

**Development of my.OGC: A Web-Based Platform for Integrated Counseling
and Guidance Services at MSU-IIT**

An Undergraduate Capstone Project

Presented to the Faculty of the
Department of Information Technology
College of Computer Studies
MSU-Iligan Institute of Technology

In Fulfillment of the Requirements in the Degree of
Bachelor of Science in Information Technology

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December 2024

TABLE OF CONTENTS

	Page
TITLE PAGE -----	i
TABLE OF CONTENTS -----	ii
LIST OF TABLES -----	iii
LIST OF FIGURES -----	iv
CHAPTER 1 INTRODUCTION -----	1
1.1 Background of the Study -----	1
1.2 Statement of the Problem -----	3
1.3 Objectives of the Study -----	4
1.3.1 General Objective -----	4
1.3.2 Specific Objectives -----	4
1.4 Significance of the Study -----	4
1.5 Scope and Limitations -----	5
1.6 Conceptual Framework -----	6
1.7 Definition of Terms -----	9
CHAPTER 2: REVIEW OF RELATED LITERATURE-----	10
2.1 Related Literature -----	12
2.2 Related Systems -----	21
CHAPTER 3: METHODOLOGY -----	25
3.1 Research Design -----	25
3.2 Participants and Sampling -----	25
3.3 Research Instruments -----	27
3.4 Data Collection Procedure -----	28
3.5 Data Analysis Plan -----	29
3.6 Ethical Considerations -----	30
3.7 System Design and Development -----	31
REFERENCES -----	55
APPENDICES -----	63

LIST OF TABLES

Table No.	Title	Page
2.1	Comparative Features of Related Counseling Systems	22
3.1	Use Case Specifications of my. OGC Management System	46
3.2	Description of Nodes in the Deployment Diagram of myOGC Management System	53
3.3	Alpha Testing Focus Areas by System Module	54

LIST OF FIGURES

Figure No.	Title	Page
1.1	Activity Diagram of the Current Process of Office of the Guidance and Counseling	2
1.2	Input-Process-Output Model of the Proposed System	8
3.1	Activity Diagram of My.OGC Management System	32
3.2	Three-Tier System Architecture of my.OGC Management System	33
3.3	Entity Relationship Diagram of my.OGC	37
3.4	RAD Model of my.OGC	38
3.5	Use Case Diagram of my.OGC	40
3.6	Class Diagram of my.OGC	46
3.7	Sequence Diagram for Student Appointment Booking Process	48
3.8	Sequence Diagram for Mental Health Corner Access	49
3.9	Sequence Diagram for Counselor Appointment Management Process	50
3.10	Sequence Diagram for Admin System Management	51
3.11	Deployment Diagram of my.OGC Management System	52

CHAPTER 1

INTRODUCTION

Guidance and counseling services play a pivotal role in addressing a wide range of student concerns—academically, personally, and professionally. Globally, students often face challenges such as academic pressure, time management difficulties, low self-esteem, anxiety, and indecision regarding career paths (Collegenp, n.d.). These problems, if left unaddressed, can lead to poor academic performance, disengagement, and mental health issues. In the Philippines, similar trends are evident, with students struggling with emotional instability, family-related stress, peer pressure, and unclear career direction, especially during transitional stages such as entering college or approaching graduation (Higher Education Digest, 2020).

Despite the growing recognition of mental health and student well-being, many higher education institutions still use outdated systems that limit the accessibility and efficiency of support services. Traditional, paper-based processes often result in scheduling conflicts, missed appointments, and administrative delays. Some universities have adopted systems like MyCounselor to improve digital communication and appointment booking between students and counselors, yet these platforms often lack full integration of guidance services.

Locally, at Mindanao State University – Iligan Institute of Technology (MSU-IIT), the Office of Guidance and Counseling (OGC) faces increasing pressure due to a growing student population and limited staff and technological support. The current manual system is no longer sufficient to accommodate the rising demand for timely and effective counseling. As a result, students encounter barriers when seeking help, including delays in appointment scheduling and a lack of continuous monitoring of their concerns.

Given these challenges, there is a critical need for a centralized, digital platform that integrates all aspects of guidance and counseling—such as appointment management, student records, and communication—to improve service delivery and ensure that students receive the support they need when they need it most.

1.1 Background of the Study

Guidance and counseling services play a crucial role in supporting students with academic challenges, personal issues, and career planning. These services are essential for promoting students' well-being, academic success, and overall personal

growth. They address various needs, including mental health support, career development, and personal counseling. However, many schools, including MSU-IIT, continue to rely on manual record keeping. These outdated methods often result in inefficiencies such as missed appointments, delays, and excessive paperwork.

While some schools have made efforts to modernize by adopting small digital systems, these solutions remain inadequate. They often lack the ability to integrate all necessary functions into a unified platform, which hinders effective communication and coordination between students and counselors. This highlights the need for a more comprehensive digital system that consolidates all aspects of counseling services into a single platform. Such a system would minimize time spent on administrative tasks and enhance the quality and accessibility of services.

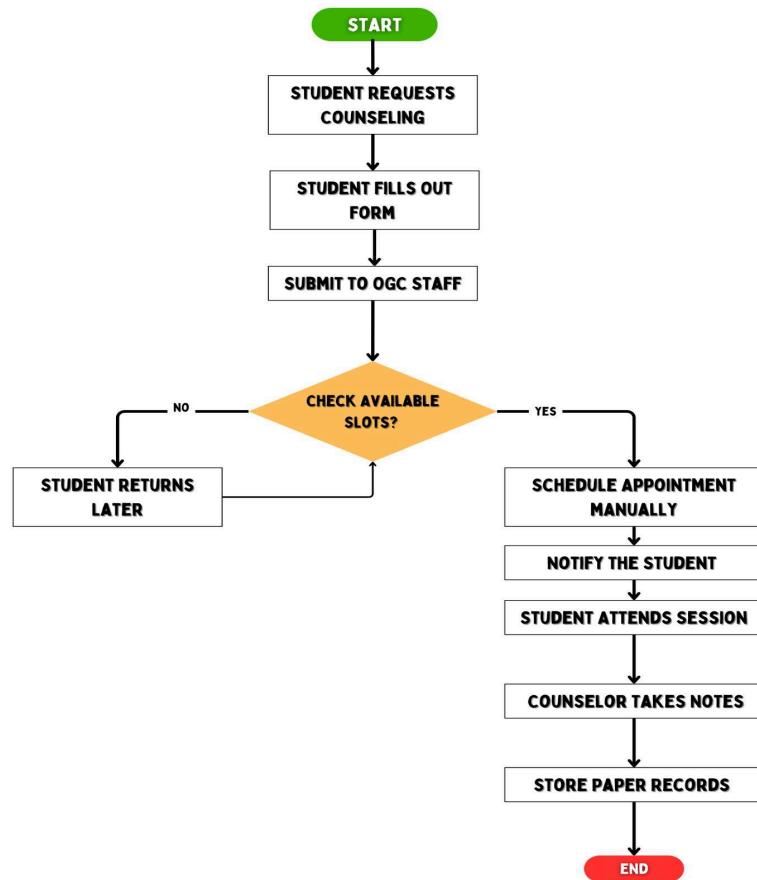


Figure 1.1 Activity Diagram of the Current Process of Office of the Guidance and Counseling

This activity diagram illustrates the current process of the Office of the Guidance and Counseling. The process starts when a student requests counseling by visiting the guidance office in person. The student fills out a paper form and submits it to the OGC staff, who manually check for available slots. If a slot is available, the appointment is scheduled, and the student is notified via phone call, text, email or an office visit. On the scheduled day, the student attends the session, and the counselor records notes on paper, which are then stored manually. This manual process increases the risk of scheduling conflicts, lost records, and inefficiencies in service delivery.

In the Philippines, systems such as MyCounselor have been developed to tackle challenges in counseling services. These systems provide digital solutions for tasks like appointment scheduling, record-keeping, and facilitating communication between students and counselors. Despite these advancements, MyCounselor has limitations, particularly its inability to integrate with other essential services, such as event scheduling. This lack of integration hinders its ability to offer a comprehensive and holistic support system for students (Lee et al., 2019).

At MSU-IIT, the growing student population and limited resources emphasize the need for a more integrated and efficient approach to managing guidance and counseling services. The current systems are not sufficient to meet the increasing demand, highlighting the need for a solution that centralizes various services, such as counseling, event management, and feedback collection, into one platform.

This study aims to develop such a digital system tailored specifically to the needs of MSU-IIT's Office of Guidance and Counseling (OGC). The proposed system will streamline services, enhance communication, and improve overall efficiency, enabling students to easily access the support they need. By reducing the reliance on manual processing, the system will also improve record-keeping, save office space, and ensure faster service delivery. The development of this system will address the gaps in current digital solutions and provide a comprehensive tool to enhance counseling services at MSU-IIT.

1.2 Statement of the Problem

Many educational institutions continue to rely paper-based for managing guidance counseling services, leading to issues such as scheduling errors, delays, and excessive paperwork. These inefficiencies hinder counselors' ability to provide timely and effective support to students in areas like academics, emotional well-being, and

personal growth. A study reviewing web-based support systems for students in higher education highlighted the increasing need for accessible and efficient services to support students facing psychological and academic challenges (IJMHS, 2017).

At MSU-IIT, the Office of Guidance and Counseling (OGC) offers essential services to help students achieve self-realization by enabling them to understand themselves in relation to their social and psychological world. Despite an increased openness among students to avail counseling services, the OGC identifies a low turnout of closure and follow-through (37.46%) of cases as a common risk, as students tend to prioritize academic work over scheduled sessions or due to scheduling oversight (MSU-IIT OGC, 2023).

This study aims to address these challenges by developing a digital solution that streamlines counseling processes and enhances accessibility, thereby improving the overall quality of guidance services at MSU-IIT.

1.3 Objectives of the Study

This section provides the objectives in developing the integrated digital platform for the Counseling and Guidance Services of MSU-IIT. This study proposes the development of **my.OGC**, a web-based platform specifically designed for MSU-IIT's Office of Guidance and Counseling (OGC).

1.3.1 General Objective

To develop a web-based platform for the Counseling and Guidance Services of MSU-IIT, enhancing the efficiency, accessibility, and comprehensiveness of student support services.

1.3.2 Specific Objective

1. To gather system requirements for the Guidance and Counseling Services Platform through interviews and surveys.
2. To design a digital platform for Guidance and Counseling Services that efficiently organizes appointment management.
3. To develop the platform with user-friendly features that ensure seamless accessibility for students to book appointments, access resources, and enhance overall usability.
4. To evaluate the system's usability, functionality, and perceived effectiveness through internal testing and data gathered from guidance counselor feedback instruments.

1.4 Significance of the Study

This study aims to enhance the efficiency and accessibility of guidance and counseling services at MSU-IIT. By developing a digital system that integrates appointment scheduling, event management, and a mental health corner, it addresses the inefficiencies of traditional manual processing, making counseling services more accessible to students. Additionally, it explores how technology can improve counseling practices, strengthen student support, and reduce administrative burdens.

The platform seeks to reduce paper usage, improve record-keeping accuracy, and save office space. By modernizing MSU-IIT's guidance services, this study aims to create a more effective, student-centered solution that streamlines administrative tasks for counselors and enhances the overall quality of support for students.

1.5 Scope and Limitations

Scope of the Study

This study focuses on developing an integrated guidance and counseling services platform for the Office of Guidance and Counseling (OGC) at Mindanao State University-Iligan Institute of Technology (MSU-IIT). The platform aims to centralize key functions of the OGC, thereby enhancing both efficiency and accessibility for students seeking guidance.

The target population comprises the guidance counselors at MSU-IIT, who are directly involved in managing appointments, maintaining student records, collecting feedback, and organizing events. Conducted over six months starting in January 2025, this study employs a mixed-methods approach to evaluate the platform's effectiveness. Qualitative data will be gathered through semi-structured interviews with guidance counselors to explore their experiences and expectations regarding the current and proposed systems. Concurrently, quantitative data will be collected via structured surveys to measure counselors' satisfaction with the system's functionality, usability, and overall impact on counseling services. This dual approach allows for comprehensive analysis by triangulating qualitative insights with quantitative measurements.

The primary goal is to develop a user-friendly digital system that improves the accessibility and management of counseling services at MSU-IIT, ensuring timely and effective support for students while enhancing the efficiency of the OGC staff.

Although the platform is designed to serve students, this study exclusively involves guidance counselors in the evaluation process to obtain in-depth insights into the system's functionality and alignment with professional needs, with student feedback to be considered in future evaluations. The study targets guidance counselors at MSU-IIT as the primary users during the development and evaluation phases. The platform is designed to benefit students indirectly by improving service delivery and accessibility.

Limitations of the Study

This study has several limitations that could affect the results. First, some students may find the platform challenging to use due to the differences in computer skills. Additionally, students without reliable internet access or suitable devices may have trouble fully engaging with the system, which could impact their experience. The study will focus only on MSU-IIT students aged 18-25, meaning the results may not apply to other groups, such as faculty or staff. The six-month testing period might also be too short to evaluate the long-term effects of the platform on students' use of counseling services. Finally, the platform will only handle counseling appointments and related communication. It will not cover other services offered by the Office of Guidance and Counseling or integrate with other university systems. These limitations should be taken into account when interpreting the results.

1.6 Conceptual Framework

The IPO Model serves as the foundation for the systematic design, development, and evaluation of my.OGC. This framework ensures that the system effectively meets the needs of both counselors and students by addressing key pain points in the traditional guidance and counseling workflow.

Input

1. Assessment of Current Counseling Processes at MSU-IIT
 - Evaluation of existing workflows within the OGC
 - Identification of challenges in appointment scheduling and student support

2. Challenges Associated with Paper-Based Systems
 - Inefficiencies in manual scheduling, leading to missed appointments
 - Difficulty in maintaining and retrieving student counseling records
 - Lack of automated reminders and follow-ups
3. Stakeholder Feedback
 - Surveys and interviews with guidance counselors and students regarding system needs
 - Identification of preferred features such as online scheduling, feedback collection, and self-help resources
4. Technological Considerations

Process

1. Design and Development:
 - User interface and experience (UI/UX) design tailored for students and counselors
 - Database architecture ensuring secure storage and efficient retrieval of records
 - Development of scheduling, record management, and notification systems
2. System Implementation:
 - **Appointment Scheduling Module:** Enables students to book and manage counseling sessions online
 - **Automated Notifications:** Sends reminders for scheduled appointments and follow-ups
 - **Mental Health Corner:** Offers resources such as articles, self-assessment tools, and FAQs
3. Testing and Validation:
 - **Usability testing** conducted with counselors to assess system functionality
 - **Performance evaluation** measuring response time, reliability, and data integrity
 - **Security assessment** ensuring compliance with data privacy standards
4. User Feedback and System Refinement:

- Collection of feedback through surveys and interviews post-implementation
- Iterative updates to enhance usability and feature effectiveness

Output

1. Web-based Guidance and Counseling Platform
 - A fully functional digital platform accessible to both students and counselors
 - Secure authentication and **role-based access control (RBAC)**
2. Enhanced Counseling Services
 - Streamlined appointment scheduling, reducing missed sessions
 - Integration of feedback mechanisms to continuously improve services
3. Enhanced features like activity calendar and mental health corner
4. Improved Accessibility and User Experience

Outcome

The implementation of my.OGC is expected to yield the following outcomes:

1. Improved Guidance and Counseling Services at MSU-IIT
2. Minimized Dependence on Paper-Based Systems
3. Enhanced Student Engagement and Well-Being
4. Data-Driven Decision Making

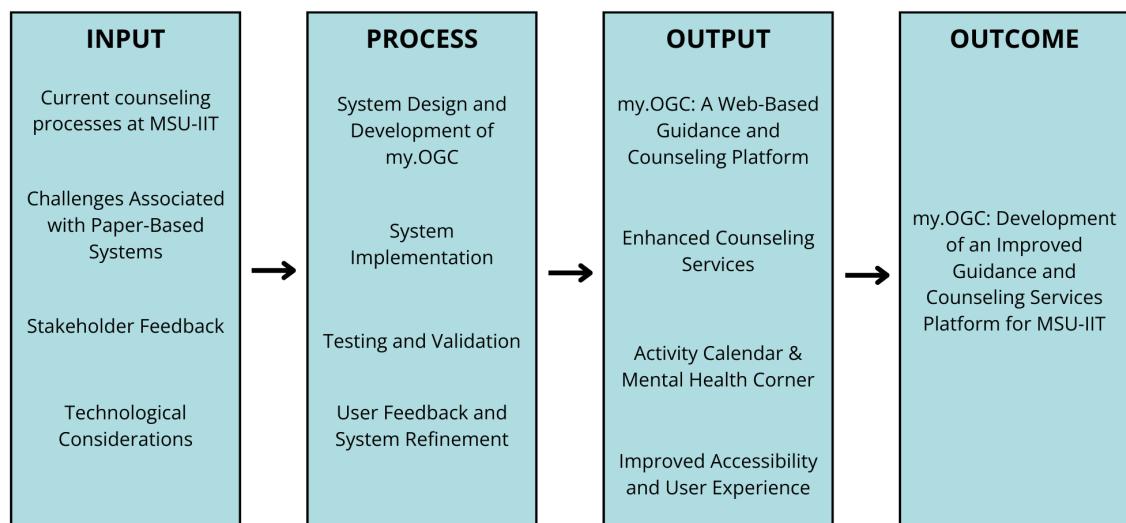


Figure 1.2 Input-Process-Output Model of the Proposed System

The adoption of my.OGC represents a significant advancement in **modernizing the guidance and counseling services** at MSU-IIT. By addressing

inefficiencies in appointment scheduling, record management, and mental health support, this system fosters a more accessible, efficient, and student-friendly approach to counseling services.

1.7 Definition of Terms

The following terms are operationally defined as they are used in this study:

Appointment Scheduling. The systematic process of booking, managing, and tracking counseling sessions through the digital platform, specifically referring to the online functionality that allows students to select available time slots with counselors and enables counselors to manage their availability and session calendars within the myOGC system.

Counseling Services. The comprehensive support activities provided by MSU-IIT's Office of Guidance and Counseling, including but not limited to academic guidance, career counseling, personal counseling, mental health support, and crisis intervention services delivered to currently enrolled students.

Digital Platform. The web-based software application (myOGC) designed specifically for this study to automate appointment scheduling, maintain digital records, manage resources, and facilitate communication between students and counselors, replacing the current paper-based system at MSU-IIT's OGC.

Guidance and Counseling. The professional services provided by licensed or trained counselors at MSU-IIT's OGC to assist students in personal development, academic success, career planning, and mental health support through individual sessions, group activities, and resource provision.

Mental Health Corner. A dedicated digital section within the myOGC platform containing curated mental health resources including educational articles, self-assessment tools, coping strategies, and multimedia materials accessible to students for self-help and psychological well-being support.

myOGC (my Office of Guidance and Counseling). The web-based platform developed for this study to serve MSU-IIT's Office of Guidance and Counseling, integrating appointment scheduling, resource access, and basic communication functionalities to enhance service delivery efficiency and student accessibility.

Requirements Gathering. The systematic data collection process conducted in Phase 1 of this study involves structured interviews and surveys with guidance counselors to identify system needs, functional specifications, and user preferences that inform the design and development of the myOGC platform.

System Evaluation. The comprehensive assessment process conducted in Phase 4 of this study to measure the myOGC platform's usability, functionality, and perceived effectiveness through structured testing protocols, user feedback surveys, and follow-up interviews with guidance counselors.

System Usability. The measurable extent to which the myOGC platform enables intended users (students and counselors) to complete specific tasks effectively, efficiently, and satisfactorily, assessed through task completion rates, navigation ease, error frequency, and user satisfaction metrics.

User-Centered Design. The design methodology employed in this study that prioritizes the documented needs, preferences, and limitations of MSU-IIT students and counselors throughout the myOGC development process, ensuring the platform aligns with actual user workflows and capabilities.

User Satisfaction. The quantifiable degree to which guidance counselors report that the myOGC platform meets their professional needs and expectations, measured through structured survey instruments using Likert scales and qualitative feedback collection methods.

Web-based Platform. A software application accessible through standard web browsers (Chrome, Firefox, Safari, Edge) that operates on remote servers, requiring internet connectivity but no local software installation, designed to function across multiple devices (computers, tablets, smartphones) used by MSU-IIT students and staff.

These operational definitions establish specific meanings for key concepts as they apply within the context of this research study and the development of the myOGC platform for MSU-IIT.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Mental health issues, particularly anxiety and depression, have been on the rise among Filipino university students. A study by Alejandria et al. (2023) highlights the increasing prevalence of these concerns, emphasizing the need for culturally relevant mental health frameworks within Philippine universities. Additionally, research indicates that psychological distress is prevalent among university students, with anxiety, depression, and stress being common issues. The COVID-19 pandemic has exacerbated these challenges, leading to heightened levels of psychological distress among students.

Beyond the general prevalence of anxiety and depression, Filipino university students face specific mental health challenges such as academic burnout due to high academic expectations (Reyes, 2022), social anxiety related to peer pressure and cultural norms (Ramos et. al., 2024), and adjustment disorders when transitioning from high school to university life (Logenio et. al., 2023). Furthermore, financial stress, particularly for students from lower socioeconomic backgrounds, significantly contributes to psychological distress (Corpuz, 2023).

While national studies provide general insights into student mental health, research specifically focusing on Mindanao remains limited. However, regional studies and assessments indicate that socio-economic and cultural factors unique to Mindanao significantly influence students' mental health and their access to counseling services. Economic disparities and underdeveloped infrastructure in rural areas hinder the availability of mental health support (Acción Contra el Hambre, 2023). In addition, cultural stigmas—particularly among indigenous and Muslim communities—contribute to the reluctance in seeking professional help (De Guzman et al., 2021). These beliefs are often tied to fear of judgment, fatalistic views, and strong religious influences. The digital divide further complicates mental health access, with many low-income students reporting unstable internet and limited access to digital devices (Mateo et al., 2023). These compounded challenges underscore the need for culturally sensitive, accessible, and infrastructure-aware interventions like *my.OGC* that can effectively address the unique needs of students in Mindanao.

Cultural factors also influence help-seeking behavior. Stigma surrounding mental health issues and a preference for informal support networks (e.g., family,

friends) can deter students from seeking professional help from guidance counselors (Martinez et. al., 2020).

These mental health challenges have significant consequences for students' academic performance, leading to decreased concentration, lower grades, and increased risk of dropping out (Hong, 2025). Furthermore, poor mental health can negatively impact social relationships, leading to isolation and loneliness (Iglesia & Cimafranca, 2024). Ultimately, this affects their overall well-being and future career prospects.

While specific studies focusing solely on Mindanao are limited, research involving university students in South Central Mindanao provides valuable insights into the challenges faced during online learning amid the COVID-19 pandemic. Rotas and Cahapay (2020) identified several difficulties reported by students, including unstable internet connectivity, limited learning resources, and increased mental health concerns. In a follow-up study, the same authors (2021) explored how these students coped, highlighting strategies such as peer support, time management, and self-regulation.

Given these trends, it's reasonable to infer that MSU-IIT students may experience similar mental health challenges. Developing a digital platform for the Office of Guidance and Counseling could enhance accessibility to mental health resources, provide timely support, and address the specific needs of the student population

While research has explored the use of technology in guidance counseling, limited studies have focused on the implementation and evaluation of integrated platforms in the Philippine context, particularly within state universities like MSU-IIT. This study aims to bridge this gap by developing my.OGC, a web-based platform tailored to enhance counseling and guidance services. By integrating appointment scheduling, pre-screening mechanisms, mental health resources, and event management, the platform seeks to improve accessibility, efficiency, and student engagement. The study will also assess the platform's usability, functionality, and impact, contributing valuable insights for the advancement of technology-driven counseling services in higher education institutions.

2.1 Review of Related Literature

1. Role of Guidance Counseling in Student Development

Guidance counseling is very important for helping students grow and succeed. It supports their learning, emotional well-being, and career plans. According to Lapan et al. (2012), studies show that students who get guidance counseling often do better in school and stay interested in their studies. Counselors do more than just help with school advice; they also provide personal support, career guidance, and help with college plans. This makes students better at handling stress, making decisions, and building confidence.

Modern studies, like the one by Mulawarman et al. (2020), say counselors should use new methods and technology to meet today's needs. Using these tools can improve how guidance services work. Counselors help students set good goals, improve their study habits, and deal with emotions. Personal counseling gives students a safe place to talk about their feelings, which can also help them in school.

In the Philippines, studies emphasize the need for a holistic approach to guidance and counseling in schools to address students' multifaceted needs effectively. For instance, a study by Macario et al. (2023) highlights the integration of strategies to improve counseling services in Philippine public schools, ensuring they are accessible and tailored to local contexts. Similarly, a research conducted at Cagayan State University by Addatu-Cambri (2020) underscores the importance of identifying students' specific counseling needs to enhance university guidance programs, addressing academic, emotional, and social challenges. Frameworks like the Developmental Model and Person-Centered Approach show that counseling should change and grow with students (Corey, 2005; ASCA, 2019). This way, counseling helps both school success and personal development.

Effective counseling interventions for addressing these issues include Cognitive Behavioral Therapy (CBT) for anxiety and depression (Linehan, 2015), mindfulness-based techniques for stress reduction (Kabat-Zinn, 1990), and solution-focused therapy for addressing specific challenges (de Shazer, 1985).

Culturally sensitive training for counselors is crucial. Counselors should be trained to understand and address the unique cultural values, beliefs, and experiences of Filipino students (Enriquez, 1993 - Sikolohiyang Pilipino).

However, several barriers prevent students from accessing guidance counseling services. These include stigma associated with seeking mental health help, lack of awareness about available services, and accessibility issues such as inconvenient locations and limited operating hours. Moreover, the severe shortage of guidance counselors—sometimes reaching a ratio of 1 counselor to over 14,000 students—significantly limits individual support and intervention (Lacson & Ponte, 2024).

2. Technological Solutions in Guidance Counseling

As technology continues to shape the landscape of education, guidance counseling services are increasingly adopting digital solutions to address traditional challenges. The integration of technology into counseling services offers a wide range of benefits, including improved accessibility, streamlined scheduling, enhanced communication, and better record-keeping (López et al., 2020). In particular, digital systems for appointment scheduling, document management, and student assessments have become essential tools for guidance counselors looking to improve efficiency and responsiveness.

Specific technologies used in guidance counseling include online therapy platforms (e.g., BetterHelp, Talkspace), chatbots for providing initial support and information (e.g., Woebot), and mental health apps for self-monitoring and coping skills training (e.g., Headspace, Calm). These technologies offer increased accessibility and convenience. However, concerns exist regarding data privacy, the lack of face-to-face interaction, and the potential for misdiagnosis or inadequate support. Richards and Richardson (2012) found that while computer-based psychological treatments are effective and generally well-received by participants, issues such as high attrition rates and variability between trials may limit the reliability of these interventions. Additionally, Barnett and Scheetz (2020) highlighted ethical challenges in online psychotherapy, including confidentiality, data security, and the appropriateness of digital tools for complex clinical cases.

Addressing the digital divide is essential. The platform must be designed to be accessible to students with limited access to technology or internet connectivity. This may involve providing offline access to resources, offering alternative means of communication (e.g., phone consultations), and ensuring compatibility with low-bandwidth devices (e.g., older smartphones)

Challenges in Implementing Digital Counseling at MSU-IIT

While digital platforms improve accessibility, the MSU-IIT context presents unique challenges that must be addressed:

- **Infrastructure Limitations:** Unstable internet access and limited availability of devices may hinder students from fully utilizing the platform.
- **Digital Literacy Levels:** Some students and counselors may have limited experience with digital platforms, requiring additional training and user-friendly design considerations.
- **Sustainability and Maintenance:** Ensuring the long-term functionality and relevance of **my.OGC** will require continuous funding, system updates, and dedicated administrative support.

Appointment Scheduling in Healthcare

Manual scheduling in counseling services is a time-consuming process that can lead to inefficiencies and scheduling conflicts. A research by Baker (2021) indicates that digital systems for appointment scheduling can significantly reduce administrative burdens and improve operational efficiency. Just as missed healthcare appointments disrupt medical services, missed or delayed counseling appointments can waste valuable resources and lower the effectiveness of counseling services. According to Ele et al. (2021), studies show that non-attendance rates in healthcare can range from 15 to 50 percent, resulting in wasted time and decreased satisfaction. Implementing a web-based scheduling system can address these issues by streamlining the appointment process, improving accessibility, and reducing missed appointments.

According to local studies, the adoption of e-appointment systems in the Philippines has proven to be an effective solution in addressing scheduling inefficiencies in healthcare and counseling services. These systems,

particularly in guidance and counseling, help reduce no-shows and minimize double booking by streamlining the appointment process and providing automated reminders. This enhances both the accessibility and efficiency of services, ensuring better utilization of resources and reducing administrative burdens. As Khalil and Serhier (2023) emphasize, key factors such as ease of use, perceived usefulness, and trust significantly influence the acceptance of such systems. Locally, these platforms are transforming the delivery of mental health services by fostering more reliable and organized scheduling systems that improve both user satisfaction and service outcomes.

Web-based appointment systems, such as Guidance and Counseling Services Management System, allow students to schedule sessions with counselors without the need for in-person or phone interactions, which are often inefficient and error-prone. These systems can also send automated reminders, helping reduce no-shows and ensuring better utilization of counseling resources. By optimizing the scheduling process, such systems enhance both the efficiency and responsiveness of guidance counseling services, making them more accessible to students and reducing administrative workload (Maurat et al., 2024; Ele et al., 2021).

Document Management and Student Assessments

In addition to scheduling, many guidance counseling systems now incorporate features for managing student records, assessments, and other documents. Digital platforms allow counselors to store and track student information securely, improving efficiency and reducing the risk of lost or misplaced records (EdTech Magazine, 2017).

These tools also enhance communication among stakeholders and streamline administrative tasks (Oaktree Practice Management System, n.d.). Furthermore, systems often include online assessment tools such as career aptitude tests and psychological evaluations.

These features support counselors in understanding student needs and providing more tailored guidance (Jellins, 2015; Johnson, 2024). However, the use of such technology also calls for attention to data privacy, confidentiality, and appropriate implementation practices (American School Counselor Association [ASCA], 2023).

Challenges of Technology in Counseling

While digital solutions offer significant benefits, challenges remain. A major concern is data privacy and security, as counseling records often contain sensitive personal information (López et al., 2020). Furthermore, user engagement with digital platforms can be a barrier, particularly for students who may not be familiar with or comfortable using technology. To address these concerns, guidance counseling systems must be designed with robust security features, user-friendly interfaces, and accessible support mechanisms.

Service Integration in Digital Platforms

The integration of multiple services into unified digital platforms has become increasingly prevalent in the education sector, offering numerous benefits such as enhanced efficiency, improved user experience, and better accessibility to services (Kovaion, 2024). By consolidating various counseling services—including appointment booking and assessments—into a single platform, institutions can provide a more seamless experience for both students and counselors (ConexED, 2023). Such integrated platforms often encompass academic advising, career services, health services (e.g., referrals to medical professionals), peer support groups, and information on financial aid and scholarships, thereby promoting holistic student support. The implementation of single sign-on (SSO) solutions further streamlines access to these services, enhancing communication and collaboration among different departments (Ellucian, 2022). However, challenges persist, including data integration issues, ensuring compliance with data privacy regulations across departments, and the necessity of training staff to effectively utilize the integrated platform (Microsoft, 2024).

Benefits of Integration

Research shows that integrated systems can improve the consistency of service delivery, provide real-time data analysis, and increase student satisfaction by offering a comprehensive set of tools within a single interface (Harris et al., 2019). Examples of integrated platforms in education include student portals that provide access to scheduling, grades, assignments, and counseling services.

4. Key Theories and Models Related to System Development

The development of an integrated guidance counseling system requires a sound theoretical framework for software development. Two popular models include the Agile Development Model and the Waterfall Model. The Agile model, which emphasizes iterative development, flexibility, and collaboration, is particularly useful for systems that require continuous updates and user feedback (Highsmith, 2002). In contrast, the Waterfall model follows a linear, step-by-step approach, suitable for projects with well-defined requirements from the outset. The chosen Agile methodology will involve short development sprints, daily stand-up meetings, and regular sprint reviews to ensure that the project stays on track and that user feedback is incorporated effectively.

Given the evolving needs of MSU-IIT students and the desire to incorporate user feedback throughout the development process, an Agile development model, specifically Scrum, is deemed more suitable than the Waterfall model. Scrum allows for iterative development, frequent testing, and continuous improvement based on user feedback, ensuring that the platform meets the changing needs of the student population.

User-Centered Design

The principles of user-centered design (Norman, 2013) are critical for developing accessible and effective systems. By focusing on user needs and usability, the system can ensure that the interface is intuitive, navigable, and tailored to the diverse needs of students and counselors.

Heuristics Evaluation

The development of a web-based counseling system for students at MSU-IIT requires careful attention to its user interface (UI) design to ensure it meets user needs and expectations. Nielsen's Heuristic Evaluation, a widely recognized method for assessing website usability, plays a crucial role in this process. By applying Nielsen's heuristics, designers can improve key aspects of the system's interface, such as ease of navigation, clarity of information, and aesthetic appeal. As Subay et al. (2024) highlight, the UI is the primary tool for interaction, making a well-designed interface essential for user comfort and engagement.

For MSU-IIT, creating a smooth and intuitive user experience is critical, as students will depend on the system for counseling and academic support. Nielsen's principles—such as system status visibility, consistency, error prevention, and flexibility—ensure the counseling system is both functional and attractive, enhancing user engagement. Sutcliffe (2001) notes that a website's attractiveness impacts user dwell time, encouraging students to explore the system's resources. By applying these principles, the web-based counseling system for MSU-IIT can offer a seamless, accessible, and efficient experience, directly aligning with the goal of providing transparent and easily accessible content for students (Nizamani et al., 2021).

5. Data Security and Privacy in Web-Based Counseling Platforms

In the context of web-based counseling and guidance services, protecting sensitive student data is paramount. With the increasing shift to digital platforms for services such as counseling, mental health assessments, and academic support, it is essential to ensure that students' personal and sensitive information is securely handled. This is not only a matter of maintaining student trust but also of complying with legal and ethical requirements designed to protect personal data.

Regulations and Compliance

The **Data Privacy Act of 2012 (Republic Act No. 10173)** in the Philippines mandates that organizations handling personal data implement stringent measures to ensure data security and privacy. Educational institutions offering counseling services must adhere to these regulations to safeguard the confidentiality of sensitive information, including health data, academic records, and personal identifiers. Compliance with such laws not only protects students' privacy rights but also ensures that digital platforms meet legal standards.

Internationally, regulations like the **General Data Protection Regulation (GDPR)** in the European Union and the **Health Insurance Portability and Accountability Act (HIPAA)** in the United States impose similar obligations on organizations managing student and healthcare data. These frameworks emphasize the importance of transparency, data security,

and individuals' rights to access and control their personal data. For instance, the GDPR grants individuals the right to be forgotten, allowing them to request the deletion of their data, while HIPAA enforces strict protocols for the protection of health information (**OneTrust, n.d.**). Both regulations underscore the necessity for organizations to implement robust data protection measures and maintain transparency in data handling practices.

Challenges in Web-Based Security for Counseling Platforms

Despite established legal frameworks, securing web-based counseling platforms remains a complex endeavor. Cyberattacks such as hacking and phishing continue to pose significant threats to online services handling sensitive data. Phishing attacks, in particular, deceive users into revealing confidential information, leading to unauthorized access and data breaches. Implementing robust encryption protocols is essential to protect data during transmission and prevent interception by malicious actors (Cybersecurity and Infrastructure Security Agency [CISA], n.d.; DataGuard, 2023).

Access control is another critical challenge. Ensuring that only authorized personnel can access sensitive information, while allowing students secure management of their records, necessitates advanced authentication systems. However, traditional methods like Role-Based Access Control (RBAC) often fall short in dynamic environments, highlighting the need for more adaptable solutions (Eknert, 2022).

Data storage and retention practices also present security concerns. Storing data beyond its necessary period increases vulnerability to breaches, especially if proper deletion protocols are not in place. Secure cloud hosting and effective data management strategies are vital to mitigate these risks (Cybersecurity Dive, 2023; ZenData, 2023).

Furthermore, user behavior significantly impacts platform security. Lack of awareness about cybersecurity best practices can lead to weak passwords and susceptibility to phishing scams, compromising account security. Educating users on safe online practices is crucial to bolster the overall security posture of counseling platforms (CISA, n.d.).

Solutions and Best Practices

To address the challenges in securing web-based counseling platforms, several strategies have been implemented to ensure the protection of sensitive data.

- **Data Encryption:** Implementing SSL/TLS encryption is crucial for safeguarding data during transmission. These protocols encrypt the information exchanged between clients (students) and servers, preventing unauthorized access during transmission (DataSecurityIntegrations.com, 2024).
- **Role-Based Access Control (RBAC):** RBAC ensures that only authorized personnel, such as counselors and administrators, can access sensitive student data. This approach reduces the risk of unauthorized access or misuse by enforcing the principle of least privilege (WorkOS, 2024).
- **Multi-Factor Authentication (MFA):** MFA enhances login security by requiring additional verification steps, such as text message codes or authentication apps. This ensures that only legitimate users can access their accounts (TechRepublic, 2023).
- **Regular Security Audits and Penetration Testing:** Conducting regular security audits and penetration testing is essential for identifying vulnerabilities in the system. By simulating potential cyberattacks, these practices allow platforms to address weaknesses proactively before they can be exploited (GuidePoint Security, 2023).
- **User Education Campaigns:** Educating users about safe online practices, such as choosing strong passwords and recognizing phishing attempts, has been shown to reduce security risks significantly (SANS Institute, 2023).
- **Technical Solutions:** In addition to general encryption and access control, platforms can implement specific technical solutions such as firewalls and intrusion detection systems (IDS). Firewalls prevent unauthorized access to the network, while IDS monitor network traffic for suspicious activity (InfoSec Institute, 2023).

- **Data Breach Response Plan:** Developing a comprehensive data breach response plan is vital. This plan should outline procedures for identifying, containing, and recovering from data breaches, including protocols for notifying affected students and regulatory bodies in a timely manner (Perkins Coie, 2023).

2.2 Related Systems or Projects

Most systems do not combine important tasks, such as scheduling, managing resources, and keeping track of student progress. This makes it harder for students to get the help they need. The proposed Integrated Counseling and Guidance Services Platform for MSU-IIT draws inspiration from existing systems and projects designed to enhance guidance and counseling services. These systems, while innovative and effective, present opportunities for improvement that the proposed platform aims to address. Below is an overview and comparison of the proposed platform with related projects:

1. <https://www.erudit.org/en/journals/jtl/2024-v18-n2-jtl09788/1115488ar/abstract/>
2. <https://www.ijams-bbp.net/wp-content/uploads/2023/06/1-IJAMS-MAY-2023.pdf>
3. https://d1wqtxts1xzle7.cloudfront.net/106431109/22803_ijrse_final-libre.pdf?1696911218=&response-content-disposition=inline%3B+filename%3DPriming_the_college_guidance_counseling.pdf&Expires=1750497617&Signature=PzYwj8ZL7vytY1~sPboPOzqZb6n86JwB~Lv5p7g~kOkaDFAi2n-L0YkGFw34SGvSCw-rjeL1I3flTLRBoF3THsgstVHg5CYZPG-BFTk9AWCymuqfqz3xtly7yAhkn0keitQkpjMXDOU-aF~NKuJ8Q6hlCokOw5Z5LP-bbzqUxpKfpge-BJMI39ZkLPpt0u5Yp25jz3K90IOuukmQpeSmDGMwMqQrs45UGJbEfj63HhsBwgL5w1D9-xA7yZyV~sWYAE04~nuh8JwW9aAxdYcOuA3NpiDXN476aJ6MHjxne1Zxr0i40ErubczP6zyhyJwFqUEEXBI8lwq11dsRQSV~w__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
4. <https://online-journal.unja.ac.id/JSSH/article/view/39231>
- 5.

Guidance and Counseling Record Management System

The *Guidance and Counseling Record Management System* developed by Alegado et al. (2021) aimed to enhance the organization, accessibility, and efficiency of student counseling record management. Key features include digital storage, retrieval, and editing of student data. The system was developed using Visual Basic 2017 and SQL Server 2017 and followed the System Development Life Cycle (SDLC) model. It was positively evaluated in terms of functionality, usability, portability, efficiency, and security. This system serves as a foundational reference for the current study, which expands its scope by integrating developmental services such as mental health monitoring, scheduling, and self-assessment tools.

Guidance and Counseling Services Management System

Buenviaje et al. (2019) developed the *Guidance and Counseling Services Management System* to assist school counselors in managing appointments and facilitating communication with students. The system includes modules for appointment scheduling, student information management, and administrative reports. Developed using PHP and MySQL, it was evaluated through performance testing and user feedback. Although it streamlined administrative counseling tasks, it lacked features related to student mental health tracking or personalized support. The proposed platform adopts this system's functional base and enhances it with interactive mental health tools and more student-focused services.

Design of a Case Management System for School Counselors

This system, developed by De La Salle University (2020), focused on assisting school counselors in handling caseloads through tools such as case tracking, student profiling, and follow-up scheduling. Developed as part of a university project, it utilized web-based technologies and underwent internal prototype testing. While effective in managing counselor workflows, it lacked support for broader guidance services like tutorial planning, testing modules, and mental health resources. The current study builds on this by introducing features for academic support, a mental health corner, and needs assessments to create a more comprehensive platform.

MyCounselor: Guidance and Counseling Support System for Higher Education Institute in the Philippines

Cariaga and Regala (2021) created *MyCounselor*, a web-based platform designed to support guidance counseling in higher education institutions. It includes features such as appointment booking, career guidance, and academic progress tracking. Built using PHP and MySQL, the system was evaluated through deployment in partner colleges and analyzed using user satisfaction surveys. While effective for basic counseling services, the system lacked integration with academic support and extracurricular features. The proposed platform addresses these limitations by student needs assessments, and documentation workflows, enabling more holistic student support.

Guidance and Counseling Record Management System

(Alegado, Alegado, & Alcantara, 2021) is a web-based platform developed for the Nueva Ecija University of Science and Technology's Guidance Office. The system enables efficient storage, retrieval, and management of student counseling records. It was developed using Visual Basic 2017 and SQL Server 2017, following the System Development Life Cycle (SDLC) methodology. It was evaluated based on functionality, usability, portability, efficiency, and security, and was found to meet user expectations across all criteria. This system serves as a strong foundation for the proposed system, as it demonstrates how digitizing guidance records can improve efficiency, data accessibility, and service delivery in academic institutions. While their system focused mainly on record management, the proposed study builds on this by integrating additional features such as appointment scheduling and online counseling requests, making the service more accessible and student-centered. Furthermore, the study provides valuable insights into the application of SDLC in building guidance-related platforms, which guided the planning and implementation of the current system.

Table 2.1

Comparative Features of Related Counseling Systems and the Proposed MSU-IIT OGC Platform

Feature/ Functionality	Guidance and Counseling Record Management System	Guidance and Counseling Services Management System	Case Management System for School Counselors	MyCounselor System	Proposed Platform for MSU-IIT OGC
Student Record Management	Yes	Yes	Yes	Yes	Yes
Appointment Scheduling	No	Yes	Yes	Yes	Yes
Counselor- Student Communication	No	Yes	Yes	Yes	Yes
Mental Health/Mood Tracking	No	No	No	No	Yes
Needs Assessment Survey	No	No	No	No	Yes
Self-Evaluation Tools	No	No	No	No	Yes
Case Monitoring & Follow-Up	No	Yes	Yes	Yes	Yes
Testing and Evaluation Module	No	No	No	No	Yes
Tutorial/ Academic Support Scheduling	No	No	No	No	Yes
Career Counseling Services	No	No	No	Yes	Yes
Integrated Guidance and Academic Services	No	Partial	No	No	Yes
Technology Used	VB 2017 + SQL Server	PHP + MySQL	Web-based	PHP + MySQL	PHP + MySQL
Target Users	Admins/ Counselors	Admins/ Counselors/ Students	Counselors	College Students	MSU-IIT Students & Counselors

This table provides a detailed comparison of the features offered by various related systems and the proposed Integrated Counseling and Guidance Services Platform for MSU-IIT. It highlights the strengths and limitations of each system to demonstrate how the proposed platform addresses existing gaps. While the aforementioned systems address specific needs in guidance and counseling, the Integrated Counseling and Guidance Services Platform for MSU-IIT stands out by offering a holistic approach. It combines administrative functionality, academic services, and a user-friendly interface. Below are the key comparative advantages of the proposed platform:

1. **Comprehensive Service Modules:** The platform integrates counseling, testing, tutorial services, and individual planning, extending its capabilities beyond those of most existing systems.
2. **Integration with Technology:** Leveraging modern web-based solutions, the platform provides real-time updates, efficient scheduling, and streamlined resource management, meeting the demands of the digital age.
3. **Focus on Administrative Efficiency:** Features such as a document procedures manual and centralized scheduling tools simplify management processes, ensuring the smooth operation of guidance services.

By incorporating these features, the platform surpasses the capabilities of existing systems and serves as a comprehensive solution for the Office of the Guidance Counselor, ultimately enhancing student development and well-being.

Summary of Literature

This review shows how important guidance counseling is for students' success, both in school and in life. It helps students with their academic performance, emotional health, and future career choices. Using technology in guidance counseling can make these services faster, easier to access, and more efficient. For example, online systems for scheduling appointments can replace old, paper-based methods and make everything run more smoothly.

While technology brings many advantages, there are still challenges, such as protecting student information and ensuring that students and counselors know how to use the new systems. However, when these issues are addressed, technology can greatly improve the quality of counseling services.

Another important point is the idea of integrating different services, like appointment booking, assessments, and communication, into one platform. This

makes it easier for both students and counselors to manage everything in one place. Current systems, like MyCounselor, are helpful, but the system proposed in this study will go further by adding more services, such as tutoring and event management, all within one system.

In conclusion, the use of technology in guidance counseling is an important step in improving how students get support. It makes services more accessible, efficient, and personalized. This chapter supports the idea that an integrated digital system can help improve counseling services and meet the needs of students in today's digital world.

CHAPTER 3

METHODOLOGY

3.1 Research Design

This study follows a mixed-method approach integrated within the Rapid Application Development (RAD) model to ensure both user-centered system development and comprehensive system evaluation. The RAD model, characterized by iterative development and continuous user involvement, guides the structured phases of platform creation through its fast development and delivery and low costs (Beynon-Davies et. al.. 1999). This approach is particularly well-suited for the study, as it provides a comprehensive and multidimensional understanding by combining qualitative insights with quantitative data.

A qualitative approach is utilized during the requirements planning phase through the semi-structured interviews with the guidance counselors, capturing their experiences, challenges, and expectations regarding the proposed system. This method facilitates an in-depth exploration of their subjective perspectives, uncovering nuanced insights that may not be evident through quantitative analysis alone (Braun & Clarke, 2019). This aligns with RAD's emphasis on early and sustained stakeholder engagement (Khan et. al., 2020)

In User Design and Rapid Construction Phases, the iterative feedback mechanisms between the development team and stakeholders enable real-time modifications and collaborative decision-making. This process shows a flexible and participatory development model of RAD (Khan et. al., 2020).

The quantitative component supports system evaluation through structured surveys using Likert-scale items, administered to counselors and selected users. These surveys enable the assessment of key variables related to system usability and overall impact (Fink, 2017). By synthesizing these data sources, the study provides a well-rounded evaluation of the platform's effectiveness.

The integration of RAD with a mixed-method approach allows for data triangulation, enhancing the validity and reliability of the findings (Creswell, 2014). This combined methodology ensures a holistic evaluation, allowing researchers to identify potential limitations and propose well-informed improvements that align with the specific needs of the OGC at MSU-IIT (Almeida, 2018). Ultimately, this approach strengthens the study's ability to generate meaningful conclusions and actionable recommendations for optimizing the my.OGC platform.

3.2 Rapid Application Development (RAD) Model Overview

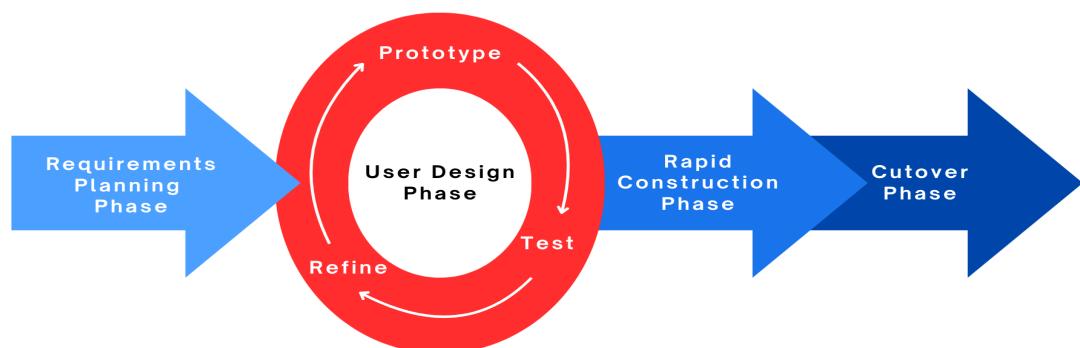


Figure 3.2 RAD Model of my.OGC

The development of my.OGC, a web-based platform for the Counseling and Guidance Services of MSU-IIT, follows a Rapid Application Development (RAD) methodology. RAD is selected for its emphasis on fast-paced iterative cycles, active stakeholder involvement, and modular prototyping.

The Rapid Application Development (RAD) model follows a structured yet flexible sequence of four phases: requirements planning, user design, rapid construction, and cutover. In the requirements planning phase, stakeholders such as users, developers, and decision-makers collaborate to define system objectives, key requirements, and project constraints (Kruchten, 1999). This is followed by the user design phase, where iterative prototyping and joint workshops enable end-users and developers to refine system interfaces and workflows based on immediate feedback

(Dennis, Wixom, & Roth, 2009). The rapid construction phase involves the modular development of system components using the approved prototypes, with continuous user involvement for feedback and early testing. Finally, in the cutover phase, the completed system is deployed in a live environment, accompanied by user training, data conversion, and final testing to ensure readiness for full implementation (Pressman, 2010). This process allows for faster delivery, higher user satisfaction, and adaptability to evolving requirements.

This approach is well-suited for systems requiring rapid delivery while remaining responsive to evolving user needs. Through continuous involvement of both students and guidance counselors, the RAD model ensured that the system aligns with institutional requirements and enhanced user satisfaction (Stojanovski & Dzekov, 2012).

3.3 Application of RAD Model

Requirements Planning Phase

Target Population

The target population for this study comprises the guidance counselors at Mindanao State University-Iligan Institute of Technology (MSU-IIT). These counselors are integral to the Office of Guidance and Counseling (OGC) and are directly involved in providing counseling services to students. Their roles encompass managing appointments, collecting feedback, and providing resource materials, making them ideal participants for evaluating the proposed digital platform's functionality and effectiveness.

Sampling Method

Purposive Sampling will be employed to select participants who are actively engaged in the counseling process and possess comprehensive knowledge of the OGC's workflows and requirements (Palinkas et al., 2015). This non-probabilistic sampling technique ensures that the selected counselors can provide rich, relevant, and diverse insights into the system's operational aspects and its impact on service delivery.

This approach is ideal for this study as it targets individuals with specific expertise and involvement in counseling services, ensuring the collection of relevant and detailed qualitative and quantitative data (Creswell, 2014). Counselors not only utilize the platform to manage their workflows but

also oversee its implementation and effectiveness, providing comprehensive feedback on its operational aspects and impact on service delivery.

Sample Size:

A total of eight guidance counselors from MSU-IIT will be purposively selected as participants for this study. This sample size is expected to achieve data saturation, ensuring no significant new themes or insights emerge during the evaluation process (Guest et al., 2006).

The decision to focus solely on guidance counselors as participants is based on several key considerations:

- **Relevance of Expertise:** Guidance counselors are the primary users of the platform's core features, such as appointment management and feedback collection. Their expertise ensures that the system is evaluated for both functionality and alignment with institutional needs.
- **Bias Mitigation:** Involving students during the testing phase may lead to feedback that focuses more on user preferences rather than the system's operational reliability. By prioritizing counselor evaluations, the study ensures the platform is rigorously assessed for its intended purpose.
- **Operational Endorsement:** Guidance counselors act as gatekeepers for institutional tools. Their feedback serves as a quality assurance step to confirm that the platform is ready for deployment within MSU-IIT. Once they approve the platform, it can be safely introduced for broader student use.

By focusing on guidance counselors, this study ensures that the platform is thoroughly evaluated for usability, functionality, and institutional readiness before it is deployed to students.

3.3.2 User Design Phase

3.3.3 Rapid Construction Phase

3.3.4 Cutover Phase

3.4 Participants and Sampling

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3.5 Research Instruments

Counselor Survey

A structured questionnaire will be developed to collect quantitative data from guidance counselors. The survey will include Likert-scale questions designed to assess counselors' satisfaction with the system's functionality, usability, and effectiveness in improving counseling services. The survey will cover the following domains:

- Usability: Ease of navigation, user interface design, and overall user experience.
- Functionality: Effectiveness of key features such as appointment scheduling, feedback collection, and a mental health corner.
- Satisfaction: Overall satisfaction with the system and its impact on counseling services.
- Effectiveness: The system's ability to address existing challenges and enhance service delivery.

Counselor Interviews

Semi-structured interviews will be conducted with guidance counselors to gather qualitative data on their experiences with the current paper-based systems and their expectations for the new digital platform. The interview guide will be developed

based on a literature review and preliminary discussions with key stakeholders in the OGC to ensure relevance and comprehensiveness. The interview guide will be reviewed by subject matter experts, including experienced guidance counselors and academic advisors, to ensure its validity and reliability.

3.6 Data Collection Procedure

Preparation:

1. Ethical Approval: Obtain ethical approval from the Institutional Review Board (IRB) of Mindanao State University-Iligan Institute of Technology to ensure compliance with ethical standards in research.
2. System Approval: Secure approval from school administrators for testing the proposed digital system within the OGC.
3. Participant Consent: Develop and distribute informed consent forms to all participating counselors, detailing the study's objectives, procedures, confidentiality assurances, and their right to withdraw at any time without penalty.

Data Collection:

1. Counselor Surveys

- Administration: The surveys will be administered online using platforms such as Google Forms or a survey tool provided by the university.
- Distribution: Counselors will receive a link to the survey via email, along with instructions and a deadline for completion, approximately 1-2 weeks after sending.
- Follow-Up: Reminders will be sent to counselors who have not completed the surveys within the timeframe to ensure a high response rate.

2. Counselor Interviews

- Scheduling: In-depth interviews will be scheduled at times convenient for the participating counselors, either in person at the OGC office or via a secure online platform like Google Meet or Zoom.

- Conducting Interviews: Each interview will last approximately 45-60 minutes, allowing for comprehensive discussions while respecting participants' time constraints.
- Recording: With consent, interviews will be audio-recorded to ensure accurate data capture and transcription.
- Transcription: Interview recordings will be transcribed using Otter.ai within 48 hours of each interview to facilitate timely analysis.

Follow-up:

- Survey Completion: Counselors who have not completed the surveys will receive additional reminders to encourage participation.
- Interview Transcriptions: Transcriptions will be reviewed for accuracy and anonymized to protect participants' identities.

Duration: The data collection phase will span 3-4 weeks, with the first two weeks dedicated to distributing and collecting survey data and the final weeks focused on conducting and transcribing interviews.

3.7 Data Analysis Plan

Quantitative Data Analysis

The quantitative data collected from the counselor surveys will be analyzed using Statistical Package for the Social Sciences (SPSS). The analysis will include:

- Descriptive Statistics: Calculating means, frequencies, and percentages to summarize the data and provide an overview of counselors' satisfaction levels and perceptions of system usability and effectiveness.
- Inferential Statistics: Conducting t-tests or ANOVA to identify any significant differences in satisfaction based on variables such as years of experience, frequency of system use, or specific roles within the OGC.

Qualitative Data Analysis

The qualitative data from the semi-structured interviews will be analyzed using thematic analysis, following Braun and Clarke's (2006) six-phase framework:

1. Familiarization: Transcribing and thoroughly reading the interview transcripts to become intimately familiar with the data.

2. Generating Initial Codes: Systematically coding interesting features of the data across the entire dataset.
3. Searching for Themes: Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing Themes: Checking if the themes work in relation to the coded extracts and the entire dataset, refining the specifics of each theme.
5. Defining and Naming Themes: Clearly defining what each theme represents and determining an appropriate name.
6. Producing the Report: Selecting vivid, compelling exact examples, finalizing the analysis, and relating the themes back to the research questions and literature.

Integration of Data

The study will employ triangulation to integrate the quantitative and qualitative findings, providing a comprehensive evaluation of the digital platform. This integration will involve:

- Comparing Results: Examining how qualitative insights from interviews corroborate or contrast with quantitative survey findings.
- Explaining Discrepancies: Investigating any inconsistencies between the two data sets to provide a nuanced understanding of the system's impact.
- Enhancing Validity: Using multiple data sources to validate and enrich the overall findings, ensuring a robust and credible analysis.

3.8 Ethical Considerations

1. Confidentiality

All data collected will be kept confidential. Survey responses will be anonymous, and interview transcripts will be anonymized by removing any identifying information to protect participants' identities. Only the research team will have access to the raw data, which will be stored securely on encrypted digital storage devices.

2. Informed Consent

Prior to participation, all guidance counselors will receive an informed consent form outlining the study's objectives, procedures, potential risks, and benefits. Counselors will be informed of their right to withdraw from the study at any

time without any negative consequences. Consent will be obtained in writing before the commencement of surveys and interviews.

3. Voluntary Participation

Participation in this study is entirely voluntary. Counselors who choose not to participate will not face any negative repercussions, and those who participate retain the right to withdraw at any point during the study without any penalties.

4. Data Security

All data collected will be stored on secure, encrypted digital storage devices, and any physical copies, if necessary, will be kept in locked cabinets accessible only to the research team. Data will be retained for a period of five years following the study's completion, in accordance with institutional guidelines, after which it will be permanently deleted.

5. Risk Management

While this study poses minimal risks to participants, any potential discomfort or distress arising from discussing professional experiences will be mitigated by:

- Providing Options: Participants can skip questions or terminate the interview at any point if they feel uncomfortable.
- Offering Support: Providing information about support resources if participation induces unexpected discomfort

3.9 System Design and Development

The development of my.OGC, a web-based platform for integrated counseling and guidance services, follows a structured approach to ensure functionality, usability, and alignment with the needs of MSU-IIT's counseling office. The following sections outline the key stages of the system design and development lifecycle.

3.7.1 System Overview

The proposed system will be a web-based platform designed to integrate multiple counseling services, such as appointment scheduling, and a mental health corner. It aims to enhance counselor efficiency and improve the user experience for both counselors and students.

System Design

An activity diagram is created to visualize the current functions and interactions between the students, counselors and the system.

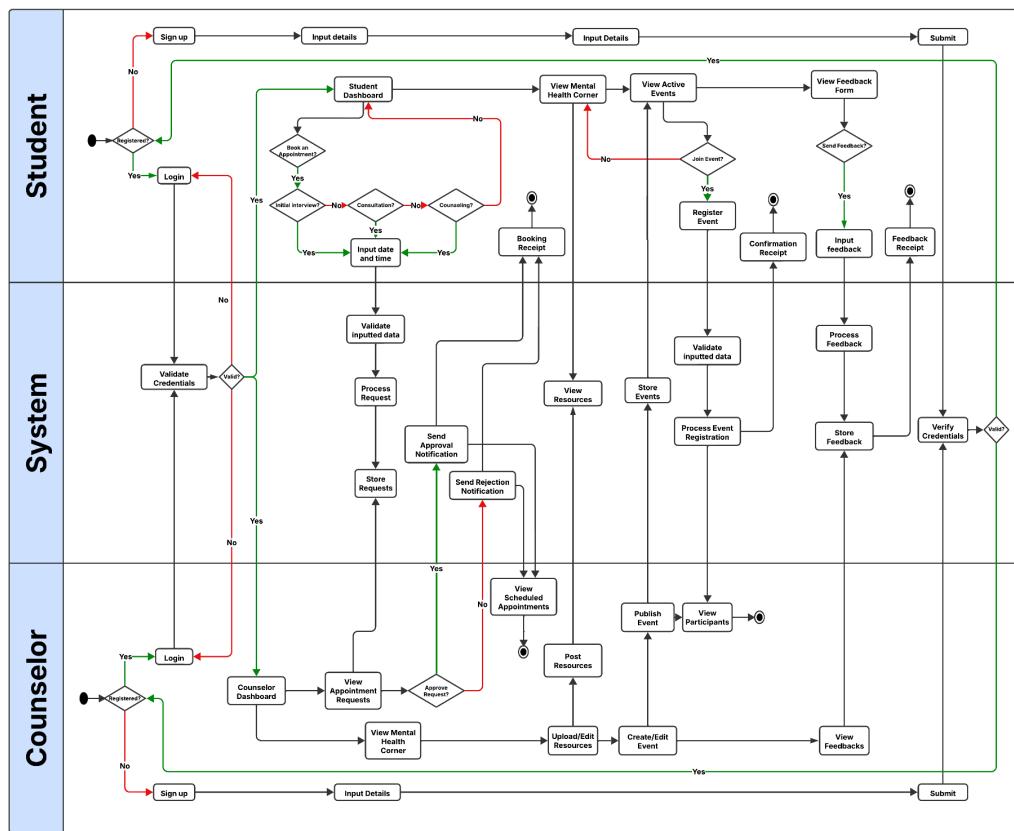


Figure 3.1 Activity Diagram of My.OGC Management System

This activity diagram illustrates the proposed Guidance and Counseling Website's workflow, highlighting features like appointment scheduling and mental health corner to streamline processes and enhance efficiency within MSU-IIT's Office of Guidance and Counseling (OGC).

3.7.2 System Architecture

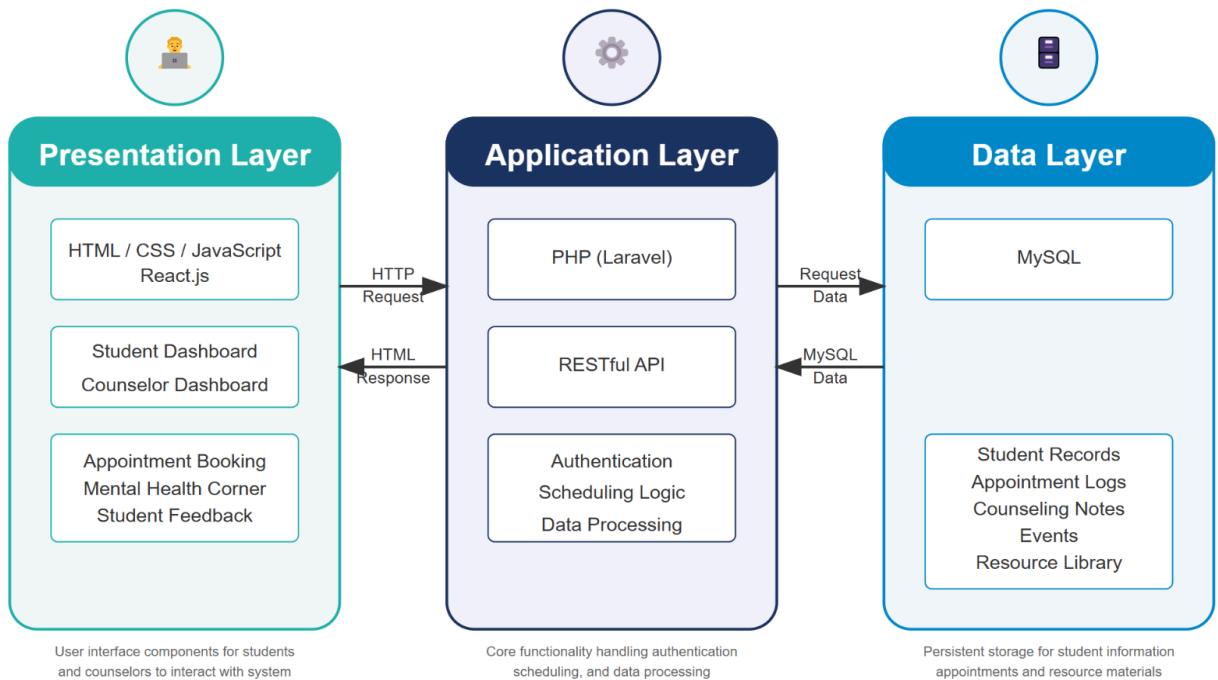


Figure 3.2 Three-Tier System Architecture of my.OGC Management System

The my.OGC system implements a three-tier architecture that separates the application into distinct functional layers: Presentation Layer, Application Layer, and Data Layer. This architectural approach enhances maintainability, scalability, and security of the guidance and counseling platform.

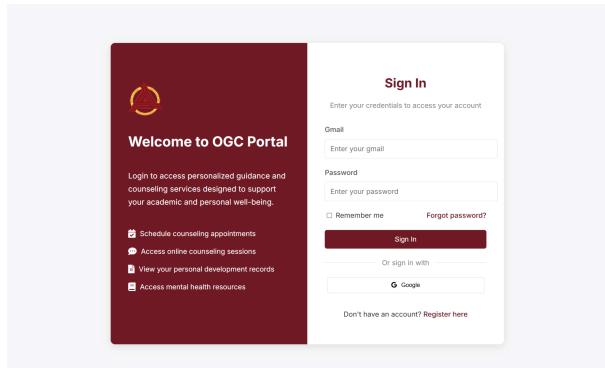
The system will consist of the following components:

- **Frontend:** The user interface (UI) will be developed to be responsive and user-friendly, ensuring smooth navigation across devices (computers, tablets, and smartphones).
- **Backend:** The server-side components will manage the database, appointment scheduling, document storage, and user authentication.
- **Database:** MySQL will be used to store and manage data securely
-

3.7.3 Wireframes and UI Design:

- **Student Dashboard:** A simple interface where students can book appointments, track counseling sessions, and access resources.

- **Counselor Dashboard:** A comprehensive interface where counselors can manage their schedules, add resources and events, access student records, and generate reports.
- **Wireframes** were designed and prototyped using HTML, CSS, and JavaScript to ensure the system is functional, interactive, and visually structured. This approach allowed for rapid iteration and early testing of key user flows.



Sign In page

Register Account Page

Student Dashboard

Student Appointment Tracker

Book an Appointment Page

Feedback Page

Counselor Appointment Overview Page

Mental Health Corner Page

Counselor Dashboard

Counselor Student Records Page

Counselor Counseling Calendar

Counselor Session Notes

Counselor Resources

Counselor Reports

3.7.4 Key Features:

- **Appointment Scheduling:** Counselors can efficiently manage student appointments through an intuitive online booking system with automated reminders.
- **Activity Calendar:** A comprehensive academic-year calendar will display counseling events, workshops, and mental health programs to keep students informed.
- **Mental Health Corner:** Students can access curated mental health resources, including ebooks, articles, and YouTube videos recommended by counselors.
- **Feedback Mechanism:** Counselors can document session insights, track student progress, and refine the system based on user feedback.

3.7.5 Development Tools:

- **Frontend:** HTML, CSS, JavaScript, and React.js will be used for the UI.

- **Backend:** PHP with Laravel will be used for backend development.
- **Database:** MySQL for structured data storage.

3.7.6 Database Design

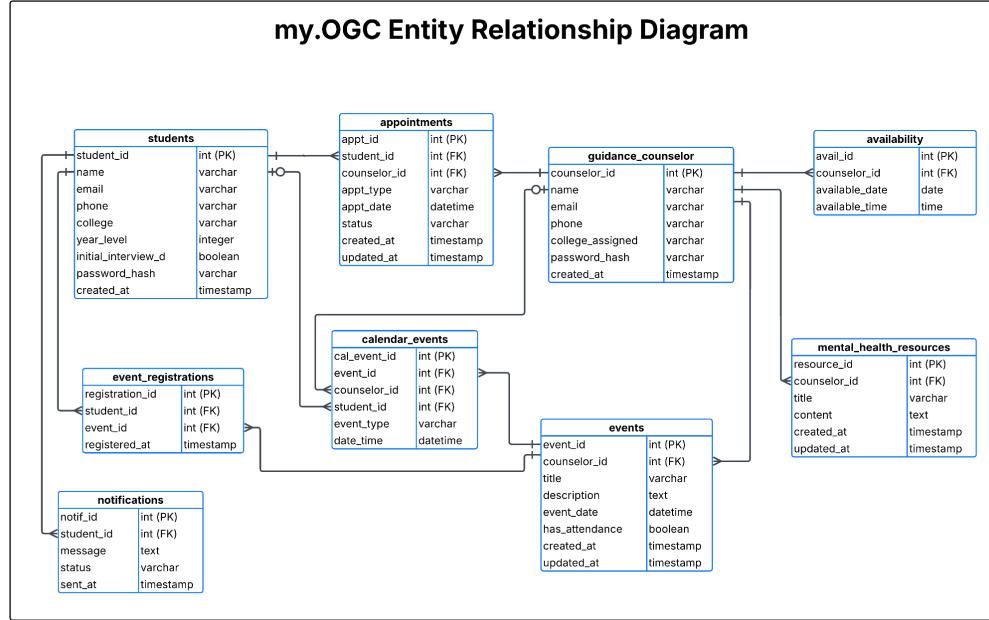


Figure 3.3 Entity Relationship Diagram of my.OCG

The Entity Relationship Diagram (ERD) above illustrates the database schema for the my.OCG system, a centralized platform for school guidance and counseling services. This diagram uses crow's foot notation to represent the relationships between entities, with primary keys (PK) and foreign keys (FK) clearly marked. The database design supports the core functionality of the system: appointment booking, mental health corner to access free resources and event management for students and guidance counselors.

Core Entities and Their Relationships

The my.OCG database centers on interconnected entities supporting the guidance and counseling platform. The **students** entity stores registered users' information and credentials, while the **guidance_counselor** entity contains counselor records. Together, these enable authentication and role-based access to system features.

The **appointments** entity functions as the booking system's core, storing appointment types, scheduling information, and status indicators. It

establishes many-to-one relationships with both counselors and students, linking each appointment to specific users.

The **mental_health_resources** entity connects to students, storing various materials like videos and e-books while tracking resource usage. The **calendar_events** entity stores information about counselor-organized activities, working with **event_registrations** to track student participation.

The **notifications** entity manages communications between students and counselors, delivering appointment confirmations, event reminders, and system announcements to enhance engagement and effectiveness.

3.7.7 RAD Development Approach

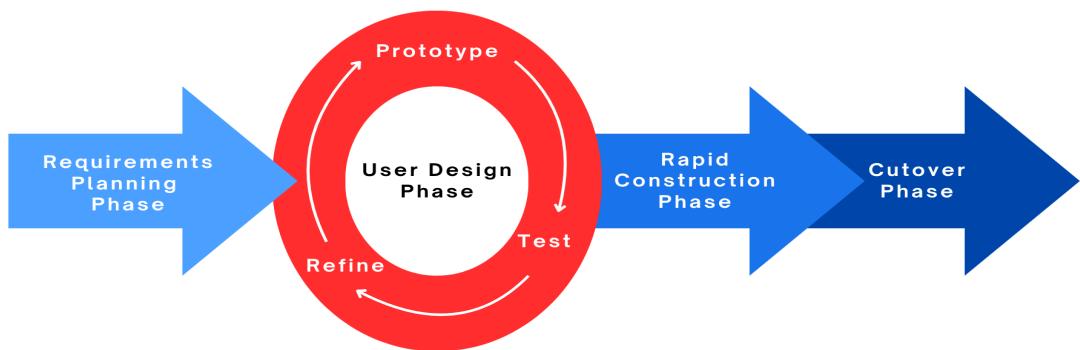


Figure 3.4 RAD Model of my.OGC

The development of my.OGC, a web-based platform for the Counseling and Guidance Services of MSU-IIT, followed the Rapid Application Development (RAD) methodology. RAD was selected for its emphasis on fast-paced iterative cycles, active stakeholder involvement, and modular prototyping. This approach is well-suited for systems requiring rapid delivery while remaining responsive to evolving user needs. Through continuous involvement of both students and guidance counselors, the RAD model ensured that the system aligned with institutional requirements and enhanced user satisfaction (Stojanovski & Dzekov, 2012).

The RAD implementation in the my.OGC project was carried out across three (3) major iterations, with each iteration focusing on the development and refinement of specific system modules. The entire process was organized into the following four phases:

1. Requirements Planning

Conducted through structured Joint Application Development (JAD) sessions with Office of Guidance and Counseling (OGC) personnel. Key features such as appointment scheduling, feedback collection, and mental health resources were prioritized based on institutional needs.

2. User Design

Initial wireframes and prototypes were created using alternative prototyping tools, allowing early user feedback and interface adjustments. This phase ensured that the system interface aligned with user expectations and counseling workflows.

3. Rapid Construction

The system was developed in three focused iterations, each ending with internal Alpha Testing. The first iteration implemented core login and authentication features. The second focused on appointment scheduling and calendar integration. The third included feedback submission, content access, and basic administrative controls. Each iteration included internal validation and refinement before continuing to the next cycle.

4. Cutover

The Cutover phase included final integration of modules, internal system review, and preparation for training materials and documentation. This phase did not include full system deployment to end-users; rather, it marked the system's readiness for future implementation and external testing. Deployment and formal user rollout are identified as part of future work.

The RAD methodology provided a practical framework for developing a functional and user-centered platform within a constrained timeline. By limiting the project to three controlled iterations and reserving full deployment for future phases, the team ensured that the system reached a stable Minimum Viable Product (MVP) state while remaining open to further evaluation and enhancement (Behutiye et al., 2020).

3.7.8 Use Case Diagram and Specifications

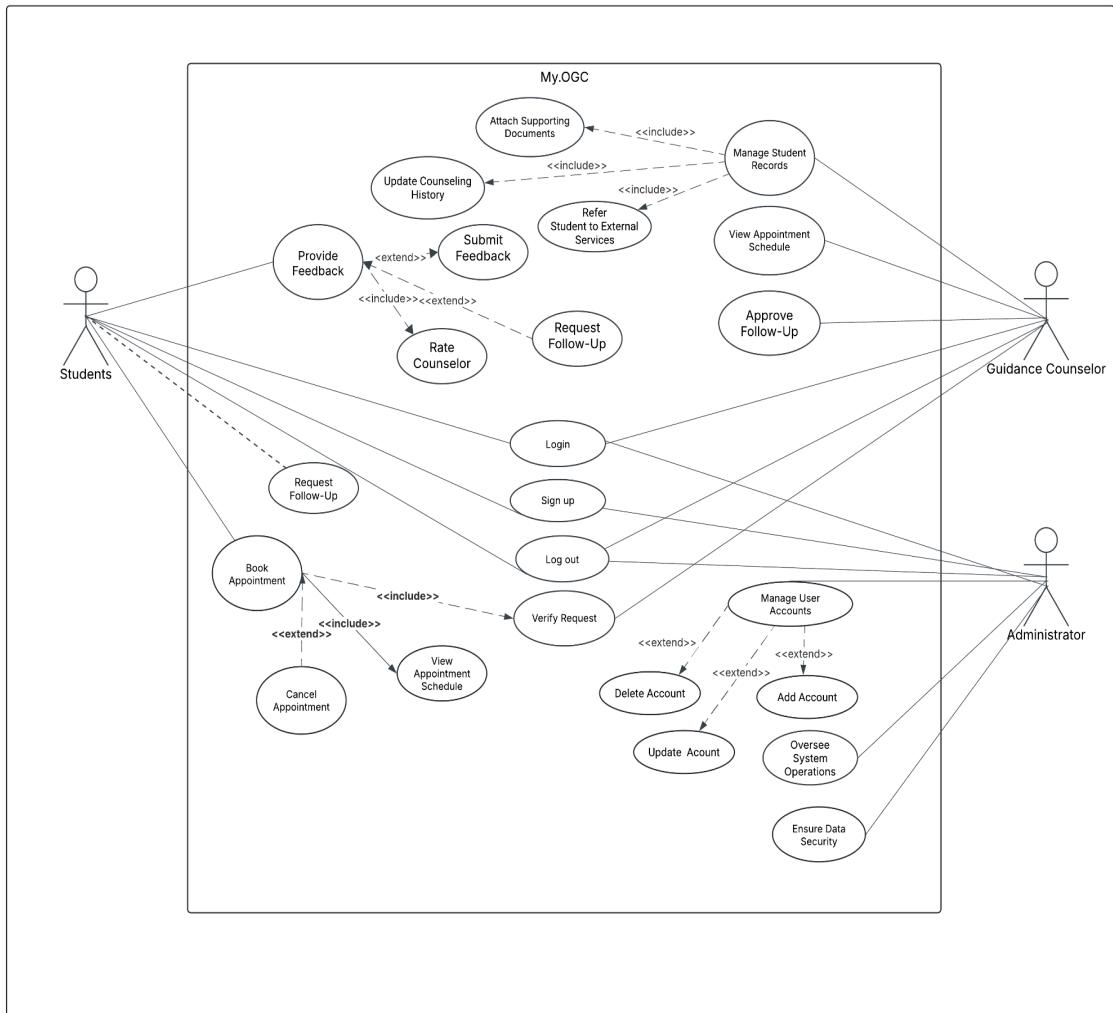


Figure 3.5 Use Case Diagram of my.OGC

This use case diagram illustrates the main functions of the My.OGC system and how different users interact with it. Students can book and cancel appointments, submit feedback, request follow-ups, and manage their accounts. Guidance Counselors handle student records, view appointment schedules, refer students to external services, and update counseling history. Administrators are responsible for managing user accounts, ensuring data security, and overseeing system operations. The diagram also shows system processes like login, sign-up, and account updates, with relationships indicating required or optional actions.

BOOK APPOINTMENT	
Item	Details
Use Case Name	Book Appointment

Actor(s)	Student
Preconditions	Student must be logged into the system.
Basic Flow	<ol style="list-style-type: none"> 1. Student accesses the booking section. 2. Student selects date and time. 3. Student submits appointment request. 4. System verifies schedule and saves the booking.
Alternative Flow	If selected slot is unavailable, system notifies the student to choose another slot.
Postconditions	Appointment is recorded; confirmation is displayed to the student.
Exceptions	System error during booking process displays error message and allows retry.
CANCEL APPOINTMENT	
Item	Details
Use Case Name	Cancel Appointment
Actor(s)	Student
Preconditions	Appointment must already exist. Student must be logged in.
Basic Flow	<ol style="list-style-type: none"> 1. Student selects appointment to cancel. 2. Student confirms cancellation. 3. System deletes appointment from schedule.
Alternative Flow	None.
Postconditions	Appointment is removed; student receives cancellation confirmation.
Exceptions	If appointment does not exist, system shows an error

SUBMIT FEEDBACK	
Item	Details
Use Case Name	Submit Feedback
Actor(s)	Student
Preconditions	Student must have attended a session. Must be logged in.
Basic Flow	<ol style="list-style-type: none"> 1. Student fills in feedback form. 2. Student optionally rates counselor. 3. Student submits the form. 4. System saves feedback.
Alternative Flow	Blank form: system prompts user to complete required fields.
Postconditions	Feedback is stored in the database.
Exceptions	System error during submission prompts user to retry.
VIEW RESOURCES	
Item	Details
Use Case Name	View Resources
Actor(s)	Student
Preconditions	Student must be logged in.
Basic Flow	<ol style="list-style-type: none"> 1. Student navigates to resources section. 2. Student views available mental health materials.
Alternative Flow	None.
Postconditions	Resource viewed; no database changes.

Exceptions	System error in loading materials displays an error page.
REQUEST FOLLOW-UP	
Item	Details
Use Case Name	Request Follow-Up
Actor(s)	Student
Preconditions	Student must have an existing counseling record.
Basic Flow	<ol style="list-style-type: none"> 1. Student clicks "Request Follow-Up". 2. Student submits request. 3. System forwards request to Counselor for approval.
Alternative Flow	None.
Postconditions	Follow-up request is logged into the system.
Exceptions	Submission failure prompts user to resubmit.
LOGIN	
Item	Details
Use Case Name	Login
Actor(s)	Student, Counselor, Administrator
Preconditions	User must have an existing account.
Basic Flow	<ol style="list-style-type: none"> 1. User enters credentials. 2. System validates credentials. 3. System grants access to appropriate dashboard.
Alternative Flow	Incorrect credentials: system displays "Invalid Login" message.

Postconditions	User gains access to system features.
Exceptions	System error prevents login, displaying error notification.
SIGN UP	
Item	Details
Use Case Name	Sign Up
Actor(s)	Student
Preconditions	Student must access registration form.
Basic Flow	<ol style="list-style-type: none"> 1. Student fills registration form. 2. System verifies email and required fields. 3. System saves new user account.
Alternative Flow	Duplicate email detected: system prompts student to use another email.
Postconditions	New student account created.
Exceptions	Database error during registration prompts retry.
MANAGE USER ACCOUNTS	
Item	Details
Use Case Name	Manage User Accounts
Actor(s)	Administrator
Preconditions	Admin must be logged in.
Basic Flow	<ol style="list-style-type: none"> 1. Admin adds, updates, or deletes user accounts. 2. System verifies changes. 3. System updates user database.

Alternative Flow	Invalid account update: system rejects the operation and displays an error.
Postconditions	User database updated according to admin actions.
Exceptions	System error during operations shows appropriate error message.

MANAGE STUDENT RECORDS

Item	Details
Use Case Name	Manage Student Records
Actor(s)	Guidance Counselor
Preconditions	Counselor must be logged in.
Basic Flow	<ol style="list-style-type: none"> 1. Counselor views student records 2. Counselor edits or updates counseling history 3. System saves changes.
Alternative Flow	Unauthorized record access attempt: system denies access.
Postconditions	Student records updated accordingly.
Exceptions	System error saving changes displays an error notification.

APPROVE FOLLOW-UP

Item	Details
Use Case Name	Approve Follow-Up
Actor(s)	Guidance Counselor
Preconditions	Follow-up request must exist.

Basic Flow	<ol style="list-style-type: none"> 1. Counselor reviews follow-up request. 2. Counselor approves or denies request. 3. System updates request status.
Alternative Flow	Counselor rejects request: system marks request as denied.
Postconditions	Request status updated and reflected to student.
Exceptions	Database error during approval process shows error message.

Table 3.1: Use Case Specifications of my.OGC Management System

3.7.9 Class Diagram

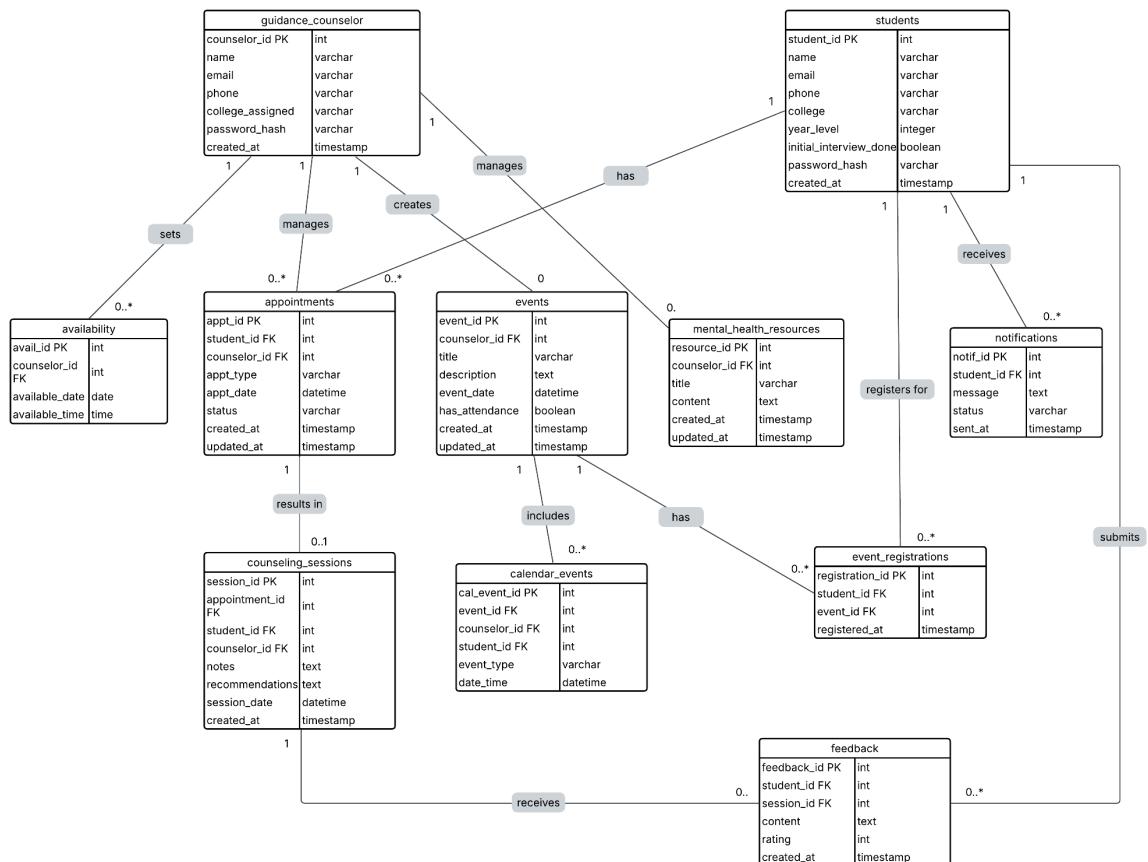


Figure 3.6 Class Diagram of my.OGC

The database schema presented in this class diagram forms the foundation of a comprehensive Guidance Counseling Management System designed to facilitate

interactions between students and counselors in an academic setting. At its core, the system maintains two primary user entities: students, containing academic and contact information along with authentication credentials, and guidance counselors, storing professional details and their assigned college affiliations. The appointment management subsystem enables structured scheduling through the appointments table, which records meeting details while referencing counselor availability slots stored in the availability table. Completed consultations are documented in counseling_sessions, where counselors record session notes and recommendations, subsequently allowing students to provide evaluative feedback on their counseling experience.

Beyond individual consultations, the system includes a robust event management framework that allows counselors to create and manage events such as workshops or seminars, with students registering their attendance via event_registrations. These events, along with scheduled appointments, are stored in the calendar_events table, which provides a unified scheduling view. Counselors can publish mental health resources in the dedicated mental_health_resources table to help students with ongoing support, while the notifications system ensures that important updates, event reminders, and appointment confirmations are communicated on time. The schema's relational structure ensures data integrity while supporting key workflows such as initial appointment booking, counselor availability management, post-session feedback collection, and event participation tracking. This integrated approach promotes both administrative efficiency in counseling operations and increased student engagement with guidance services.

3.7.10 Sequence Diagram

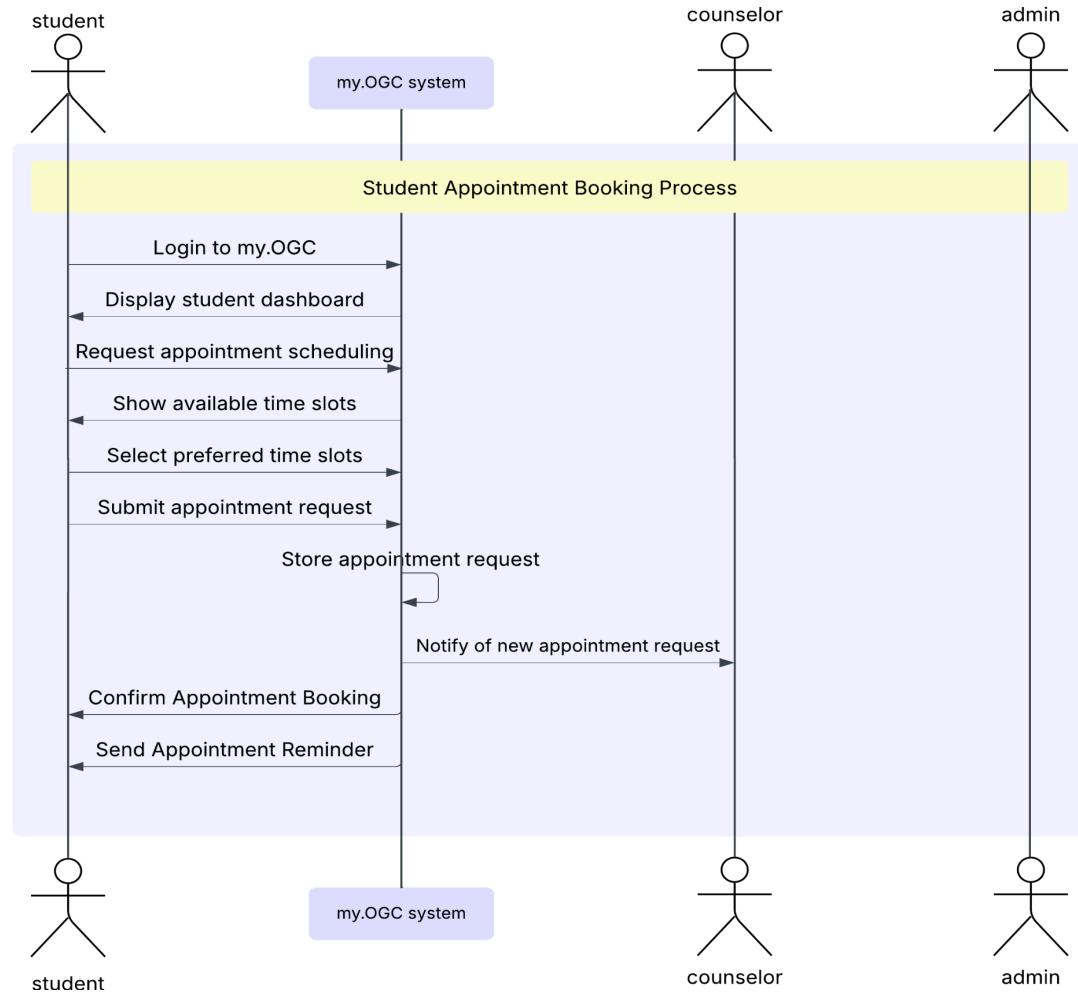


Figure 3.7 Sequence Diagram for Student Appointment Booking Process

Figure 3.7 illustrates the sequential interactions between a student user and the my.OGC system during the appointment booking process. The diagram depicts the entire workflow, starting with the student logging into the system and moving through several key steps: viewing the dashboard, requesting an appointment, reviewing available time slots, selecting a preferred time, and submitting the request. After submission, the system stores the appointment request and notifies the counselor of the new booking. The process ends with the system confirming the appointment with the student and sending a reminder. This sequence ensures a smooth, user-friendly appointment booking experience while maintaining proper communication among all stakeholders.

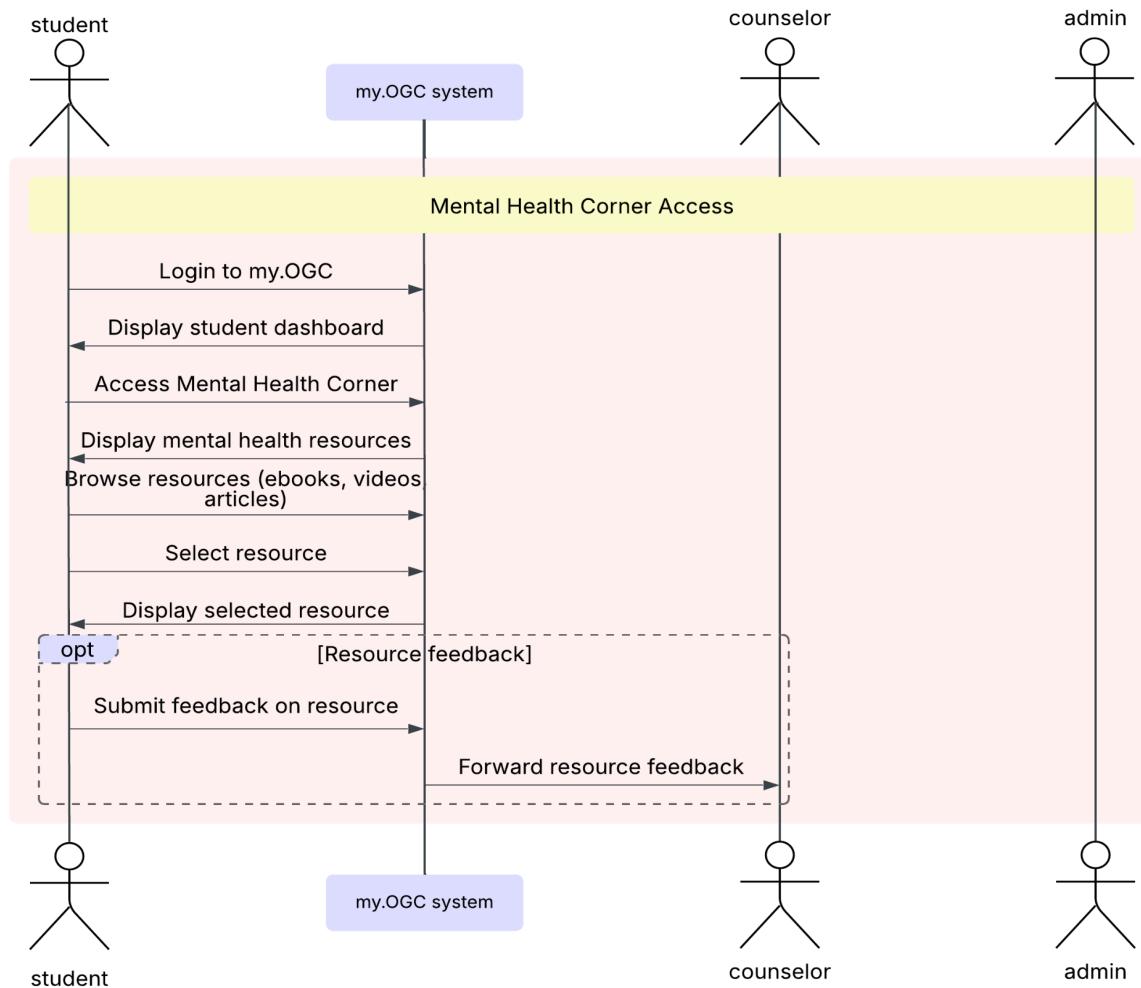


Figure 3.8 Sequence Diagram for Mental Health Corner Access

Figure 3.8 depicts the interaction sequence for accessing the Mental Health Corner feature of the my.OCG platform. The diagram shows the student logging into the system, navigating to the Mental Health Corner from their dashboard, and browsing available resources including ebooks, videos, and articles. Upon selecting a specific resource, the system displays it to the student. An optional sequence shows how students can provide feedback on resources they've accessed, which the system then forwards to counselors for review. This sequence demonstrates how the platform facilitates easy access to mental health resources while incorporating a feedback mechanism to continuously improve the quality and relevance of available materials.

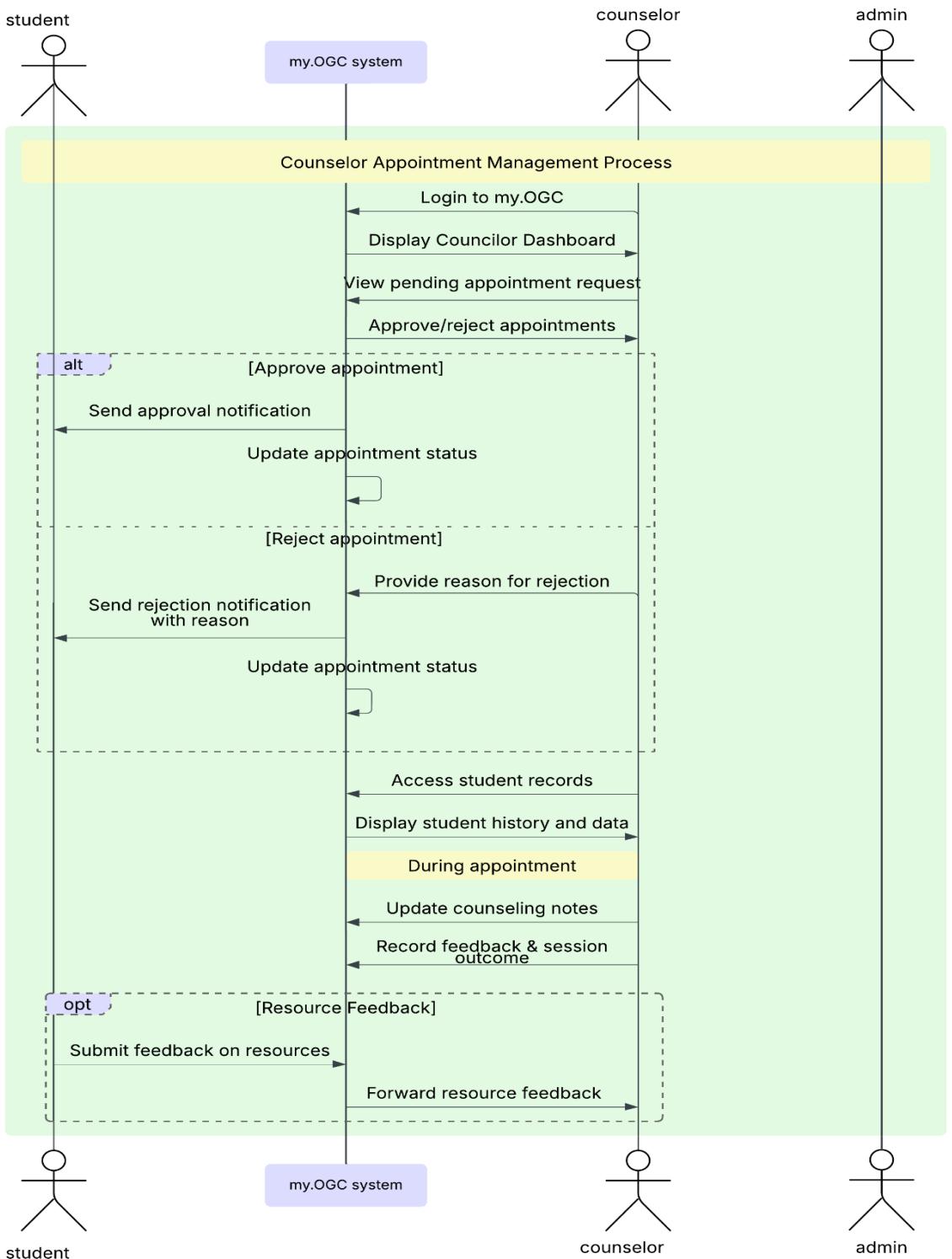


Figure 3.9 Sequence Diagram for Counselor Appointment Management Process

Figure 3.9 presents the sequence of interactions between counselors and the my.OGC system for managing appointment requests. After logging in, counselors can view pending appointment requests and take action by either approving or rejecting them. The diagram shows alternative paths based on the counselor's decision:

approval leads to notification sent to the student and status update in the system, while rejection requires providing a reason before notifying the student. The sequence continues with counselors accessing student records, viewing history and data, and during the appointment, updating counseling notes and recording feedback. An optional sequence shows how students can submit feedback on resources, which is then forwarded to counselors. This comprehensive workflow enables efficient appointment management while maintaining detailed records of counseling sessions.

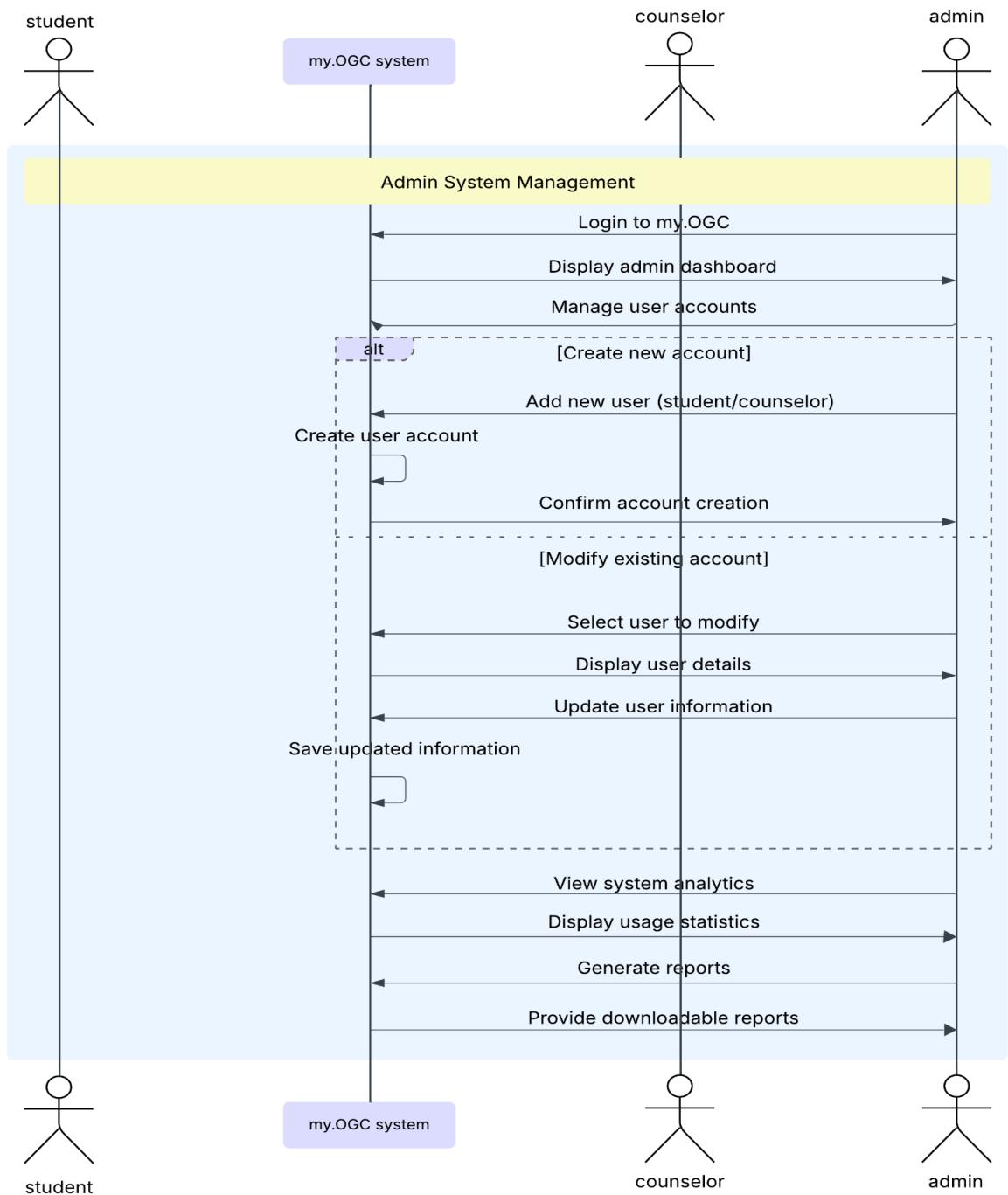


Figure 3.10 Sequence Diagram for Admin System Management

Figure 3.10 illustrates the administrative functions within the my.OGC system. The diagram shows how administrators login and access their dashboard to perform critical system management tasks. The sequence includes two alternative paths for user account management: creating new accounts (for students or counselors) and modifying existing accounts. For new accounts, the admin enters user details, the system creates the account, and confirms completion. For existing accounts, the admin selects a user, views their details, updates information, and the system saves these changes. The diagram also shows administrators viewing system analytics, generating usage statistics, and creating downloadable reports. This sequence demonstrates the comprehensive administrative capabilities that ensure proper system maintenance, user management, and performance monitoring.

3.7.11 Deployment Diagram

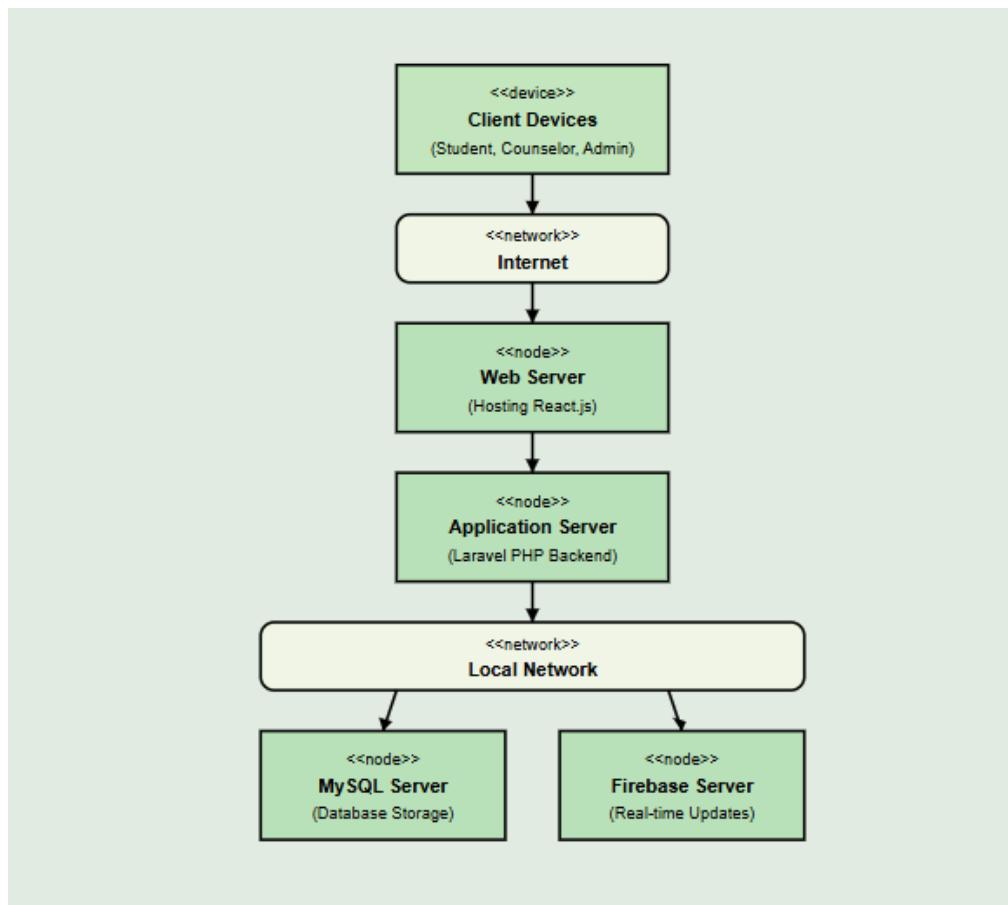


Figure 3.11: Deployment Diagram of my.OGC Management System

This deployment diagram presents the system architecture of my.OGC, following client-server architecture principles. Users interact through client devices connected via the Internet to the Web Server hosting the React.js frontend. The Web Server communicates with the Application Server, which handles backend processes through Laravel. Data is managed through the Local Network, which connects to two separate nodes: the MySQL Database Server for structured data storage and the Firebase Server for real-time synchronization and notifications.

Node	Description
Client Devices	Devices used by students, counselors, and admins to access the system through a web browser.
Internet	Communication medium connecting client devices to the web server.
Web Server	Hosts and delivers the React.js-based frontend application.
Application Server	Processes business logic and API interactions through Laravel backend.
Local Network	Internal secure network connecting the backend to databases.
MySQL Server	Primary relational database for user data, appointments, and feedback.
Firebase Server	Provides real-time updates for notifications and messaging.

Table 3.2: Description of Nodes in the Deployment Diagram of myOGC Management System

3.8 Testing and Validation

Alpha Testing During RAD Iterations

Alpha Testing was conducted internally during the three development iterations of the RAD model. This phase focused on validating the functionality, usability, and stability of the system's core modules during and after each iteration. The purpose of Alpha Testing was to identify and resolve technical issues early in the development cycle,

ensuring that each module functioned correctly before proceeding to the next phase of construction and integration.

Each major system module was evaluated using a structured functionality testing checklist, as shown below:

Module	Test Focus
Authentication and Login	Account creation, login validation, session management
Appointment Booking	Calendar integration, time conflict handling, appointment confirmation
Calendar Management	Availability display, appointment reminders
Mental Health Resources	Resource uploading, viewing, and access control
Feedback Submission	Form validation, feedback storage, and retrieval

Table 3.3: Alpha Testing Focus Areas by System Module

Testing was conducted at the completion of each iteration. All issues identified during testing were documented and immediately addressed before moving on to the next development cycle. This iterative approach ensured that the final system build was stable and aligned with the project's functional objectives.

3.9 Summary

This chapter outlined the methodological and developmental framework for evaluating and building the my.OGC platform. Through the combined use of mixed-methods research and the RAD system development model, the project ensured a user-centered and technically robust design. Alpha testing confirmed internal functionality, while external user acceptance testing is recommended for future iterations to ensure institutional readiness and user satisfaction.

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Appendices

- **Interview Questions:**

1. General Questions

1. Can you provide an overview of the current counseling and guidance services at the Office of Guidance and Counseling (OGC)?
2. How do students typically access these services, and what are the most common reasons for seeking counseling?
3. What challenges does the OGC currently face in delivering its services?

2. Current Workflow and System Usage

4. How do you currently manage student appointments for counseling sessions?
5. What tools or methods do you use for record-keeping and tracking student progress?
6. Are there any existing digital solutions used for guidance and counseling at MSU-IIT? If yes, what are their limitations?
7. How does the OGC handle confidentiality and security of student records?

3. Issues with the Existing System

8. What are the most common problems with appointment scheduling?
9. Are there issues with follow-ups or students missing their scheduled sessions?
10. How does the OGC gather feedback from students regarding counseling services?
11. What features would help improve the efficiency of guidance services?

4. User Expectations for the my.OGC Platform

12. What are the key features that the OGC would like to see in a digital platform?
13. Would automated notifications/reminders for appointments be useful?
14. How important is the inclusion of a **Mental Health Corner** with self-help resources?
15. Should the platform support online counseling sessions, or do you prefer in-person meetings?

5. Technical & Security Concerns

16. What are your concerns regarding the security and privacy of student records on a digital platform?
17. Are there any regulatory or ethical requirements that the system should comply with?
18. Do you foresee any challenges in transitioning from a paper-based system to a web-based one?

6. Accessibility & Usability

19. How comfortable are counselors and students with using digital platforms?
20. Would training or orientation sessions be needed to ensure effective adoption of the system?

Documents

Permission Letter to Conduct an Interview

DEPARTMENT OF INFORMATION TECHNOLOGY
COLLEGE OF COMPUTER STUDIES

scc.iitg.msuit.edu.ph

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January 29, 2025

Dear Sir Michael Alain J. Mamauag,

Greetings!

I hope this letter finds you well. We are third-year students of the Bachelor of Science in Information Technology program under the Department of Information Technology at Mindanao State University - Iligan Institute of Technology (MSU-IIT). We are currently conducting our undergraduate thesis titled "**Development of myOGC: A Web-Based Platform for Integrated Counseling and Guidance Services at MSU-IIT.**"

The goal of our research is to design and develop a system that addresses existing challenges in the Office of Guidance and Counseling (OGC) by integrating counseling services, event management, feedback collection, and mental health resources into a single platform. We believe that gathering insights directly from the OGC team would greatly enhance our understanding of the current processes and requirements, ensuring that the proposed system aligns with the actual needs of its users.

In line with this, we respectfully request a schedule for an interview with you and/or your team at your most convenient time. The interview will focus on understanding the current workflows, challenges, and expectations for a digital platform designed to streamline counseling and guidance services.

Rest assured that any information shared during the interview will be treated with strict confidentiality and will only be used for academic purposes.

We hope for your kind consideration and look forward to your favorable response. Please let us know your available schedule so we can adjust accordingly. You may contact us through our contact information or email below.

Thank you for your time and support. God Bless!

Sincerely,

Jaicad ·
Jaica C. Dionaldo
Email: jaica.dionaldo@g.msuit.edu.ph
Contact No.: 09261595162

Rose ·
Rose Andrea D. Kisol
Email: roseandrea.kisol@g.msuit.edu.ph
Contact No.: 09159050709

Noted by:

Salau
PROF. ERIK LOUWE R. SALA
Thesis Adviser

Consent Form



Research Consent Form

Development of myOGC: A Web-Based Platform for Integrated Counseling and Guidance

Services at MSU-IIT

Principal Investigator: Jaica Dionaldo, Geff Kendra Gaviola, and Rose Andrea Kisol

Institution/Organization: Mindanao State University - Iligan Institute of Technology

Research Team Members:

Jaica Dionaldo

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Rose Andrea Kisol

roseandrea.kisol@g.msuiit.edu.ph

1. Purpose of the Study

You are being invited to participate in a research study. This study is conducted to streamline access to mental health support for undergraduate students at MSU-IIT by providing real-time monitoring of stress and anxiety levels and offering early intervention strategies, with the goal of reducing the need for external counseling or emergency interventions through self-awareness and timely guidance.

2. Procedures

If you choose to take part in this study, you will be interviewed to answer questions regarding the current state of mental health monitoring and support at MSU-IIT. Example questions include "What are the main sources of your stress?" and "What are the main challenges you face when trying to manage stress and anxiety?". You can expect the total time to participate in this study to be approximately 1 hour.

3. Voluntary Participation

This interview is entirely voluntary. You can opt out of the interview at any time, with no serious consequence or penalty to which you are otherwise entitled. If you opt-out/withdraw, your data or any collected information will no longer be used.

4. Risks and Benefits

- **Risks:** There are no known risks associated with participating in this interview.

- **Benefits:** Although there may be no direct benefits to you personally, your participation may help advance knowledge in this area and contribute to the development of improved mental health monitoring solutions for MSU-IIT students and potentially other communities..

5. Confidentiality

All information gathered in this study will be kept confidential. We will protect your identity by securely storing all data in a password-protected file. Additionally, we will implement data anonymization techniques, replacing any details that could be linked to your identity with unique codes. This data will only be accessible to the research team, and your identity will remain undisclosed in any reports or publications.

6. Compensation

Your participation will greatly assist us in exploring effective ways to improve mental health monitoring and early intervention strategies for MSU-IIT students. To show our appreciation for your time and valuable insights, participants will receive a small thank-you gift as a token of our gratitude.

7. Contact Information

If you have any questions regarding this study, feel free to reach out to any of the principal researchers:

- Jaica Dionaldo at jaica.dionaldo@g.msuiit.edu.ph
- Geff Kendra Gaviola at geffkendra.gaviola@g.msuiit.edu.ph
- Rose Andrea Kisol at roseandrea.kisol@g.msuiit.edu.ph

If you have any concerns after reading this information sheet or if anything about the study has not been explained to your satisfaction, you may also contact our thesis adviser, Sir Erik Louwe Sala at eriklouwe.sala@g.msuiit.edu.ph

Adviser's Acknowledgement

"I acknowledge my role in supervising this research study and confirm its alignment with academic and ethical standards."

Thesis Adviser's Signature: _____

Date: _____

8. Consent

"I have read the information in this document and I understand that by signing below I agree to be a part of this research. I acknowledge that my participation is voluntary and I may discontinue the study at any time."

Participant's Name (Printed): _____

Participant's Signature: _____

Date: _____

