the study focuses primarily on the transition from manual to web-based processes within the guidance office, and it does not address broader educational reforms or technological implementations throughout the school. Furthermore, the success of the guidance management system will be assessed based on its impact on data correctness, efficiency, and counselor workload within the Bongabon National High School context, without regard for external factors that may influence the outcomes.

Significance of the Study

This study holds significant implications for the advancement of guidance and counseling services in educational settings. By implementing a Guidance Management System, schools can improve the way student support services are delivered, leading to numerous benefits for students, educators, counselors, administrators, parents/guardians, and other stakeholders.

For Guidance Counselors. The Guidance Management System automates routine tasks such as data entry and scheduling, allowing counselors to spend more time on direct counseling and support activities. Counselors have access to detailed student profiles, including academic records, behavior history, and counseling notes, enabling them to provide more personalized and effective guidance services.

For Administrators. Administrators can use data from the Guidance Management System to identify areas of need and allocate resources effectively to support student success as well as to evaluate the effectiveness of guidance programs and services and make data-driven decisions to continuously improve the quality of support provided to students.

For Students. The implementation of a Guidance Management System ensures that students receive comprehensive support matched to their individual needs, including academic, social, emotional, and career guidance.

For Educators. Educators can collaborate more effectively with guidance counselors and other support staff to address students' academic and behavioral needs, leading to a more cohesive and coordinated approach to student support.

For Parents/Guardians. The system can provide parents/guardians with access to their child's academic and behavioral information, empowering them to be more involved in their child's education and support interventions at home.

For Future Researchers. Future researchers can benefit from access to the rich dataset generated by the Guidance Management System, allowing for longitudinal studies, trend analysis, and exploration of factors influencing student outcomes and well-being. The documentation and insights gained from the implementation of the system can serve as a valuable resource for future researchers interested in replicating or comparing the effectiveness of similar systems in different educational contexts.

Definition of Terms

Agile Methodology: A software development and project management approach characterized by iterative cycles, collaboration, adaptability, and customer involvement.

Automated Methods: Processes that are executed with the assistance of technology or computer systems, reducing the need for manual intervention and improving efficiency.

Centralized Repository: A centralized location or database where data or information is stored, managed, and accessed by authorized users.

Counseling Service: A service offered in educational settings to support students in addressing personal, social, academic, and emotional concerns, usually provided by trained counselors.

Functionalities: The features, capabilities, or operations provided by a software application or system.

Guidance Management System: A system designed to automate and improve the management of student information and counseling services in educational institutions, enhancing workflow efficiency, data organization, regulatory compliance, and student support.

Guidance Service: A service provided in educational institutions aimed at assisting students in their academic, personal, social, and career development.

Manual Processes: Traditional methods of performing tasks that rely on physical paperwork and human intervention rather than automation or technology.

Regulatory Compliance: Adherence to laws, regulations, standards, and policies relevant to a particular industry or domain.

Web-based System: A software application or system that is accessed and operated through a web browser over the internet or an intranet.

Chapter II
Methodology

This chapter discusses the research design, research locale, sampling technique, respondents of the study, research instrument, data gathering procedure, and data analysis techniques used in the development and evaluation of a Guidance Management System at Bongabon National High School in the municipality of Bongabon, Nueva Ecija.

Research Design

The study will use a developmental research design. Developmental research is the creation of knowledge with the ultimate goal of enhancing the processes of instructional design, development, and evaluation. In contrast to simple instructional development, it has been defined as "the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet the criteria of internal consistency and effectiveness" (Seels & Richey, 1994, p. 127). Developmental research aims to generate knowledge based on facts collected from experience. It is a pragmatic sort of research that provides a means of testing "theory" that has merely been theorized, as well as validating practice that has been sustained mostly by unquestioned tradition. Furthermore, it allows for the development of new procedures, strategies, and instruments based on a methodical investigation of individual circumstances.

The Guidance Management System will be develop using this research design, which corresponds to the Agile Model. The evaluation process will follow the ISO 25010 software quality assurance standards.

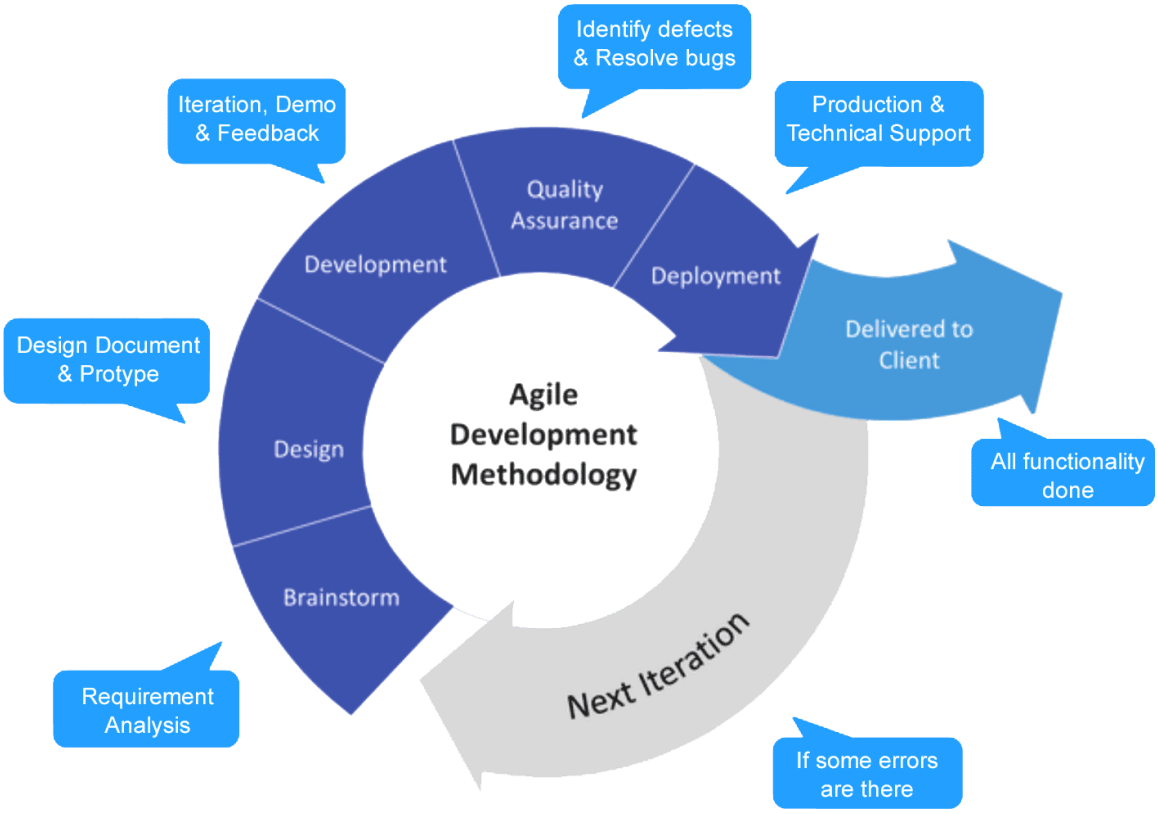


Figure 2. SDLC's Agile Model

Figure 2 illustrates all phases of the Agile Model of the Software Development Life Cycle (SDLC). Agile Methodology, a software development and project management strategy, divides projects into stages and emphasizes adaptability, teamwork, and client focus. These stages encompass requirement analysis, designing, developing, testing, deployment, which will serve as the roadmap for the researchers to complete this capstone project.

It is important to reiterate that after the development phase, there will be a feedback loop where the system will be evaluated using ISO 25010 Software Product Quality Standard. This evaluation ensures that the Guidance Management System meets the required criteria for functional suitability, reliability, usability, performance efficiency, compatibility, security, maintainability, and portability, thus ensuring its effectiveness and adherence to industry standards.

Research Locale

The research will be conducted at Bongabon National High School, located in the municipality of Bongabon, Nueva Ecija, Philippines. Bongabon National High School was chosen as the research locale due to its relevance to the study's objectives and the need for the implementation of a Guidance Management System to improve student counseling and support services.

Figure 3. Bongabon National High School Bldg.

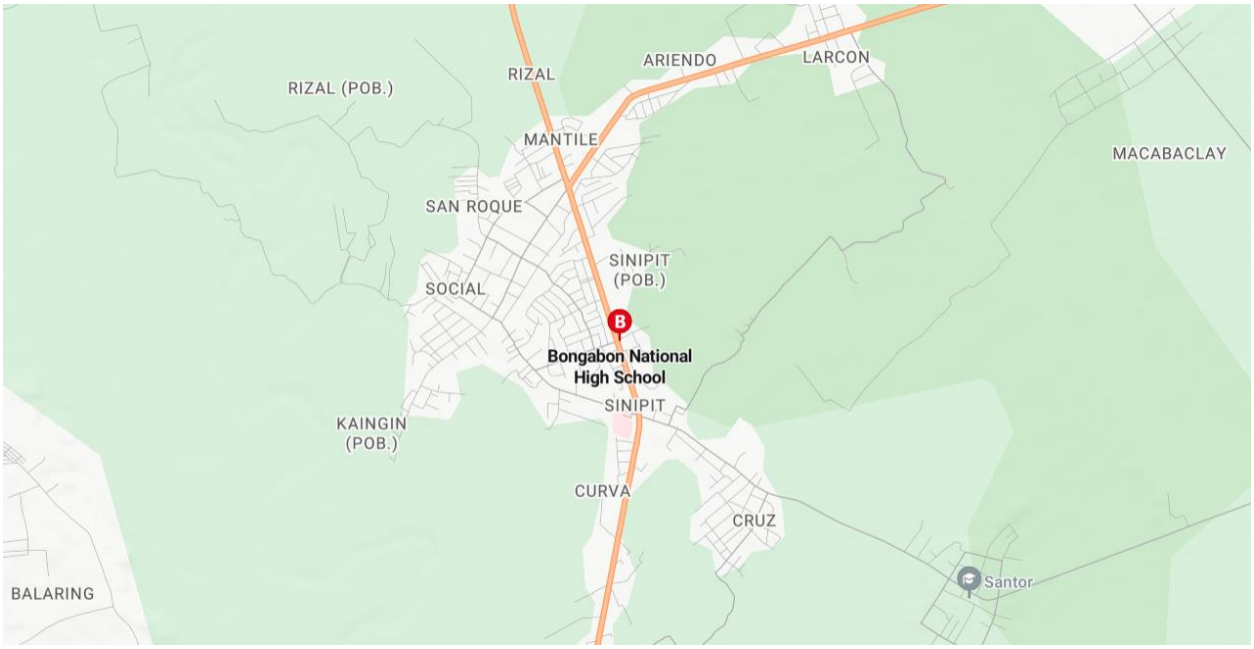


Figure 4. Location Map

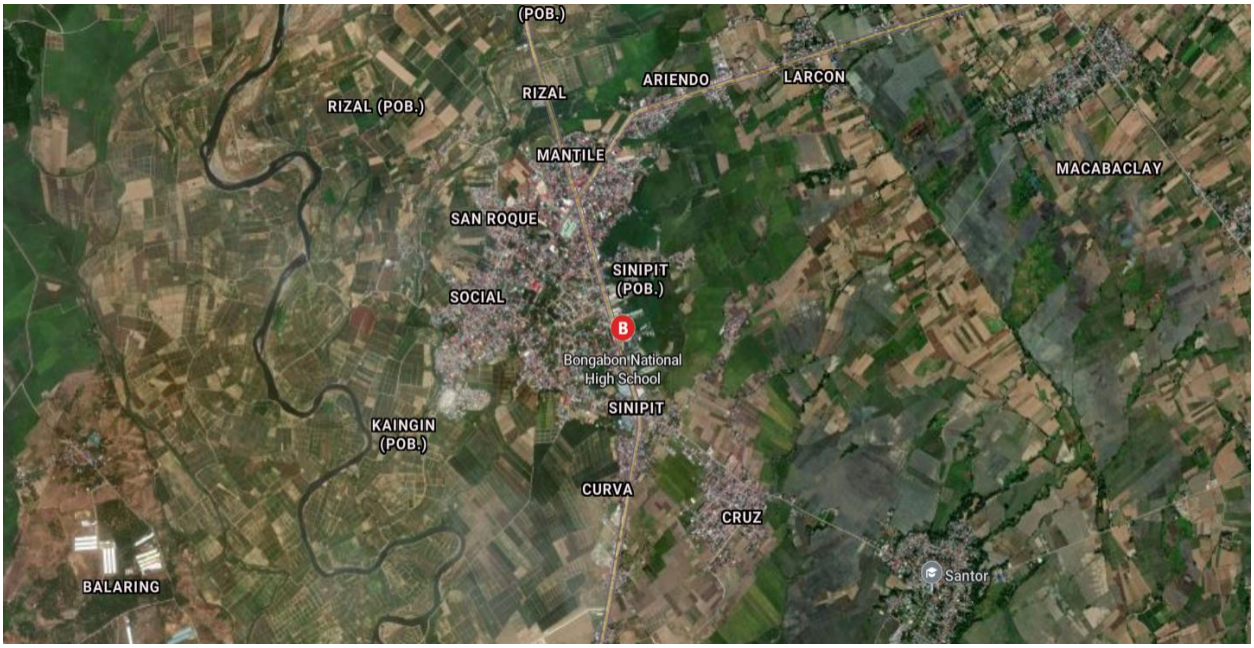


Figure 5. Bongabon National High School Location in Satellite View

Sampling Technique

Respondents are selected using a purposive sampling technique based on their responsibilities and involvement in the development and implementation of the Guidance

Management System. Purposive sampling is a non-probability technique for collecting a sample in which researchers apply their experience to select certain individuals who will help the study achieve its goals. The respondents of this study, such as IT experts, end-users, including students, and guidance counselor, have particular characteristics that the researchers need in order to evaluate their research question. In other words, the researchers choose their respondents "on purpose." Statisticians also call this technique judgmental sampling because it involves using judgment to choose which respondents will best help the study answer its research question.

Respondents of the Study

The study involved a diverse range of respondents, including 5 IT experts, 1 guidance counselor, and 25 students from Bongabon National High School. This diversity ensured a comprehensive review of the system from various perspectives, encompassing technological expertise, counseling knowledge, and user perspectives. The study enabled IT experts, guidance counselor, and students to evaluate the Guidance Management System. Their assessments will be helpful in analyzing technical performance, applicability to counseling procedures, and user satisfaction.

Table 1.

Distribution of respondents according to category

Type of Respondents	Frequency	Percentage
IT Experts	5	1.28%
End Users:		
Guidance Counselor	1	0.26%
Students	385	98.46%
Total:	391	100%

Research Instrument

To evaluate the study, researchers will use interviews to gather data for their research. Each respondent will be interviewed individually, with questions adapted to the study's objectives. The interview will address topics such as perceptions of present guidance and

counseling services, difficulties in manual data collection and maintenance, expectations and preferences for the Guidance Management System, and recommendations for improving advice and counseling services.

In addition to conducting interviews with respondents, researchers will use a series of survey questionnaires to gather information from IT experts and end-users. The survey questionnaire will be created to go along with the interview data and offer additional perspectives on the Guidance Management System. The questionnaire will intend to get feedback from IT experts according to the criteria of the ISO 25010 Software Product Quality Standards: (1) Functional Suitability; (2) Reliability; (3) Usability; (4) Performance Efficiency; (5) Compatibility; (6) Security; (7) Maintainability; and (8) Portability.

Similarly, the survey questionnaire will be distributed to end-users, such as counselor and students, to get feedback on (1) functional suitability, (2) reliability, and (3) usability, as well as overall satisfaction with the Guidance Management System. Questions may address user experience, ease of navigation, feature relevance, and recommendations for improvement. Both surveys will be designed with careful consideration of the study's objectives, ensuring alignment with the topics addressed in the interviews.

The responses received from IT experts and end-users will be kept confidential and anonymous, just as the interview data had been. Any comments or suggestions received through surveys will be helpful in developing the Guidance Management System and enhancing its effectiveness in providing guidance and counseling services.

Data Gathering Procedures

The data collection technique will involve conducting interviews with selected respondents to gather necessary information. These interviews will be organized at convenient times and conducted in a secure setting to encourage open and transparent responses. Additionally, respondents will be given a survey questionnaire to gather feedback on the Guidance Management System. The survey questionnaire will be distributed online or through a printed form, and respondents will have enough time to complete it. Clear instructions will be provided to assure understanding of the survey questions, and confidentiality will be maintained to encourage transparent responses. Furthermore, follow-up discussions will be arranged with

respondents to go further into certain aspects of their feedback, providing for a more comprehensive understanding of their perspectives.

Data Analysis Techniques

The data analysis technique that will be employed in this research aims to comprehensively assess the effectiveness of the Guidance Management System.

In addition to the interview data analysis, the researchers will use survey questionnaires to gather insights from IT experts and end-users, such as guidance counselor and students, aiming to comprehensively assess the effectiveness of the Guidance Management System at Bongabon National High School and identify areas for improvement. The survey questionnaires encompassed various aspects:

Technical Assessment (IT Experts): Assessing the technical aspects according to the criteria of the ISO 25010 Software Product Quality Standards: (1) Functional Suitability; (2) Reliability; (3) Usability; (4) Performance Efficiency; (5) Compatibility; (6) Security; (7) Maintainability; and (8)Portability.

User Experience Evaluation (End-User): Focused on the user experience, including ease of use, navigation, and accessibility; assessing the system to get feedback on 1) functional suitability, (2) reliability, and (3) usability, as well as overall satisfaction, and areas for improvement with the Guidance Management System.

The data to be collected from the respondents were a traditional face-to-face survey questionnaire technique. The data gathered were examined by obtaining the weighted mean of each questionnaire item criterion.

Table 2 will be used to measure functional suitability.

Table 2.

Scoring Guide for Functional Suitability

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 3 will be used to measure performance efficiency

Table 3.

Scoring Guide for Performance Efficiency

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 4 will be used to measure compatibility.

Table 4.

Scoring Guide for Compatibility

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 5 will be used to measure usability.

Table 5.

Scoring Guide for Usability

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 6 will be used to measure reliability.

Table 6.

Scoring Guide for Reliability

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 7 will be used to measure the security feature.

Table 7.

Scoring Guide for Security

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 8 will be used to measure maintainability.

Table 8.

Scoring Guide for Maintainability

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

Table 9 will be used to measure portability.

Table 9:

Scoring Guide for Portability

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

The table below will be used to measure the overall assessment.

Table 10.

Scoring Guide for Overall Assessment

Scale	Range	Verbal Description
4	3.25 – 4.00	Very Functional
3	2.50 – 3.24	Functional
2	1.75 – 2.49	Needs Improvement
1	1.00 – 1.74	Poor

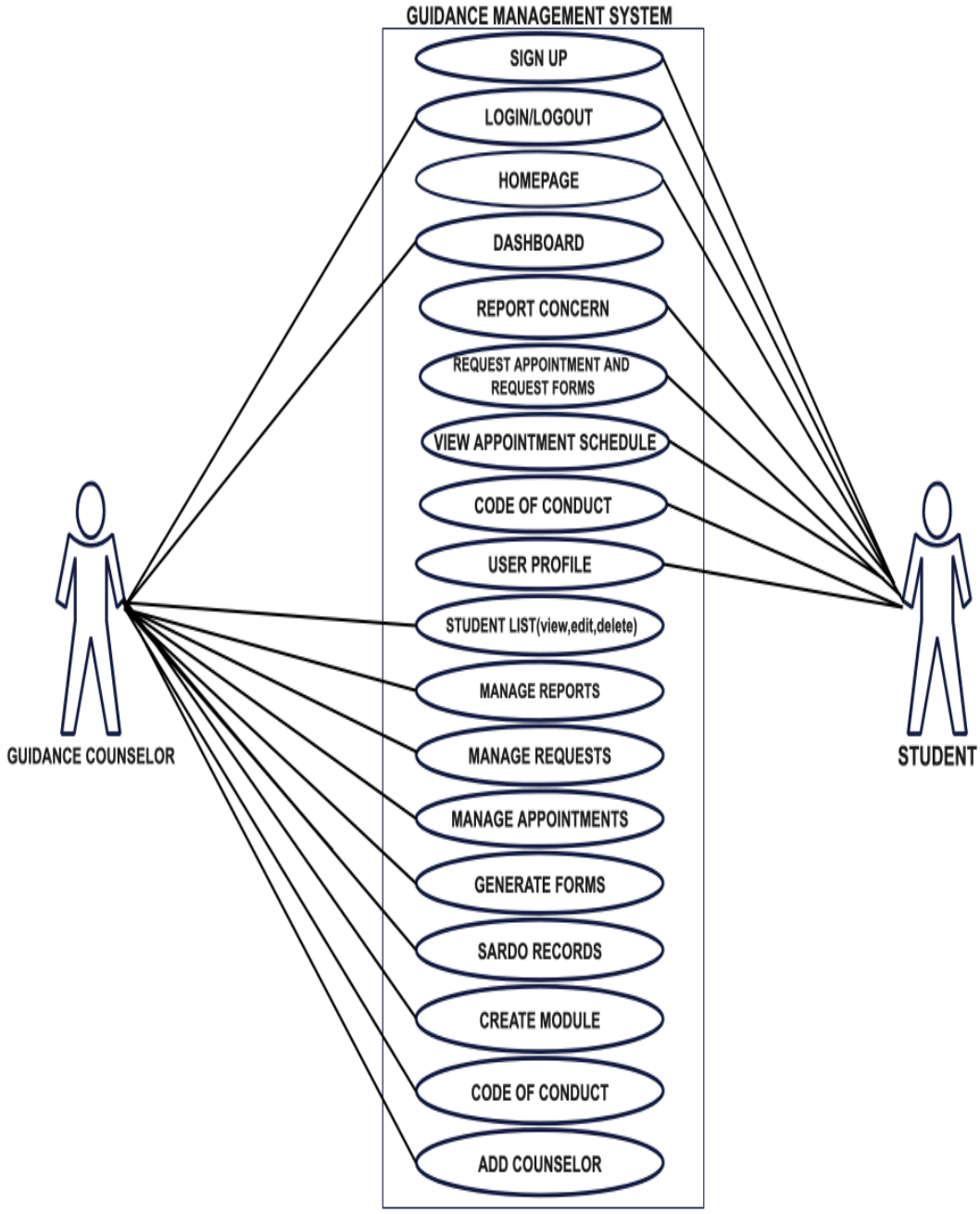
By interpreting the results, researchers can discern patterns, trends, strengths, and areas for improvement. The Likert scale serves as a valuable tool for systematically collecting and analyzing subjective opinions and attitudes, thereby enabling informed decision-making based on the gathered data.

By integrating these survey questionnaires with the interview data analysis, the researchers gained a comprehensive understanding of the Guidance Management System's effectiveness. The surveys provided quantitative data to complement the qualitative insights obtained through interviews, enriching the overall assessment and informing recommendations for improvement of the Guidance Management System and its impact on student counseling services at Bongabon National High School.

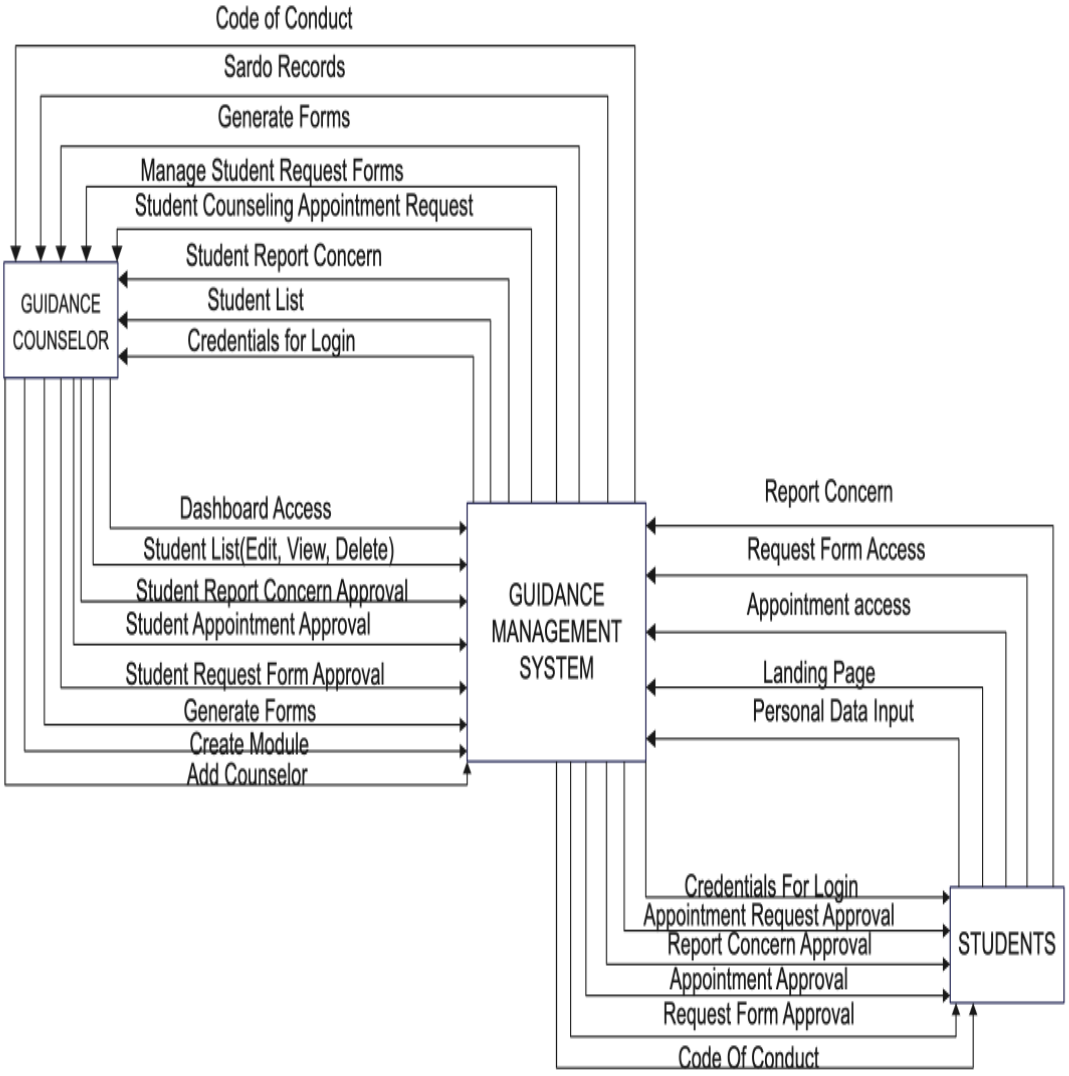
Ethical Concern

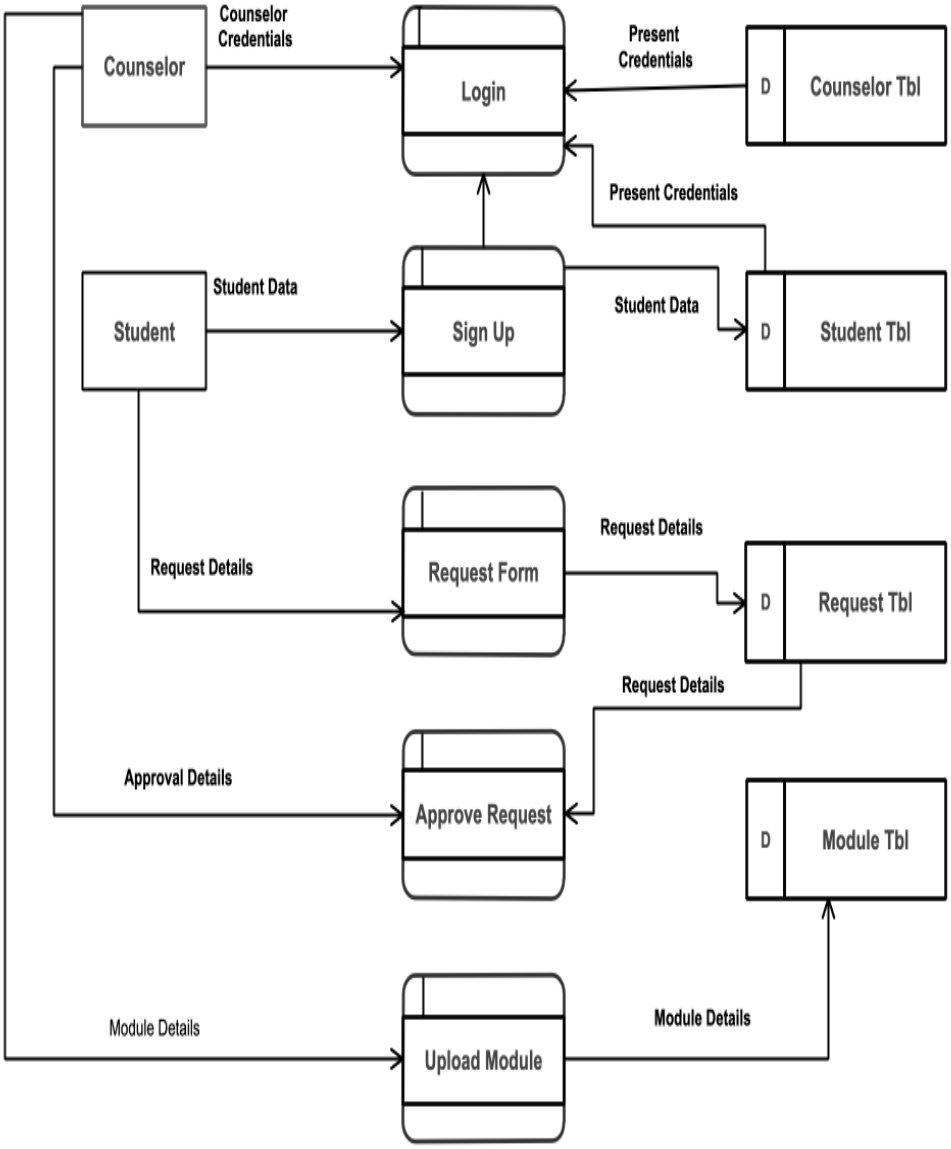
In the research on guidance management systems, one ethical concern revolves around the potential inefficiencies and time-consuming nature of manual guidance record management. This concern may arise if the current method of managing guidance records relies heavily on manual processes, consuming significant time and resources. If stakeholders, such as educational institutions or guidance counselors, raise this concern, it highlights the need for a more streamlined and efficient approach to managing guidance-related data. In response, researchers may consider developing an automated guidance management system to address these concerns and optimize time management for stakeholders involved. Additionally, to ensure ethical standards are upheld throughout the research process, researchers may utilize fictitious or anonymized data during the testing and development phases of the system. This approach safeguards the privacy and confidentiality of individuals involved in the research, mitigating any unintended consequences or risks associated with the use of real personal data. Furthermore, researchers should explicitly state in their research documentation that any resemblance to real individuals or data within the system is purely coincidental and unintended, reinforcing their commitment to ethical research practices.

USE CASE DIAGRAM OF GUIDANCE MANAGEMENT SYSTEM

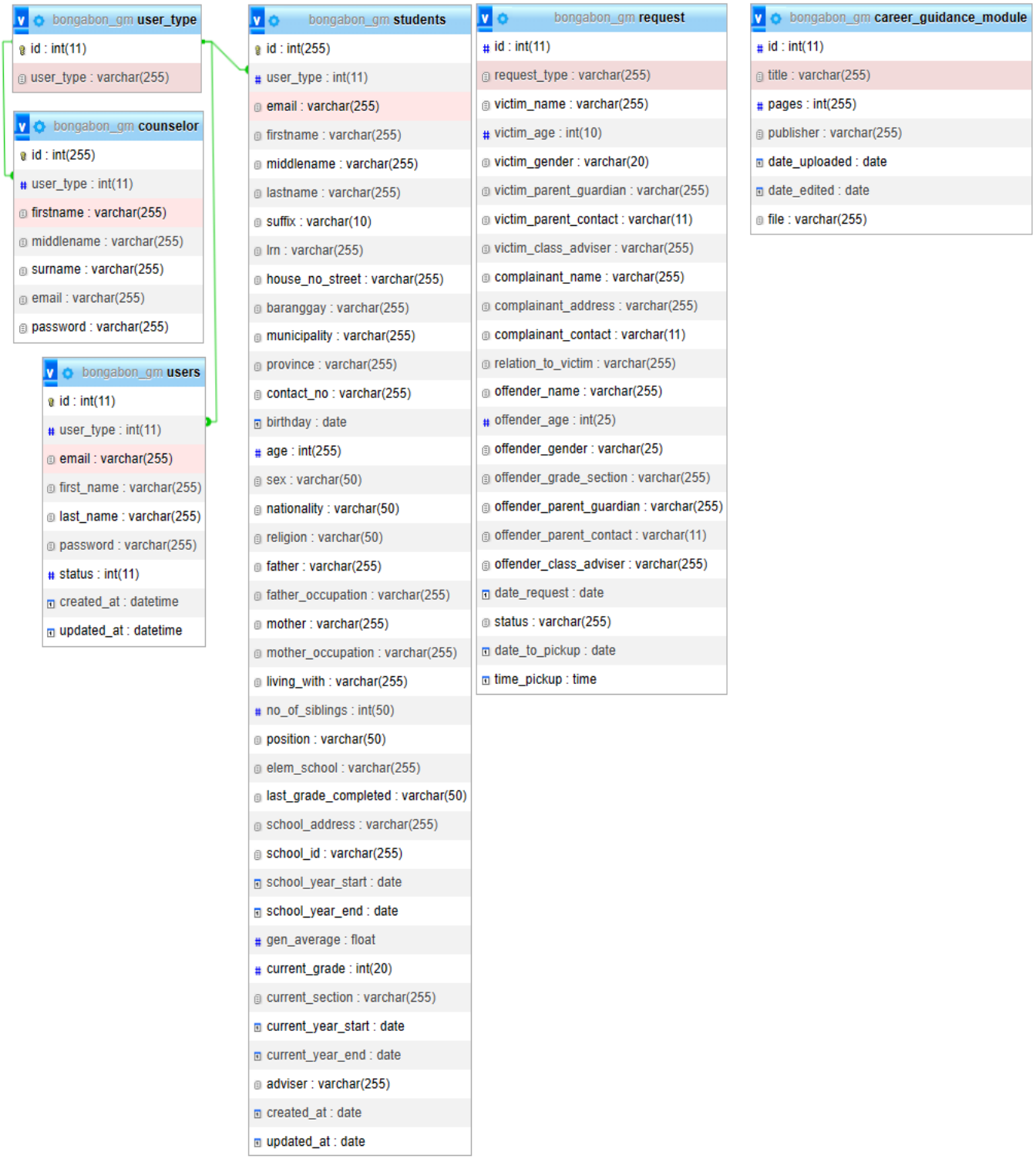


DATA FLOW DIAGRAM OF GUIDANCE MANAGEMENT SYSTEM




Counselor
Counselor Credentials
Login
Present Credentials
D
Counselor Tbl
Present Credentials
Student
Student Data
Sign Up
Student Data
D
Student Tbl
Request Details
Request Form
Request Details
D
Request Tbl
Request Details
Approval Details
Approve Request
D
Module Tbl
Module Details
Upload Module
Module Details

ENTITY RELATIONSHIP DIAGRAM FOR GUIDANCE MANAGEMENT SYSTEM



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